



Automotive Empire

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Automotive EMPIRE

*How Cars and Roads
Fueled European
Colonialism in Africa*

ANDREW DENNING



AUTOMOTIVE EMPIRE

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How Cars and Roads Fueled European
Colonialism in Africa

Andrew Denning

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Cover image: Paul Graetz's car mired in the Ngomberenga River, 1907. Source: Paul Graetz, *Im Auto quer durch Afrika* (Berlin: Gustav Braunbeck & Gutenberg, 1910).

For Whitney and Alessandra

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AUTOMOTIVE EMPIRE

THE COLONIAL TRANSPORT PROBLEM

In a 1931 speech, the inspector general of public works in the French Ministry of Colonies reflected on lessons learned during his career as a public servant in Algeria and Morocco. This architect of empire, Charles Maitre-Devallon, declared that European nations had “assumed moral and material responsibilities” for their subjects. “Civilization and production,” he proclaimed, “are the two aims of our colonial activity.”¹

However, men like Maitre-Devallon confronted a thorny problem. In European capitals, heads of state claimed massive colonies and established protectorates in Africa, drawing imperial maps that indexed the superiority and vigor of each nation and Europe as a whole—bigger meant better (figure I.1). But on African soil, expansive territories and low population densities impeded Europeans’ self-proclaimed colonial missions of civilization and production.² In response, Europeans and their African intermediaries forcibly enlisted tens of millions of anonymous Africans who constructed empire, usually with their bare hands.³ Between authorities in Europe and African laborers stood officials like Maitre-Devallon who designed and organized empire. For him, the European imperative to claim massive territories and their simultaneous difficulty overcoming Africa’s geographic and demographic conditions comprised the all-encompassing challenge of colonialism. “As soon as the world of pacification is finished, the work of civilizing and of exploiting in the European manner begins,” Maitre-Devallon observed. “Everywhere you are faced with the ‘transport’ problem.”⁴

Solving the transport problem was a concrete technical challenge that Europeans claimed would deliver material benefits through “exploiting” Africa’s

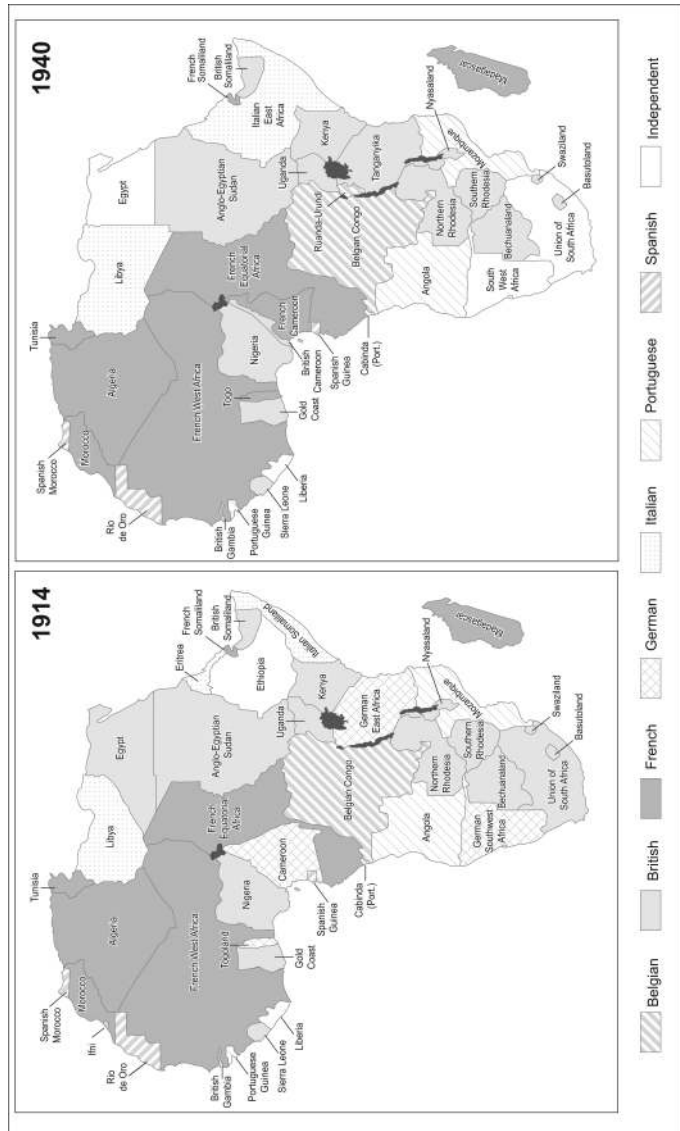


FIGURE I.1. Colonial holdings in Africa, 1914 and 1940. Some areas defy easy categorization, and a few circumstances require clarification: The Union of South Africa became a self-governing dominion of the British empire in 1910 and a fully sovereign state within the empire in 1934. German South West Africa was occupied by the Union of South Africa in 1915 and was administered by the Union of South Africa after World War I. The British claimed a protectorate over Egypt from 1882 to 1922, when Egypt became independent, but the British maintained significant influence in political and military affairs thereafter. One of the biggest points of contention was Sudan, which was jointly administered by Britain and Egypt from 1898 to 1956. Maps by Di Shi.

resources, but Maître-Devallon suggested that its stakes were monumental. Technology, infrastructure, and mobility could advance the material markers of civilization, but many commentators, both famous and obscure, went further. In a science fiction novella published in 1905, the British arch-imperialist Rudyard Kipling declared, "Transportation is Civilization!"⁵ In the Congo in the 1930s, Belgian officials described their program as "*coloniser, c'est transporter*"—to colonize is to transport.⁶ A German children's book of the late 1920s informed readers that "the economic significance of a people, the level of its culture, can be known with reasonable certainty from the state of its transportation."⁷ The French representative at the 1930 International Road Congress in Washington, DC, reported the meeting's consensus that "a good road is a generator of energy, a primordial factor in the development of peoples."⁸ And in 1929, the Italian dictator Benito Mussolini proclaimed his "Roman passion for roads, in which I see one of the fundamental elements of the welfare and unity of the people."⁹ Europeans agreed that the mobility, circulation, and communications afforded by transportation technologies and infrastructures were more than means to civilizing ends. They were civilization itself.¹⁰

The stakes of the transport problem were high, and colonial officials understood the challenge, fundamentally, as an environmental and spatial one.¹¹ For Giotto Dainelli, a professor at the University of Florence who mingled with Maître-Devallon at international colonial conferences, geography and civilization were intimately connected. In 1938, Dainelli argued that tropical Africa exacerbated the continent's spatial challenges, rendering Africa divided and pre-political, its peoples "deprived of history." On the one hand, he argued that tropical regions were hostile to civilization because their climate militated against intensive agriculture and the cultivation of varied crops, which sustained lasting *settlements*. On the other hand, he claimed, Africa's imposing landforms, including massive deserts and seemingly impenetrable tropical forests, arrested *movement*, hemming in political expansion and hampering the extracontinental contacts that stimulated innovations.¹²

Dainelli's analysis typifies a contradiction in European evaluations of Africa and their invention of a false dichotomy that I seek to disentangle. Was it settlement that anchored civilization? Or movement that sustained it? While the settlement/movement binary was oversimplified, the paradoxical meanings of mobility—how people moved (or did not), when and where they moved, and why—framed Europeans' understandings of African societies and shaped their contradictory approaches to the colonial transport problem.¹³ European programs of civilization and production depended on the right people moving in the right ways at the right times.¹⁴ To achieve European goals, it fell to the colonial state to orchestrate this delicate choreography of movement and settlement,

and Europeans' determined pursuit of solutions to the transport problem shaped colonialism in important and enduring ways.

The Origins of Automotive Empire

Scholars grappling with the history of empire have encountered their own transport problem. There is a long tradition of plotting the dynamics of empire around transportation technologies, infrastructures, and forms of mobility, as "technology was fundamental in determining the actual shape and organization of imperial regimes."¹⁵ Maritime empires of the early modern era, such as the Dutch and Portuguese, knit together global networks of trade between distant nodes, but their territorial ambitions were limited, and power often failed to penetrate beyond port cities.¹⁶ Railway empires of the long nineteenth century, such as in the United States or British India, pooled private capital and marshaled the bureaucratic resources of centralizing states to project their power on a continental scale.¹⁷ The air empire of the United States after World War II abjured formal colonial claims in favor of a "pointillist" global array of bases and outposts while extending soft power through passenger travel.¹⁸ Each of these models carefully avoids technological determinism, showing how human actors used technologies to accomplish imperial goals, while those technologies simultaneously shaped political and social projects and typified what the historian Gabrielle Hecht terms "technopolitics."¹⁹

This imperial schema has two notable holes—one technological and the other chronological. First, despite automobiles' status as a totem of the twentieth century, what Roland Barthes termed the "exact equivalent of the great Gothic cathedrals," they are absent from theorizations of empire.²⁰ "Automotive empire" has generally described the development of the car industry and Fordist business practices, not an imperial mode.²¹ Second, the height of European imperialism stretched from the Berlin Conference (1884–85) to World War II (fighting in Africa began in 1940). The British empire became the largest in human history in the interwar era, and the French empire, similarly, reached its territorial apex. Even middling European powers participated. Belgium's single colony in the Congo was seventy-six times larger than Belgium itself, while Portugal and Italy ruled over African colonies many times their size. Although the era 1885 to 1940 marked the height of European empire, and studies of technology and imperialism in this era abound, a unifying theoretical shorthand remains elusive.

Partially, this is because the development of transportation infrastructure in Africa paints an inconsistent picture. If we follow Maitre-Devallon's schematic colonial stages, European officials in Africa generally considered their lands

“pacified” by the turn of the nineteenth century and turned their attention to the continent’s transport problem. Before World War I, the solutions to the transport problem varied widely by region. In Congo Free State (later Belgian Congo), Belgian officials organized transport around the sprawling Congo River Basin, filling in gaps with roads, rails, and preexisting porter paths.²² In areas of southern and central Africa with known riches, private investors (particularly British) constructed railways from mines to ports.²³ The private financing and construction of railways made them tools of subimperial interests, and African railways were “not only the servant but also the principal generator of informal empire” in the late nineteenth century.²⁴ But after the war, rail construction in Africa slowed markedly as the age of speculation closed. Total war had staggered European economies, while few obvious targets for regular, remunerative rail services presented themselves. Notwithstanding a handful of new projects such as the Congo-Océan Railway in French Equatorial Africa, Africa’s rail map changed little between 1914 and 1940.²⁵ In most cases, rail construction was too costly and time-consuming to justify. Outside of settler colonies such as Algeria and South Africa, most rail lines were isolated, leading directly from inland resource basins to ports. As the map of African rails indicates, despite measuring almost forty-three thousand miles in total length by 1940, the continent’s rail network was no network at all (figure I.2).²⁶

In contrast, the African road network was over 350,000 miles long by 1940, and more than 750,000 motor vehicles (cars, trucks, and motorcycles) crisscrossed the continent (figure I.3).²⁷ If railways were servant and generator of informal empire in Africa before 1914, roads and motor vehicles produced formal empire in the 1920s and 1930s. Roads filled colonial territories that Europeans had imagined as *territorium nullius*, sometimes complementing and extending rail and river transport (colonial officials often described them as capillaries to rail and river arteries), but often supplanting them because of their low cost and speed of construction. And whereas trains were bound to railways, motor vehicles required little more than a path cleared of obstacles, offering European officials, businessmen, and missionaries a theoretically wider field of action.

Between 1895 and 1940, and particularly in the pivotal interwar decades, roads and motor vehicles emerged as Europe’s answer to Africa’s “transport problem.” Although pursued in distinct colonial territories by separate European sovereigns, the motivations, conduct, and outcomes of these projects connected the diverse lands and peoples of the African continent. As seafaring ships and railroads had done, roads and motor vehicles organized colonial spaces and structured political, economic, and social relations within African colonies and between them and European metropolises. They did so at the very moment

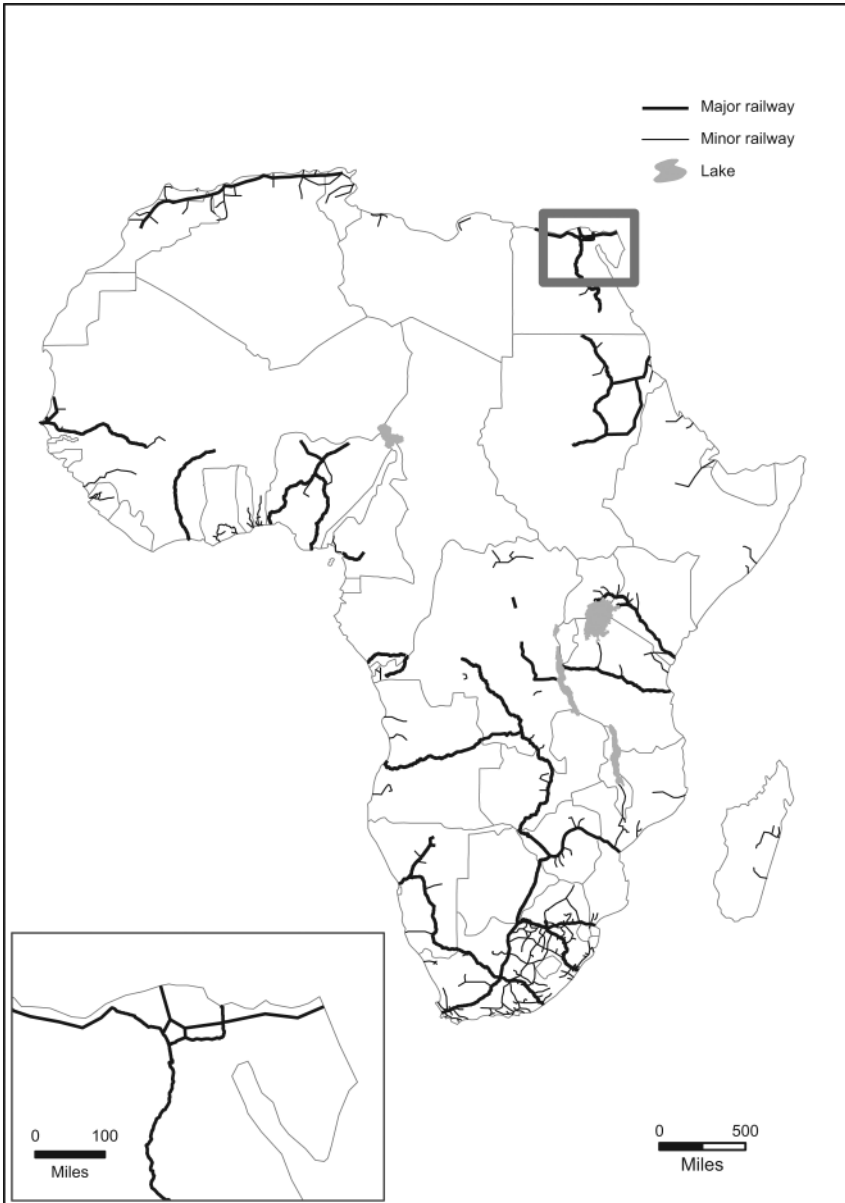


FIGURE I.2. African railways, 1940. Map by Di Shi.

that colonial administrations shifted gears from conquest and so-called pacification to development and exploitation.

Automotive empire was thus both a distinct *era* of European empire and a trans-imperial *form* of colonial rule in Africa that stretched from the Mediterranean to the Cape of Good Hope. Its significance emerges from the omnipresence of roads

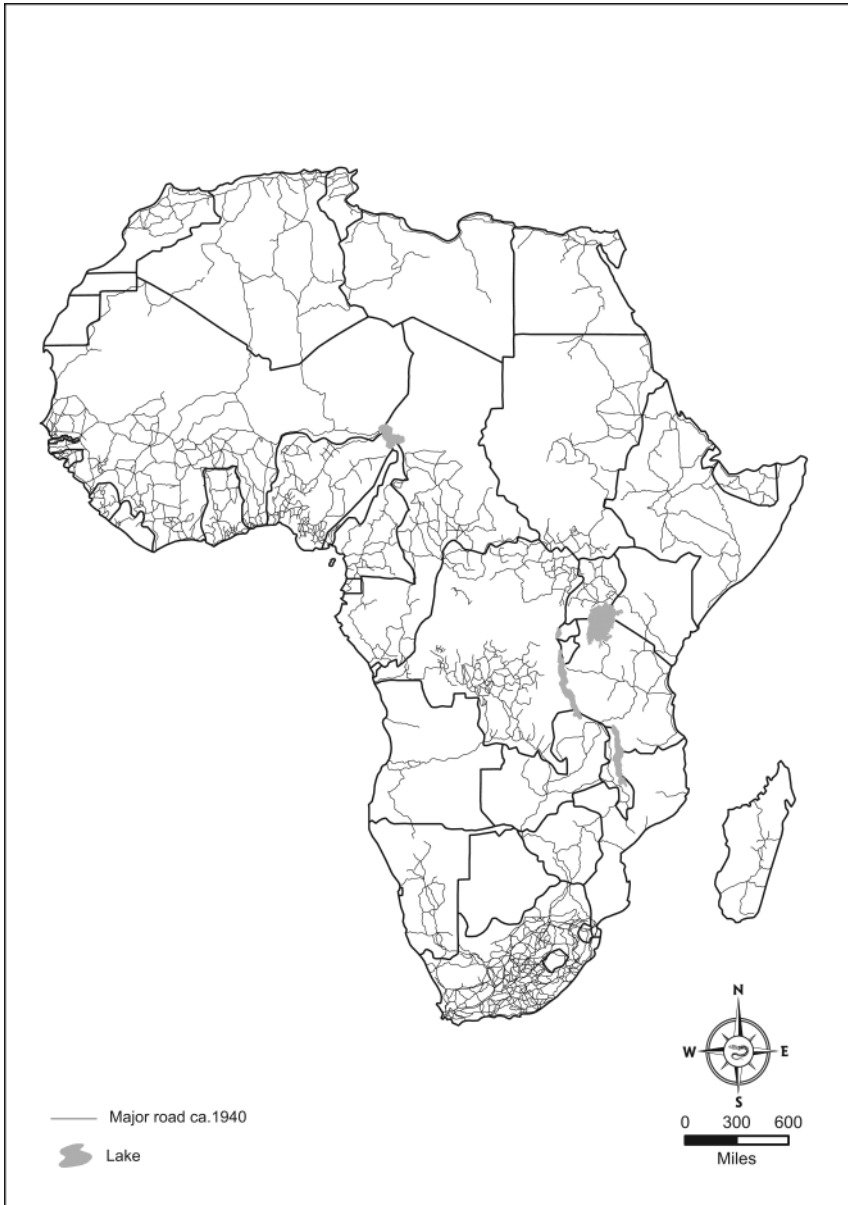


FIGURE I.3. Major African all-season roads, 1940. Map by John Wyatt Greenlee.

and greater number of motor vehicles (which contrasted with the more limited purview of rail and river transport), as well as its conceptual comprehensiveness.

Roads and motor vehicles did not exclude other forms of transport. Human portage remained crucial to transporting goods through much of the period.

This, combined with the European usage of trains, airplanes, and steamships, made the colonial transport system particularly heterogeneous.²⁸ However, motor vehicles and roads were more pervasive and penetrating, enabling them to fill colonial space in ways that other infrastructures and transportation modes, limited by finances or environmental barriers, simply could not. Road construction and motorization embodied European intentions to transform African spaces into colonial territories, harness the continent's resources, and modernize societies that Europeans deemed primitive and outside of history.

Despite all the miles of roads constructed and vehicles imported to Africa, European officials described the effects of automotive empire as uneven and often disappointing.²⁹ This differs from maritime, railway, and air empires, which have become shorthand because they realized their goals. The inconsistent effects of automotive empire emerged from an intriguing dynamic between motor vehicles and the roads themselves. African locomotives and railways remained under the control of European states and aligned corporations, but motor vehicles were more widely accessible to private citizens, farmers, small businessmen, and missionaries. Furthermore, as mass production drove down costs, more vehicles appeared on African roads, many of them owned by Africans and other nonwhite residents of the colonies. And while Europeans managed the design and construction of roads, African knowledge and practice lay at the foundation of the road network. Indeed, as Clapperton Chakanetsa Mavhunga argues, in the realm of technology and infrastructure Africans were not "outsiders looking in" but "coauthors of a knowledge store monopolized through imperialistic power."³⁰

Once roads were built, Europeans could not dictate how they were used. A photograph taken in Italian Libya in the 1930s reveals as much. The Italians constructed an east–west road to hug the Mediterranean coastline and connect towns where their power aggregated. However, as the photograph demonstrates, Bedouin shepherds cared little for Italy's colonial schemes and herded their sheep directly across the road, following a north–south path between lowland coastal settlements and upland pasturage, forcing Italian drivers to stop and wait for the sheep to pass. Whereas the Italian photographer framed the photograph to suggest a Bedouin inability to comprehend the civilized rules of the road, the image shows how varied people across the continent—whether as porters, herders, pedestrians, or drivers—used colonial roads to pursue their own ends, worked around them, or simply ignored them (figure I.4).

Automotive empire did affect colonial societies, but rarely in the manner Europeans expected or hoped. Though roads were ubiquitous and motor vehicles plentiful (if never evenly distributed), neither of them was an effective tool of territorial control or political hegemony, leading directly to the "inconsistent,



FIGURE I.4. A flock of livestock crosses the Italian road in Libya, 1937.
Source: *La strada litoranea della Libia* (Verona: Mondadori, 1937), the Wolfsonian–Florida International University, Miami Beach, Florida, the Mitchell Wolfson Jr. Collection, 84.2.427. Photo: Lynton Gardiner.

incomplete, and incoherent” nature of colonial governance.³¹ In part, the failures of automotive empire resulted from too few functioning motor vehicles to advance colonial aims. But colonial schemes also backfired in part because roads limited the field of action as much as they expanded it. The technological capabilities of motor vehicles and the pervasiveness of roads offered the illusion of power more than its effective exercise, and they contributed to the shortcomings and weaknesses of European rule in Africa as a whole. Automotive empire, as both era and form, was thus defined by the attempts of Europeans to fashion African territories and societies to their vision and by the warped, feeble colonies they created.³² Automotive empire produced “lumpy” territories, “places where power coalesces surrounded by those where it does not,” and erratic, capricious colonial rule.³³ Many an official lamented that European influence stopped at the road’s edge and evaporated as soon as a colonial official drove off, while lack of maintenance and the rapid decline of colonial roads into decrepitude highlighted how the presence of a road was not an uncomplicated manifestation of state power.³⁴ Roads and motor vehicles were intrusive and disruptive without being transformational, distilling the spirit of European colonialism in Africa.

Fueling Automotive Empire

The colonial state was a circulatory state. Officials were committed to managing movements—of Africans and Europeans, administrators and workers, goods and resources—to induce fixed settlements and intelligible territories as well as the circulation of ideas and commerce that Europeans believed defined civilization.³⁵ As European officials sought to occupy lands parceled out on maps, they struggled to make sense of African territorial arrangements, particularly when encountering societies that had no obvious strategic center to occupy or leader to mollify or conquer.³⁶ Colonial officials and military officers often had difficulty decoding the politics and territorial practices of precolonial Africa. For the French philosopher Michel Foucault, the political effectiveness of a modern (European) state depended on “organizing circulation, eliminating its dangerous elements, making a division between good and bad circulation, and maximizing the good circulation by diminishing the bad.”³⁷ European officials in Africa filled claimed territories with roads to accomplish varied goals: not only to serve as a territorial skeleton to give the colony physical integrity, but also to provide “connecting tissue” that drew separate spaces into the body of the state, allowing roads to operate as a circulatory system to imbue the colony with the lifeblood of mobility.³⁸ The circulatory state was designed to manage the volatility of mobility and eliminate the contingencies that threatened effective colonial rule.

As an infrastructural project to fill African territories with roads and a technological project to motorize mobility, automotive empire aimed at nothing less than the transformation of African spaces and societies: the deterritorialization of precolonial Africa and its reterritorialization according to European models.³⁹ In the context of what Europeans incorrectly perceived as Africa’s empty spaces and stateless societies, roads *made* colonial states just as much as they were made *by* them.⁴⁰ They did so in myriad ways. Attempts to expand construction and refine roadbuilding processes often displaced planning and construction from local district officials to bureaucrats in African colonial capitals such as Algiers and Dar es Salaam and metropolitan power centers such as Brussels and Rome.⁴¹ But this was not the simple accumulation or exercise of power. Although Europeans declared the age of African exploration and discovery over, roads were often built in the absence of knowledge about lands and peoples, to collapse the space between known nodes of settlement, production, and administration. As a result, European administrators often learned about the peoples and lands under their jurisdiction in the process of tracing roads, recruiting workers, and overseeing construction. Roads demanded colossal amounts of labor, which led colonial officials to design systems of taxation, economic planning, and political

relations around extracting labor (usually forced and unpaid) from colonial subjects under the guise of the common good.⁴² As literal and metaphorical sites where the utopian promises and brutal tactics of European colonialism converged, roads became settings for incipient anticolonial resistance in the interwar decades—women occupied and tore up roads to protest political and economic change in Nigeria in the late 1920s, while Ethiopian soldiers attacked and killed dozens of Italian road laborers in 1936.⁴³ Through a combination of deliberate administrative planning and the unintended outcomes of disconnected decisions, the logics and demands of automotive empire shaped the political, social, and economic operations of the colonial state.

Although automotive empire failed to translate technological and infrastructural development into reliable colonial power, it proved historically significant because it choreographed relations within the colonies, among them, and between colonies and metropolises. As a result, it quickly became clear that to solve the transport problem, Europeans needed far more than automobiles alone.⁴⁴ Instead, they needed the entire system of automobility that sustained them, including “commodities, bodies of knowledge, national projects, laws, techniques, institutions, environments, nodes of capital, sensibilities, and modes of perception.”⁴⁵ This sprawling system defined colonial politics at the height of European imperialism. In colonial Africa, automotive empire brought together cars, trucks, vans, and motorcycles; engineers, technocrats, and administrators in Africa and Europe; the automotive, construction, petrochemical, and rubber industries; academic and ministerial experts in a wide range of fields from physics and chemistry to geography, anthropology, and geology; transport companies and the wide range of colonial agricultural, mineral, and commercial enterprises they served; drivers, pedestrians, chauffeurs, and mechanics; and laborers—tens of millions of them, mostly Indigenous Africans—constructing and maintaining roads across the vast continent.

Roadblocks

Across massive European territories in Africa, automotive use and road construction shifted according to social and environmental contexts and evolving imperial (geo)politics, making each project highly particular. But across time and space, European efforts failed because of repeated and consistent breakdowns in the system of automobility. In the chapters that follow, I show how proponents of automotive empire struggled to bypass three roadblocks that always made cars and roads attenuated tools of colonial rule. The first

roadblock was fuel. Motor vehicles consumed prodigious amounts of gasoline, oil, and grease, and there were no known reservoirs of petroleum in Africa before World War II.⁴⁶ Importing fuel and creating a supply infrastructure frustrated European authorities throughout this era, serving as a brake on automotive empire.

The second roadblock, related to the first, was that of space. The distances between ports and hinterlands, administrative centers and settlements were staggering. Low population density in vast territories meant that roads traversed hundreds of miles through what appeared to be wastelands, with few settlements or existing sites of capitalist production (cash-crop agricultural plantations or mines). Thus, roads often existed only to collapse the space between predefined points of economic or administrative interest, and the promise that they would stimulate roadside economic development rarely bore fruit. A road meant to overcome deserts, savannas, or tropical forests still had to be built and maintained across its entire length. In this context, 350,000-plus miles of roads were a costly burden as much as an instrument of rule.

This leads to the third and most important roadblock: labor. Infrastructures have a way of concealing the labor required to create and maintain them. The deceptively simple, usually unpaved roads built in African colonies are a case in point. In most colonies throughout most of this period, road construction and maintenance were performed by African laborers using hand tools, as European officials pursued labor-intensive forms of development over capital-intensive ones, despite their endless laments about labor shortages.⁴⁷ The initial construction of this network alone required in excess of two billion working days before 1940, and ongoing maintenance absorbed further labor.⁴⁸ Large territories and low population densities made each worker's labor even more valuable, and a day spent working on the road was a day away from farming, mining, hunting, and any number of other occupations upon which Africans' welfare and European development schemes rested.

Europeans could overcome these roadblocks only sporadically and incompletely. They transported fuel across the continent, built roads through vast territories, and conscripted tens of millions of laborers. Their ability to do so was a sign of the strength of the colonial state and the metropolises that operated them. But it was equally the source of their weakness, as they struggled to transform discrete technological and infrastructural successes into reliable routines of governance. Constructing and orchestrating automotive empire was expensive and time-consuming, crowding out other colonial goals in Africa. Meant to be means to economic and political ends, roads and motor vehicles absorbed such attention and resources that they became ends in and of themselves. This combination of strength and weakness, activity and inertia, defined automotive empire's

systemic, all-encompassing effects. Transportation was, indeed, the essence of colonial “civilization” in Africa.

The Imperial Automobile

At the center of the system of automobility rested the automobile itself. Motor vehicles were central to the creation and maintenance of colonial relations in Africa. A photograph taken in Uganda in the mid-1920s shows how Europeans imagined motor vehicles to divide colonizer and colonized both physically and symbolically.⁴⁹ The automobile dominates the center of the frame, drawing the viewer’s attention. The sun reflects off the windshield, slightly obscuring the British driver’s face, while the roofless, cabriolet model simultaneously makes him visible to pedestrians and other drivers. The vehicle provides the driver with a paradoxical mix of anonymity and personality. More than a dozen Ugandan workers stand arrayed behind the vehicle, listening intently as the driver gesticulates toward the road, lecturing about how to properly lay stones for the roadbed.⁵⁰ In this paternalistic framing, the European driver, master of modern technology, leads a flock of African disciples, whose collective labor he directs toward colonial goals. Meanwhile, the materiality of the automobile itself separates the driver from his civilizational pupils. To drive is to lead. This documentation of the colonial divide around the automobile speaks volumes about how Europeans used and imagined motor vehicles in colonial contexts (figure I.5).



FIGURE I.5. A British driver in Uganda, ca. 1924. Source: The National Archives, Kew, United Kingdom, CO 533/309.

The physical proportions, mechanical might, and distinctive aura of modernity of motor vehicles imbued them with material and metaphorical power that made them far more than neutral technological artifacts. Across the world, motor vehicles shaped the perceptions of drivers and nondrivers alike and structured political and social relations.⁵¹ As the photograph demonstrates, this was only heightened by the fraught racial and civilizational hierarchies of African colonies, where colonizers—be they administrators, businessmen, missionaries, or settlers—were often also drivers. Common experiences of driving motor vehicles in colonial contexts effaced national differences among Europeans while erecting technological and civilizational barriers between Europeans and Africans.⁵² The colonial social order shaped by automotive empire connected technology, mobility, and race and differentiated not only Britons from Ugandans but created transnational affinities that separated Europeans from Africans.

Drivers, administrators, engineers, and construction workers made Africa into an automotive empire, but the intimate connections between automobility and empire also rebounded to the metropole, infusing European automotive culture with imperialism.⁵³ European automobilism thus contrasted with its better-studied American counterpart, while calling into question a diffusionist technological model wherein European automotive culture lagged and only reacted to the dominant American variant.⁵⁴ Whereas the American model highlighted individualist aspects of consumer empowerment and drivers' liberty while advancing Fordist mass production and consumption, Europeans more explicitly and unabashedly connected cars and colonialism. Metropolitan advertising and the media, in turn, disseminated the exploits of colonial drivers across the globe, from the Belgian comic-strip character Tintin driving in the Congo (serialized 1930–31) to films like *La Croisière noire* (1926), which documented a dramatic trans-African journey in Citroën vehicles for mass entertainment. While we should not minimize the imperial implications of an American motoring culture suffused with Jeep Cherokees and Indian motorcycles, European car culture drew directly from automotive exploits in Africa, making automotive empire a transnational metropolitan spectacle as much as a model of colonial rule, particularly in the interwar decades.⁵⁵ Further, automotive empire made the European car industry more statist than the American one, as colonial officials and automobile manufacturers such as Citroën, Renault, and Fiat collaborated to solve Africa's colonial transport problem by designing, testing, and deploying colonial cars. In the interwar era, particularly in France and Italy, public and private officials forged a symbiotic colonial-industrial complex that aligned state and industry efforts around motorization. Automotive empire worked to their mutual benefit by advancing colonial projects and increasing industrial profits simultaneously. The formal and informal influences of Africa

on metropolitan car cultures gave European automobilism a distinctly imperial flavor.

The Road Map

Automotive empire draws our attention to less studied, in-between colonial spaces made by roads and automobility. The rural orientation of automotive empire had profound effects on colonial rule. This was particularly the case in nonsettler colonies, where colonial administrators designed and oversaw road construction and motorization projects to attract investment and improve administration through European mobility. Whereas settler regions such as South Africa and the coast of Algeria better approximated European territorial models, the nakedly extractive aims of nonsettler colonies created spatial inequalities.⁵⁶ Roads and automobility were designed to solve the problems of spatial and territorial “lumpiness” but instead only exacerbated them. Roads, like other colonial infrastructures, “brought great spatial differentiation within and among colonies” thanks to the uneven flows and circulations they fostered.⁵⁷ Thus, African hinterlands and colonial frontiers—defined by conceptual rather than physical distance from the metropole—were the target of colonial development projects and shaped both colonial governance and broader imperial goals.⁵⁸

In general, European states pursued automotive empire within separate colonial, national, and imperial frameworks. The burst of colonial roadbuilding and automotive activity has garnered the attention of historians of Africa, who have shuttled between metropolitan and African archives to reveal interlocking environmental, social, and political dynamics within discrete colonies and postcolonial states.⁵⁹ However arbitrary colonial boundaries were, Europeans respected them and treated them as solid, creating a network of roads and motor vehicles in lived spaces. These collided with discrete African social and political systems, making each colony its own distinctive laboratory for automotive empire.⁶⁰ Further, the nationalized frameworks of imperialism, wherein each European power claimed exclusive territorial rights, led European states to act within national-imperial silos.⁶¹ Thus, in most African colonies, roads worsened as they approached borders, and creating intercolonial roads often fell to the initiative of individual drivers and private automotive clubs.⁶² The particularities of environments and politics within each distinct colony and imperial system thus justify a historiographical approach to roads and motorization in Africa limited to specific colonies and empires.

And yet, automotive empire was a transimperial phenomenon in Africa.⁶³ While European powers proclaimed sovereignty over colonial and national

spaces, automotive technologies and road infrastructures inspired conversation and exchange, as ideas, practices, people, and goods flowed across colonial borders.⁶⁴ Imitation, emulation, and hybridization occurred both above the level of the colonial state, in international forums, and below it, where varied road users traveled in blithe disregard of fixed borders and exclusive territorial principles. Thus, automotive empire was pursued within artificially constructed colonial/imperial frameworks but simultaneously fostered transimperial connections.⁶⁵

The following chapters trace how automotive empire reflected European transimperial connections and created new ones. This is not to minimize the agency or historical experiences of Africans who built and used roads on the continent. Rather, I aim to bridge distinct colonial and imperial historiographies to arrive at a wider interpretation of European imperialism, one that is both informed by and complements studies of individual colonies. I explain how technology, infrastructure, and mobility shaped how Europeans acted and thought in an extra-European space and how they shaped Africa and Europe in the process, while simultaneously highlighting the creative, constructive role of Africans.⁶⁶ My approach is transimperial in conceptualization and continental in scope but by no means encyclopedic, offering but one of many possible stories about cars, roads, and colonialism in Africa.

Transimperial interactions in Africa and Europe also forged transcontinental relations across the Mediterranean. These interactions reframe the geopolitical dynamics of empire, particularly by decentering Great Britain. The British empire has proven a sticking point in transimperial theorizations, both in Africa and globally.⁶⁷ Because the “sun never set” on the British empire, British attention was diffused across the globe, with a particular focus on India and white dominions such as Canada and Australia. The British administered large territories in Africa and certainly used motor vehicles and developed roads. But the British proved far more skeptical of automotive empire as a model, and their projects in Africa remained more conservative and limited than those of their European peers.

Instead, I highlight the formative role of the French and the Italians in shaping automotive empire. The French displayed the longest-lasting commitment to road construction and motorization. The Italians developed and implemented the most comprehensive programs in Libya and East Africa in a short period from 1934 to 1940. The interwar height of automotive empire had a “Latin” tinge, a family resemblance theorized and remarked upon by contemporary commentators. In interwar Latin Africa, shared colonial ideologies, labor practices, and self-proclaimed Africanist vocations fueled the development of automotive empire, particularly by the French and Italians and, to a lesser extent, the Belgians and Portuguese. Thus, while making note of Belgian and Portuguese developments,

I focus on the French and Italian empires to reveal their dynamic, destructive projects and to draw a contrast with the British. And yet, as we will see, even in their suspicion of automobiles and roads, British officials engaged with automotive empire just as much—albeit more reactively and defensively—than their colonial associates.

To connect developments ranging from the local to the continental, I deliberately work across spatial scales. I examine dynamics within *colonies* (German East Africa, Italian Libya) and colonial *federations* (French Equatorial Africa), explore *intercolonial* connections within one empire (between the British territories of Nyasaland, Tanganyika, and Northern Rhodesia) and cultures and practices specific to one *empire* (the French culture of automotive spectacle), and trace *interimperial* colonial relations (between Italian East Africa and French Somaliland). In reading across these analytical and spatial scales, I identify a *trans-imperial* European project of automotive empire, albeit one that was pursued for different reasons and in distinct ways in various colonies and empires. To map these dynamics, I treat Africa at a *continental* scale, eschewing the usual divide between North African and sub-Saharan African history. Africa itself is “historically constituted and contingent,” and the divide of the two Africas is an arbitrary one that has erected a continental “color line” that reproduces precolonial and colonial prejudices.⁶⁸ In their pursuit of automotive empire, European officials paid little attention to the geographic distinction, and the chapters of this book range widely across African regions to trace these officials’ continental projects. Peeling away at these spatial layers reveals the multiple identities and fields of action inhabited by colonial officials, while also showing why the actual use of roads and motor vehicles could prove so vexing. Road infrastructure and automotive technology may have been deployed within colonial territorial frameworks, but their networked logic and scientific development led officials to think continentally and across empires.

Further, I also eschew, to some extent, the Europe-Africa divide across the Mediterranean to explore the construction of Europeaness in Africa. As Alison Frank Johnson writes, “large parts of European history are not European at all.”⁶⁹ Engagement with lands and peoples in African colonies inspired particularly conscious reflections on what it meant to be European. Varied European actors in the public and private sectors grappled with common questions of mobility, development, technology, and space. Imperial hierarchies of race and civilization, attitudes toward technology and infrastructure, and practices of mobility spurred cooperation and convergence and often led colonial actors to self-identify as European, not French, British, or Italian.⁷⁰ Automotive empire demonstrates how European empires operated as “interactive entities” linked by shared assumptions and aspirations.⁷¹

Europeans often thought continentally, but they acted locally. Although trans-imperial dynamics and connections defined automotive empire and constituted a shared European “identity space,” colonial territories remained the “decision space” in Africa.⁷² European states documented automotive empire in nationally organized colonial archives, and the car manufacturers, transport businesses, and construction companies that operated in the colonies followed suit. These archives contain copious documentation of automotive empire, but much of it is disconnected and sporadic. Most of the activities associated with automotive empire went unrecorded. Labor recruitment and road construction were organized and overseen by local officials, often with the help of African intermediaries, and remained largely undocumented.⁷³ Meanwhile, the private purchase and use of automobiles only entered the archival record as aggregate data (such as the number of imports or licenses) or when they came to the attention of the colonial state in court cases, petitions, and the like. European colonial archives thus present a limited, slanted perspective, but one that reveals the assumptions and obsessions that shaped colonial rule. While we cannot take colonial assertions at face value and must not minimize the violence and brutality of colonialism, European records of automotive empire both produced and responded to the patterns of thought and action that yielded colonial “common sense.” They allow us to understand what Europeans thought they were doing in Africa.⁷⁴

Thus, to make sense of the paradox at the core of automotive empire—a trans-imperial form enacted in colonial frameworks—the chapters here are organized along colonial and national-imperial lines. This organization stresses the environmental, political, social, and cultural specificities of each colony or empire and the local solutions developed to address envirotechnical problems through a mixture of European and African knowledge, labor, and use. Each chapter studies specific projects and obsessions that emerge from the fragmentary, nationally organized archives—the French focus on roads and the civilizing mission, the British leeriness of automobiles as competitors to railways, the Italian obsession with Roman roads—to draw distinctions among various colonies and empires. But while I mine European colonial archives, I also read across them, using the methodological tools and transnational implications of the history of technology, environmental history, and mobility studies to reveal the intercolonial, trans-imperial, and continental connections that defined automotive empire.

This book is organized temporally and thematically in two parts of four chapters each. Part I, “Experiments and Spectacles,” examines the interdependent development of colonial states, road construction programs, and automotive technologies in Africa from the 1890s through the 1920s. Together, roads and motor vehicles shaped the nature of European colonial rule from its very inception. With a particular focus on the innovative role of French administrators and

industrialists, these chapters demonstrate how the projects of automotive empire emerged through exchanges of personnel, expertise, and technology between and among African colonies and European metropolises. Further, part I shows how the European automotive industry and metropolitan motoring cultures were indelibly marked by these colonial developments.

Part II, “Models and Programs,” homes in on the interwar decades to show how post–World War I imperatives to guarantee European prosperity and security by rendering African colonies productive and governable led colonial officials to design comprehensive programs to manage the “transport problem.” These chapters explore distinct British, French, and Italian models of automotive empire in the 1920s and 1930s, before studying how Fascist Italy’s projects in East Africa represented the apotheosis—and nadir—of automotive empire. While colonial officials would continue to build roads in Africa after World War II, the ambition, hubris, and optimism that defined the interwar heyday disappeared in the wake of the failure of interwar programs to deliver desired political and economic results. As both an era and form of European colonial rule, automotive empire ended with the spectacular collapse of Italian East Africa in 1941.

Part I

**EXPERIMENTS
AND SPECTACLES,
1890s–1920s**

ROADS BEFORE CARS IN FRENCH MADAGASCAR

In September 1914, General Joseph Gallieni requisitioned Parisian taxis to deliver soldiers to the front by twos and threes to halt the German advance toward the French capital. The improvised “Taxis of the Marne” defense cemented his legend, but his faith in the power of automobiles to serve France had formed earlier, in the colonies, when he was governor-general of Madagascar (1896–1905). In 1899, Gallieni complained of the difficulties he encountered in Madagascar, an island larger than metropolitan France. It took at least forty-five days to travel seven hundred miles from the capital of Antananarivo to the southern port of Fort-Dauphin (Malagasy: Tôlanaro) by land.¹ The absence of roads and telegraph lines on the “Grande Île” made it nearly impossible to quell disorder and develop an efficient administration as part of his efforts “to Frenchify” (*franciser*) the island. “The Madagascar vehicle which I am momentarily steering,” he confided, “is rather stubborn and complicated and its driver can only appreciate advice intended to point out obstacles hurled upon his path.”²

The unsure driver on a hazardous road was more than an evocative metaphor. It described the shoddy state of the colony’s infrastructure and the technological inaptitude of the vehicles needed to govern the territory effectively. Gallieni’s actions as governor indicate that “Frenchifying” Madagascar extended well beyond rooting out English missionary activity or suppressing Malagasy culture to encompass a concerted project to make the island’s *spaces* French. Gallieni and his successor, Victor Augagneur (served 1905–1910), developed a massive public works program to construct the island’s transport network. Although this program included investments in railroads and canals, it was, at its core, a roadworks

project. Indeed, Madagascar's director of public works confidently proclaimed that "the existence of roads in Madagascar is contemporaneous with the French occupation." The pretensions of the colonizer are clear: modern French roads had nothing in common with Malagasy trails beaten by foot traffic, which lacked evidence of "any improvement due to the hand of man."³

Such hubris defined European colonialism in Africa, but between 1896 and 1910, solving Madagascar's transport problem by replacing Malagasy trails with French roads anchored the program to Frenchify the island. French officials demanded the wholesale transformation of Madagascar from seemingly shapeless space into a French territory organized by modern infrastructure. Gallieni's project to Frenchify Madagascar with roads marks the first experiment in the transimperial campaign to Europeanize Africa through automotive empire.

In Madagascar the French possessed a large but coherent and geographically delimited territory, making the island an ideal laboratory to test the ability of roads to "fill" colonial space.⁴ The successes and failures of the French road regime there would shape automotive empire in Africa in the following decades. Gallieni and Augagneur implanted models of infrastructural development and colonial administration that had developed slowly over the course of the nineteenth century in metropolitan France. But they did so in fifteen short years while suppressing an anti-French insurrection on an island populated almost entirely by colonial subjects, not French citizens.⁵ In this accelerated, oppressive framework, they proceeded with blithe disregard for existing Malagasy mobilities and infrastructures. Upon French annexation of the island, transport in the dominant Merina Kingdom depended on some fifty to sixty thousand enslaved porters.⁶ The French deemed the portage regime primitive for both technological and humanitarian reasons and built roads to replace porter trails but often, as the historian Tasha Rijke-Epstein notes of colonial Madagascar, "simply overlaid new technological things . . . onto an existing system" of mobility.⁷ They designed the roads to move people, goods, and information faster and farther, first using wheeled carts, then supplemented by motor vehicles after 1900. But because roads "rupture" space, the French also used them to uproot precolonial political and social structures, "Frenchifying" the island as colonial territory.⁸

Insofar as the French colonial state built infrastructure in Madagascar between 1896 and 1910, infrastructure simultaneously built the colonial state.⁹ Historians have noted how railways shaped the political and social relations of Madagascar, but with only two short rail lines totaling 168 miles by 1910, their impact lay primarily in the interwar decades.¹⁰ In the first fifteen years of French rule, as officials struggled to finance and build rail lines, 1,150 miles of roads filled the infrastructural gap and the Malagasy map (figure 1.1).

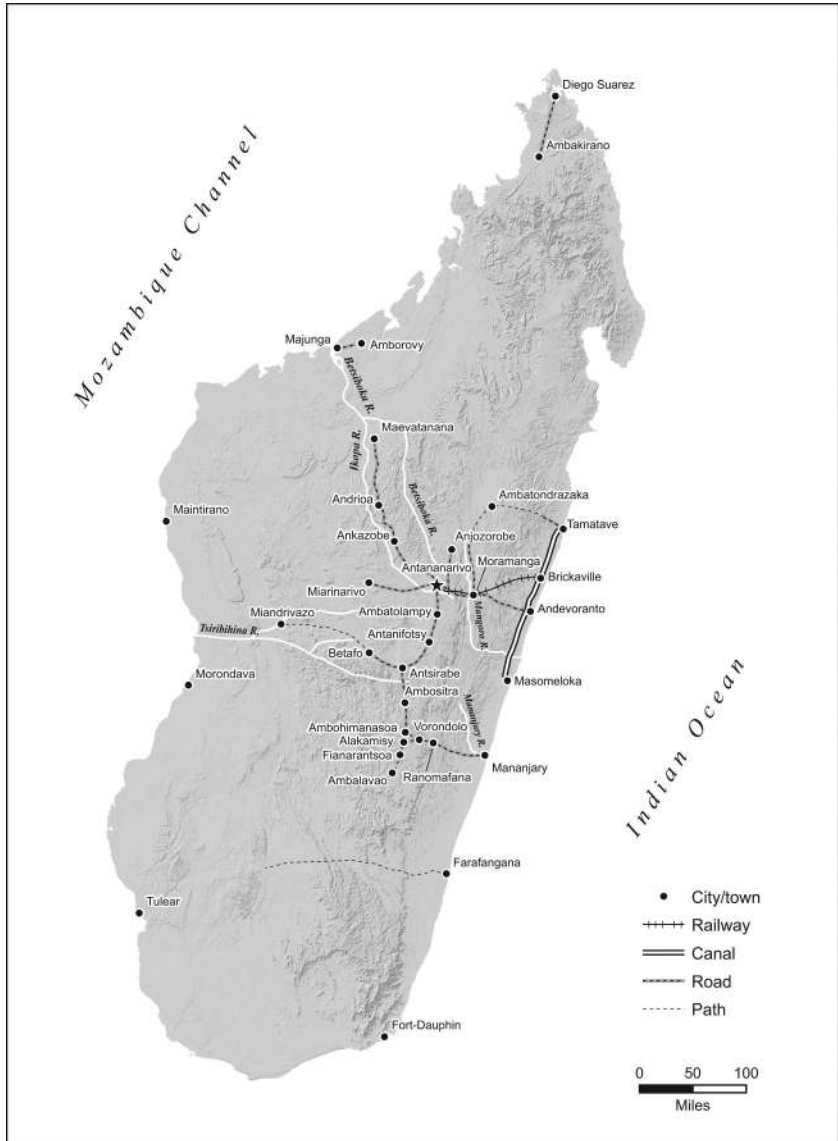


FIGURE 1.1. Madagascar, 1910. Map by Di Shi.

Gallieni's roads bridged the artificial divide between the early colonial stages of military conquest, so-called pacification, the establishment of the colonial state, and economic development programs.¹¹ They shaped the repressive politics of French Madagascar by serving as both the means to combat anticolonial guerrillas in the late nineteenth century and the material outcome of this

process. Through road construction, the French sought to bring all corners of the island within reach of the administration in Antananarivo, while also displacing precolonial political geography and forms of movement. Roads further shaped the politics of Madagascar as an early site where the French defined the duties of Malagasy subjects to the French colonial state. Because the French claimed that roads would modernize the island and improve everyday life, their Malagasy subjects thus owed the state their labor and taxes to construct and maintain the infrastructure.

Roads were therefore central to the conceptualization and implementation of the French project of *mise en valeur* (literally, “putting into value”). The project of *mise en valeur* is most often associated with interwar projects to develop the French empire, but colonial officials in Madagascar deployed the term regularly before World War I. The administration believed that roads would instigate the economic development of the island, particularly aimed at the export of agricultural produce and mineral resources, by improving the speed and reliability of transport and reducing its cost. And finally, the centrality of roads to *mise en valeur* and colonial politics made them the material manifestation of France’s self-proclaimed civilizing mission to spread its achievements across the globe.¹² French roads, they believed, marked a definitive separation between the precolonial and colonial eras in Madagascar.

But roads also produced unforeseen outcomes, because while the French constructed the network over the course of fifteen years, the political and technological grounds shifted beneath their feet. Although they appeared universal, roads planned to ensure military supply lines did not naturally morph into the infrastructure of peacetime *mise en valeur*. When automotive technology improved in the first years of the twentieth century, the colonial administration attempted to graft a motor vehicle service onto roads designed for carts pulled by humans and animals, with mixed results. And once roads were constructed, the French failed to dedicate the resources necessary to perform maintenance in the tropics, where roads deteriorated rapidly. In short, roads organized politics, economics, and society in early colonial Madagascar and were central to French claims to modernity and civilization. They shaped both the coercive nature of colonial rule and the shortcomings of French development.

Madagascar and the New Age of Empire

The French empire followed shifting global tides over the course of the nineteenth century, when empires transformed from informal relationships to formal administrations and from nodal enclaves to expansive territories.¹³ Outside

its bloody and protracted engagement in Algeria, France leaned on soft power and influence, garnered through prestige, over military conquest and territorial claims for most of the nineteenth century. As the historian David Todd argues, nineteenth-century France was a “velvet empire” that rose to the ranks of “the world’s second imperial power” with relatively few formal colonies.¹⁴ The informal model ebbed in the 1860s and 1870s, when Emperor Napoleon III’s adventurism led to embarrassment in Mexico, a stunning loss in the Franco-Prussian War (1870–71), and the collapse of his Second Empire in 1870. The Third Republic (1870–1940) took its place, but the rise of Germany blocked French ambitions on the continent. The French looked overseas for prestige, and the Third Republic projected French power globally in pursuit of economic, strategic, and cultural goals. By the turn of the century, the French had claimed colonies and established protectorates across wide swaths of West and Equatorial Africa, Tunisia, Indochina, and Madagascar.¹⁵

The evolving French engagement with Madagascar, in particular, marks the transition from informal to formal empire and the quest for territorial control. Madagascar cuts a paradoxical profile. On the one hand, it is quite isolated—separated from the African mainland by 250 miles across the Mozambique Channel—and stretches 1,000 miles north to south as the world’s fourth-largest island. On the other hand, Madagascar had been central to Indian Ocean trade networks for centuries.¹⁶ Its location off the east coast of Africa made it a key site for Islamic traders (from around 1,000 CE) and later Portuguese (sixteenth century) and British and French (seventeenth century) ones. As in most of Africa and much of the Indian Ocean world before the late nineteenth century, European influence in Madagascar rarely extended beyond coastal ports. Various sovereigns claimed regional control on the island before the Merina Kingdom of the central highlands zone, known as Imerina, consolidated power and conquered approximately two-thirds of the island under King Radama I (r. 1810–1828). Whereas Radama I opened diplomatic relations with the British in 1817 and received missionaries in exchange for British technology and military training, his daughter, Queen Ranaivalona I (r. 1828–1861), barred Europeans from the upland monarchy beginning in 1835.¹⁷ For the remainder of the century, Merina rulers erected barriers to the outside world to consolidate and maintain power in the central highlands. The calculated neglect of transport and communications infrastructure was central to this program.¹⁸

As the French Third Republic sought global prestige through colonial territory, Madagascar held great geopolitical and economic allure as an entrepôt between Europe and Asia, albeit one that became less strategically vital following the opening of the Suez Canal in 1869. French settlers in nearby Réunion agitated for greater French influence beginning in the 1870s and convinced French

officials that Madagascar possessed hidden mineral wealth and would support the cultivation of cash crops (particularly sugarcane). The 1880s saw French citizens and officials provoke dubious conflicts to advance claims to the island. In 1883–84 the French asserted control over the northwestern portion of the island and occupied the ports of Tamatave (Toamasina), Majunga (Mahajanga), and Diego Suarez (Antsiranana). To the frustration of the French, occupying the ports disrupted external trade but posed no existential threat to the isolationist Merina. The stalemate exposed French troops to disease, while the Merina prime minister Rainilaiarivony wearied of the prolonged conflict and negotiated peace in 1885. The agreement allowed the French to occupy Diego Suarez, levy a ten-million-franc indemnity, and install a French resident-general in Antananarivo to conduct foreign relations for the Merina. Although the agreement carefully avoided the term, the Merina Kingdom, and thus most of Madagascar, became a *de facto* French protectorate.¹⁹

In the wake of the 1885 negotiations, Madagascar emerged as a pawn in Franco-British relations, culminating in Great Britain's 1890 recognition of France's protectorate over the island in exchange for France's acceptance of the British protectorate over Zanzibar.²⁰ Prime Minister Rainilaiarivony refused to acknowledge the formal declaration of the French protectorate, and war between the Merina Kingdom and France broke out in late 1894. The French National Assembly approved sixty-five million francs to support a military expedition in November, and in December General Jacques Duchesne began a campaign with fifteen thousand troops (including thirty-eight hundred West African soldiers), seven thousand porters from Algeria and Djibouti, five thousand Lefebvre wagons, and seven thousand mules.²¹ What followed, according to the historian Pierre Vérin, was "more an earthworks campaign than a military campaign," as the French cleared roads to allow the mule-pulled wagons to advance on the upland Merina capital.²² The march took nearly ten months. The French suffered only twenty-five dead and one hundred wounded in battle, but sixty-seven hundred died from malaria and dysentery.²³ The French occupied Antananarivo on October 1, 1895, and brutally suppressed ongoing anticolonial actions in the fall. The end of the rainy season in March 1896 reignited revolts, prompting the French National Assembly to vote for full annexation in August. This marked the transformation of Madagascar from protectorate to colony, and metropolitan authorities named Gallieni resident-general in September 1896 (he would become governor-general in 1897). Upon arrival, Gallieni sought to crush the uprising. Show trials preceded the execution of prominent alleged rebel leaders, including the interior minister and Prince Ratsimamanga, the uncle of the queen. The French later expelled Queen Ranaivalona III, first to Réunion, later to Algiers, in February 1897.²⁴

The nature of French warfare and then colonial rule emerged from the application of universalist French principles to the environmental and social contexts of Madagascar. Alice Conklin has shown how the Third Republic possessed deep faith in the power of technology to deliver progress by mastering nature. Increasingly, technology and infrastructure emerged as material manifestations of France's civilizing mission overseas.²⁵ Hugues Berthier, who served as an interpreter during the conquest of Madagascar and later held a variety of administrative positions there, argued that "the development of a new land is dependent on its economic equipment" through infrastructure.²⁶ Madagascar threw many obstacles in the path of European technology, however. Although the island is only 350 miles across at its widest point, and the distance from the eastern coast to Antananarivo is approximately 100 miles as the crow flies, the French had to cross no fewer than five zones of terrain to reach the capital from the east: the sandy coastal band at sea level, the Betsimisiraka mountains, the Mangoro plain, the Angavo massif, and the Imerina plateau.²⁷ Monsoons dictated the climate of the western half of the island, marked by distinct rainy and dry seasons, while the eastern half was reliably hot and humid. Thick forests separated the coasts from the rocky central plateau.²⁸ The combination of climate and biome rendered Madagascar distinctly "tropical" in the French imagination. Europeans imagined that the tropics endangered their bodies and minds, making them the "white man's grave." Simultaneously, they believed that the climate of the tropics was well suited to agriculture, and that European structure and expertise would harness their fecundity.²⁹

In the last years of the nineteenth century, as the French pursued military conquest and colonial development campaigns in Madagascar, officials associated supposed Malagasy shortcomings with hostile landscapes. Gallieni reflected, "There are decidedly too many mountains in Madagascar," which "present rough obstacles for the construction of our roads; and roads, good roads, we very much need."³⁰ The lack of roads struck French observers, upon their arrival, as both the cause and symbol of Madagascar's "primitive state," isolating the various regions of the island from one another. Officials repeatedly lamented how narrow foot trails beaten down by repeated use followed no sound engineering principles. Malagasy travelers, French officials argued, pursued direct lines between locations with no concern for slopes and no regard for erosion. The result was steep and vertiginous trails that endangered human life and precious cargo, degraded rapidly during the rainy season, and often left French travelers disoriented and uncertain of their bearing.³¹ Documentary photographs of a Malagasy trail on the eastern half of the island illustrate French complaints about the island's transport infrastructure and show how photography served as a tool of empire that presented putatively objective knowledge while enacting colonial power relations.³²



FIGURE 1.2. Malagasy path from Analamazaotra to Moramanga, ca. 1900. Source: Archives Nationales d’Outre-Mer, Aix-en-Provence, France, Fonds Gallieni, 44PA186/34.

One photograph (figure 1.2) shows an exposed path condemned by its lack of European engineering principles. It zigzags across the frame, and perilous slopes make any misstep potentially fatal.

Another path (figure 1.3) presents a claustrophobic space in which tropical flora envelops the Malagasy traveler. In it, dark jungles and dark people are rendered primitive by a lack of reliable and speedy movement. Such photographs taken by colonial officials to document their actions in Madagascar provided evidence of the need for French intervention and would later serve to verify the transformations wrought by French initiative.³³

Within these environmental frameworks, infrastructure and technologies of mobility separated colonizer and colonized, creating and reinforcing distinctions of race and culture.³⁴ The social and economic structure of the Merina Kingdom had depended on a complex system of domestic slavery and *fanompoana*, or compulsory, unpaid labor obligations to the state, upon which the Merina economy was “almost entirely dependent” by the late nineteenth century.³⁵ A significant amount of forced labor, both public and private, was dedicated to transport, as the terrestrial movement of supplies and information relied entirely on labor provided by human porters, the *borizano*.³⁶ In 1896, it took ten to twelve days to deliver mail two hundred miles from the eastern port of Tamatave to



FIGURE 1.3. Forest path from Didy to Ambatondrazaka, late 1890s. Source: Archives Nationales d’Outre-Mer, Aix-en-Provence, France, Fonds Gallieni, 44PA151/28.

Antananarivo, a legacy of the Merina strategy to hamper connections to the outside world.³⁷ French officials traveled from the port to the capital by means of *filanjana*, a sedan chair carried by four men. This grueling labor required teams of eight to ten men to cycle through every thirty seconds to avoid exhaustion. *Filanjana* covered a maximum of twenty-five to thirty miles in a day. Supplies, similarly, depended on human labor power, with each porter carrying up to

sixty-five pounds.³⁸ While porters had previously sufficed to supply Antananarivo, the stationing of French troops there after 1895 strained the precolonial transport regime.³⁹

But the French problems with portage extended beyond lacking speed and capacity. One drawback was its association with slavery, but its affective experience provoked French ire as well. Gallieni's right-hand man, Hubert Lyautey, had proven his worth in Indochina and joined Gallieni in Madagascar in 1897. Upon debarking in Tamatave in March 1897, he found telegrams from Gallieni ordering him to proceed directly to the capital. He departed the port carried in a *filanjana* and fulminated, "What a road! A bad scrap *filanjana* from Tamatave, bad porters, a bad 'boy,' a bad cook, potholes, rivers that left one utterly drenched, lost packages, and the rain, the rain, the rain." His porters stopped for the day at 8:00 p.m., leaving a "half-drenched, half-fried" Lyautey to recover his wits alone.⁴⁰

Lyautey's frustrations reveal that transport in the colonial context was about far more than getting from one location to another. Travel by *filanjana* assailed his body and nerves, exposed him to the elements of the tropics, and left him dependent on Malagasy laborers, in whose physical presence he suffered for hours. Lyautey's complaints imply that the speed and physical experience of mobility differentiated Frenchmen from Malagasy. Dependence on *filanjana* and *borizano* left the uncomfortable impression of "going native" amid primitive peoples and landscapes in the physical and moral hazards of the tropics. In Lyautey's framing, the sanity of the individual Frenchman and the realization of the colonial project more generally required that the French shed their dependence on porters and shield themselves from the tropical environment. As Rudyard Kipling had implied, transportation and civilization were inseparable.

Roads from Conquest to "Pacification"

Upon the opening of hostilities in late 1894, the French thus had both material/strategic and ideological motivations to develop road transport. The initial construction of roads in Madagascar was a military and political project, not an economic one. The French expeditionary corps advanced slowly from the northwestern port of Majunga, clearing a "makeshift road" (*route de fortune*) from Maevatanana, where the Ikopa River was no longer navigable, to the central plateau. Because their mission was to defeat the Merina, the troops did not lay stones for the roadbed, nor did engineers survey the road to combat erosion.⁴¹ The French believed that mobility would guarantee their rapid victory over the Merina, and the success of Lefebvre wagons in colonial campaigns in French West Africa led them to plan the expedition around the wheeled carts.

But their obsession with transforming narrow porter trails into roads for Lefebvre wagons slowed their advance and caused immense suffering for the French troops. The French learned that the monsoon climate and mountainous terrain of western Madagascar differed mightily from the West African savanna, and steep inclines and tight turns hindered the wagons' effectiveness. In the initial months of the campaign in early 1895, clearing roads required the French troops to bivouac in the lowlands. Exposure to heavy rains and the immobility of the French in this period left the army corps "in a sorry state." The construction of the road from Maevatanana to Antananarivo was a "gigantic enterprise" that "cost so many human lives" to disease.⁴² Rank-and-file troops recognized the folly of slowing their advance to build roads for carts, which left them stranded in regions that offered little shade or opportunity to live off the land. French soldiers derisively referred to the hated Lefebvre wagons as, simply, "fever wagons."⁴³ The technological defects of the carts in the mountainous terrain were terminal. They proved too heavy, their carriage too low to the ground, and their lack of brakes too dangerous for general use.⁴⁴ Frustrated French officers abandoned the wagons along the paths and ordered their men to advance on foot. The obsession with mobility and the perception of Malagasy infrastructures as hopelessly primitive shaped French strategy, leading to lost time and significant casualties in 1895. Rather than working to understand how the Malagasy moved across the island, the French dismissed them and suffered for it.

When the Merina surrendered in October 1895, the French ruled over an island that possessed a patchwork of porter trails hastily converted to French mule paths. The supply line remained expensive and strained in the following years, imperiling claims to sovereignty. For French officials, the lack of roads created a general "malaise" that required their immediate attention, and even the path on the eastern side of the island remained "a poor trail which only the *borizano* could use."⁴⁵ Their initial goal, therefore, was to retrofit porter trails to make them usable by pack mules, a task undertaken while the island was in "full insurrection."⁴⁶ Projects focused particularly on laying rock bed in the forests, "where it rains nearly constantly." This worked for a short time, but French officials believed that it would be necessary to replace mules and porters with a "less barbarous, less costly" form of transport, as in 1896 it cost an unsustainable 1,300 francs to transport one ton of goods from Tamatave to the capital.⁴⁷ Beginning in late 1897, the French administration focused on creating a network of roads that would support wheeled traffic, effecting a rapid evolution from Malagasy porter trails to transitional mule paths to French roads.

When Gallieni arrived in Madagascar in the fall of 1896, France had just annexed the island, formalizing control over all aspects of Malagasy affairs. Meanwhile, large areas in the western and southern portions of the island, long

resistant to the centralizing authority of the Merina, remained in full revolt. Shortly after his arrival, Gallieni described the “truly extraordinary anarchy” of the island, the product of ongoing concerns about anticolonial warfare and his deep discomfort with what he perceived as the island’s spatial disorder.⁴⁸ Gallieni was no stranger to colonial violence, having over a decade of experience in varied colonial theaters, engaging in the violent work of conquest and suppression, described obliquely as “pacification.” In Tonkin (modern Vietnam), along with Hubert Lyautey, he developed the *tache d’huile* (oil stain) method that would define colonial counterinsurgency operations for decades thereafter. Gallieni and Lyautey replaced mobile military columns with strategically situated posts that would entrench French rule in the landscape and from which colonial authority would emanate, like a drop of oil slowly spreading to become a stain.⁴⁹ Upon taking control of Antananarivo, Gallieni laid the first line of posts in a ten-mile radius around the capital, and within that radius, the French focused on “organizing the country” by planting rice and rebuilding villages in areas that had been devastated by the scorched-earth French conquest and subsequent anticolonial insurgency.⁵⁰ The French then extended this cordon brutally and methodically and controlled most of the central plateau by the end of 1896.

The *tache d’huile* method was a strategy designed to root French power in Malagasy space. Doing so required linking French “oil spots” with usable infrastructure. Unlike in Indochina, where the strategy had developed in response to a dense population and navigable waterways, Madagascar’s administration would depend on land transport.⁵¹ Hugues Berthier would later write that in this early stage of colonial rule “the establishment of a network of paths was thus indispensable, first to facilitate the pacification of the country, then to organize it.”⁵² But as the application of the *tache d’huile* strategy to Madagascar shows, so-called pacification and organization/administration were simultaneous and overlapping processes, linked by the development of roads. Gallieni wrote to the minister of colonies in late 1897 that with “the progress of pacification opening new regions to commerce each day,” it would be crucial “to facilitate communications between the most important population centers of the interior and to replace porter trains with roads” for wheeled traffic.⁵³ In the spring of 1898, he elaborated that any delay in the development of roads would harm French aims. The colonial administration must not “dispirit *colons*, merchants, and industrialists” who would seek out opportunities in other colonies if the French administration did not develop “rapid and economic means of communication permitting them to introduce to the island the tools indispensable” to economic development. Without serious investment by metropolitan authorities to construct transport infrastructure, all economic development projects would fail, and French sacrifices to conquer the island would be wasted.⁵⁴

Roads did not depend on geographic and ethnographic knowledge of the Grande Île; they produced it. Berthier noted that the imperatives of suppressing resistance and developing the colony were so urgent in the late 1890s that the French could not perform “regular studies” preliminary to construction.⁵⁵ In 1897, a public works inspector observed that difficulties building early roads were “nothing surprising when we think that these countries were unknown at the beginning of the work” and that many regions remained unexplored and uncontrolled by the French.⁵⁶ Roadbuilding itself stimulated exploration and survey. In August 1897, Gallieni dispatched public works officials and engineers in the elite Ponts et Chaussées corps to plan a road from Antananarivo to Moromanga, halfway to the eastern port of Tamatave. A small staff of European aides and an interpreter accompanied the survey, as well as a crew of forty Malagasy in open landscape and one hundred in forested areas to serve as porters for the survey members’ baggage, equipment, and supplies, as well as to provisionally clear rocks and vegetation from the path.⁵⁷ While traveling together, they simultaneously defined colonial hierarchies of rational French knowledge and visionary planning and the brute labor demanded of Malagasy subjects. The French survey to civilize space with roads that would support wheeled traffic depended on Malagasy porters, an irony that surely did not escape either colonizer or colonized.

Roads of “Pacification,” Roads of Development

In recognition of this paradox, the French worked quickly to displace Malagasy ways of moving through the landscape and to create governable French territory in the last years of the nineteenth century. Roads became the central axis of both so-called pacification and development in Gallieni’s *tache d’huile* program. As the French slowly extended control across the island, the construction sites were, paradoxically, sites of immobility that concentrated French troops and administrators and exposed them to anticolonial forces. In response, the French installed fortified posts along the road for security. Such fortifications projected colonial power beyond towns and villages, serving as frontier outposts in the *tache d’huile* framework.⁵⁸ French power ran along these roads, and their security architecture dominated the landscape. An 1897 photograph depicts the effects of the French construction campaign along the Eastern Road (Route de l’Est) while attempting to quash the insurrection (figure 1.4). Situated between Antananarivo and Tamatave, the post at Ambatonvahy straddles the road on either side, with windows positioned to allow the French to survey the surrounding landscape. Meanwhile, all traffic, whether French or Malagasy, channels through this outpost of French power, where it falls under the surveillance and toll system



FIGURE 1.4. Post at Ambatonvahy, 1897. Source: Archives Nationales d'Outre-Mer, Aix-en-Provence, France, Fonds Gallieni, 44PA121/36.

of the administration. The road/post combination restructured space and monitored mobility to advance the French colonial project.

As the French extended roads and built outposts, development plans grew out of the infrastructures of suppression. Barracks quickly followed military posts, supply trains of mules and Lefebvre wagons circulated between towns and fortifications along the roadway, and the French planted crops to feed soldiers and administrators along the new axes of colonial power. Whereas the initial roadworks undertaken during the conquest could not await scientific surveys, Gallieni's desire to shift to peacetime development led him to mandate technical surveys. Civilized movement required safe and reliable infrastructure, and Gallieni's administration set minimum standards to differentiate steep, winding porter trails from modern French roads. Proper roads would be a minimum of five meters wide, laid with stone roadbed for at least three meters of width, with maximum slopes of 8 percent and minimum curves of ten meters' radius, the latter two specifications meant to prevent wheeled traffic from careening off the road.⁵⁹ Technical standards were a self-conscious manifestation of French civilization, and their application to the varied terrain of Madagascar was itself a claim to mastery of the island. The French sought to build lasting infrastructure,

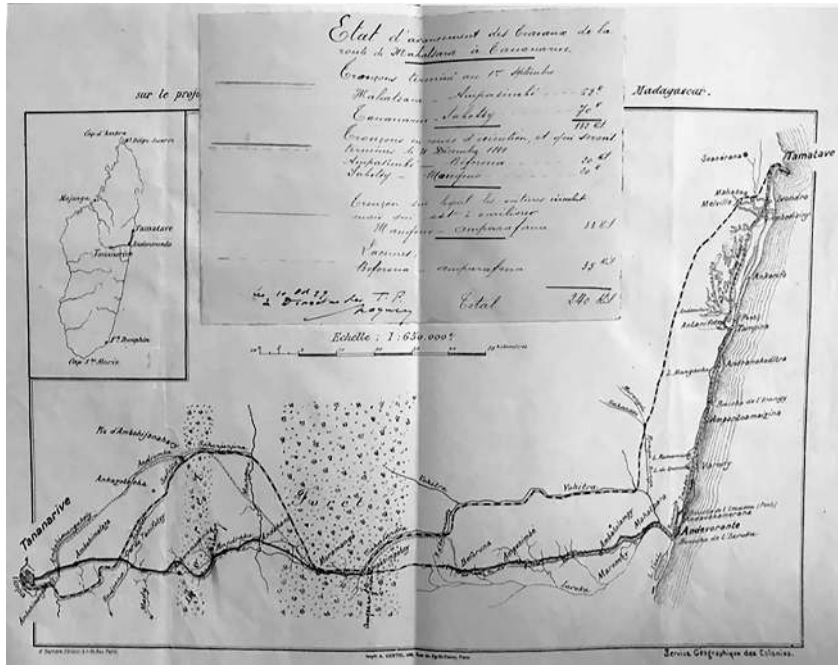


FIGURE 1.5. Public works map of planned roadworks, 1897. Source: Archives Nationales d’Outre-Mer, Aix-en-Provence, France, 1TP/1127/5.

and in the process to homogenize space, an important stage in their project to uproot Malagasy sociopolitical relationships to the land and implant French-colonial ones.

A schematic map in an 1897 Public Works report documents how the French sought to reinvent space through roads and the limitations of their understanding (figure 1.5). On the map, a black-and-white dotted line traces the original Malagasy porter trail leading from Tamatave to Antananarivo, while a heavy red line (the dark, solid line in figure 1.5) depicts the construction of the French road from eastern Brickaville, some miles inland along the Rianila River, to the capital. The porter trail follows a circuitous path along the Vohitra and Sahatandra Rivers to orient travelers and minimize dangerous river crossings.

The French road, by contrast, cuts directly from the coast to the capital and crosses the rivers countless times, requiring significant bridgeworks. As of July 1897, only two short sections of the French road required further construction. But the French focus on the road as a vector of colonial control provided an inadequate understanding of the colony. On the map, waterways cross the road and then disappear, while the forest extends north-to-south in an impossibly

linear fashion. French roads shaped their understanding of the colonial space. A striated and oversimplified view emanated outward from the road because the road's imagined role was merely to connect colonial nodes such as Antananarivo and Brickaville. The spaces in between were simply obstacles to be overcome. Although roads penetrated colonial space, their territorial effects were weak, and the knowledge they created was limited.⁶⁰

As a result, Malagasy social and economic life continued away from French roads. French officials investigated rumors of an old porter trail from the coast to the capital, used during King Radama I's reign in the 1810s and 1820s but abandoned owing to Queen Ranaivalona I's isolationist posture. In 1896, the French found the old path, long abandoned by the Merina Kingdom but the site of much unofficial, illicit traffic. The path served as a veritable highway for cattle thieves who stole livestock from the upland zones and then sold them along the eastern coast. The surveying mission discovered entire "herds" of cattle "in the heart of the forest" abandoned by thieves as the French approached.⁶¹ And even Gallieni recognized the continued importance of preexisting paths, writing in 1897 that the French must not "abandon certain great arteries, which already occupied an important economic role before our arrival in Madagascar [and which role now] grows day by day."⁶² In this context, military posts arrayed along new French roads underscore the lack of French influence nearly everywhere else. The *tache d'huile* implied the three-dimensional projection of French control from their posts, but the reality of oil stains connected by narrow roads was a skeletal, incomplete form of control that Malagasy subjects simply avoided when necessary.

These shortcomings of the French road regime had repercussions beyond French pretensions to extend administrative control and manage colonial space. Roads lay at the core of the colonial labor question. Gallieni estimated that no more than three million people inhabited the island at the turn of the century (compared to nearly forty million people in France).⁶³ The French devised evolutionary models of road development not only to improve the speed and reliability of transport but also to minimize their dependence on Malagasy porters. This would not only eliminate the discomforts expressed by Lyautey but also modernize the colony's labor practices. By the end of 1897, Gallieni lauded the secondary effects of road development, explaining that "currently the convoys of porters have notably diminished, to the great advantage of the *mise en valeur* of the soil, which henceforth has more hands for agriculture."⁶⁴ The portage regime, combined with the low population density of the island, drained the labor pool for French economic development initiatives. The French administration not only moved to minimize dependence on portage but had to find workers to clear, build, and maintain the roads that would encourage economic development according to French plans. In 1897, shortly after annexation, the

French sought to expand the labor supply by recruiting three thousand Chinese laborers to build mule paths in the hot and humid lowlands.⁶⁵ The French were disappointed to learn that their recruits were not hardy peasants but “vagabonds and former pirates” who “spent their nights gambling and abusing opium.” The Chinese suffered extreme mortality and morbidity, and the French sent the survivors home by the end of the year. They then turned their attention across the Mozambique Channel, where the population of the Portuguese territory was “dense, strong, relatively poor, and particularly apt to endure the climate of the intermediate and coastal zones of the Grande Île.” They reached a deal with the Portuguese government to transport one thousand laborers from Mozambique to construct roads, but the Portuguese demurred at the last minute and allowed only seventy-five to make the journey.⁶⁶ These failed experiments signaled to the French that road laborers would have to be recruited from the island itself.

The growth and evolution of the road network according to French principles gradually transformed the island’s labor and tax regimes. Roads were expensive and time-consuming to build. The financial support offered by the French Ministry of Colonies did not suffice to fund Gallieni’s ambitions (from 1900, French law dictated that colonies support themselves financially), and his administration thus sought other means to advance construction.⁶⁷ French ideals of the civilizing mission led to the abolition of slavery upon annexation in August 1896, which, the French later admitted, created “a serious disturbance in the labor regime.” In response, Gallieni decreed a transitional labor obligation in Imerina on October 21, 1896. The *prestations* (service) regime, modeled on the hated *corvée* of early modern France that was abolished in 1789 in the early stages of the revolution, was merely the Merina *fanompoana* by another name. *Prestations* required all able-bodied men age sixteen to sixty to provide fifty days of labor annually to the colonial state. The French concocted this widely detested regime as a temporary expedient to develop the road network. In 1898, the French extended the obligation to the whole island and reduced the labor tax to fifteen days of service, for which Malagasy workers received meager compensation of 1.5 pounds of rice and 0.25 francs daily.⁶⁸ The French based the *prestations* system on the premise that the colonial state acted in the interest of the Malagasy people and therefore could make demands on them. On the impoverished, thinly populated island in the early years of colonial development, Malagasy labor was far more valuable than any cash tax. The colonial tax regime built the roads, and, by extension, those roads entrenched the sociopolitical dynamics of the emerging colonial state, which was little more than an *ancien régime* institution for extracting taxes and imposing labor obligations. Gallieni believed in the capacity of “moralizing taxes” to instill European labor discipline and fealty to the colonial regime, making taxation a social and political tool as much as a fiscal one.⁶⁹

The nature of roadwork defined the new colonial order. The colonial archive is rife with images chronicling roadworks in progress, the generic and repetitive nature of which bears close analysis.⁷⁰ The Gallieni collection at the French National Archives possesses dozens of such photographs as evidence of his administration's transformation of Malagasy landscapes and society. A photograph of the roadworks in progress on the Route de l'Est under the *prestations* regime (figure 1.6) depicts the scale and complexity of Malagasy labors in the

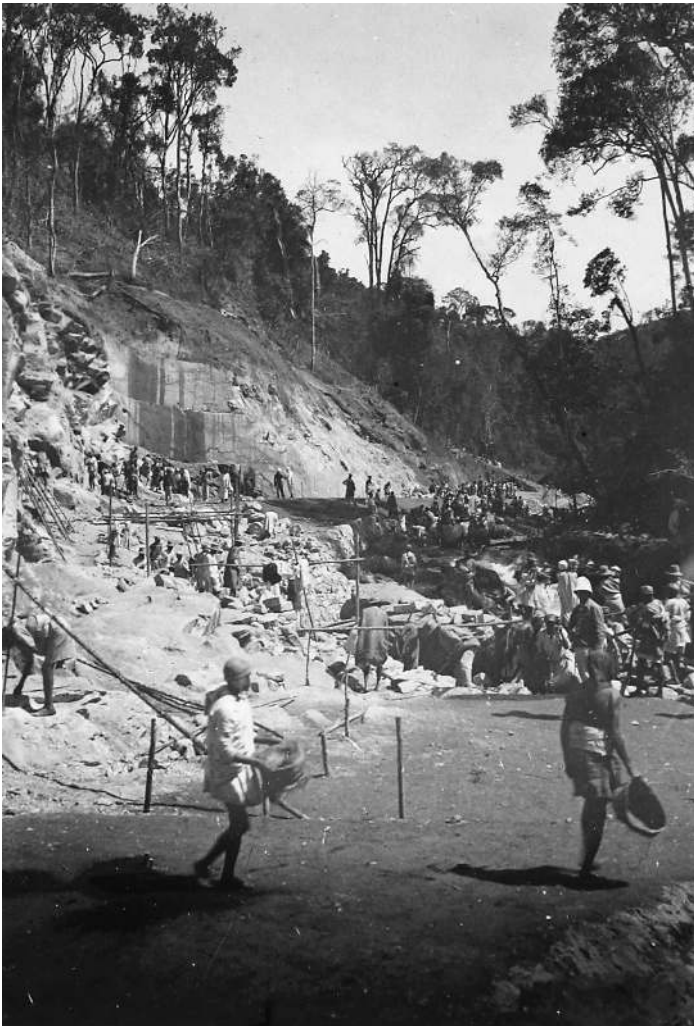


FIGURE 1.6. Construction on the Route de l'Est, late 1890s. Source: Archives Nationales d'Outre-Mer, Aix-en-Provence, France, Fonds Gallieni, 44PA166/109.

final years of the nineteenth century. Dozens of laborers work to lay rock bed in the middle of the frame. Laborers carrying baskets ferry rock and soil to the worksite. On the left side of the frame groups of men chip away at the hillside to create space for the roadbed. A French supervisor in a white pith helmet regards the photographer knowingly while workers swarm around him.

The paternalistic system of European guides and African laborers that would define colonial relations for decades is captured in time by the photographer. The depth of the image illustrates the scale of the work and how the road in progress began to transform the environment of tropical Madagascar through colonial infrastructure. The French perspective of the image places Malagasy far in the distance as an aggregate mass, obscuring individuals in favor of the road itself to highlight the scale of the transformation.

From the perspective of the laborer, road construction appeared quite different. Building roads required exhausting manual labor. No mechanized equipment supported construction. The French occasionally blasted rock with dynamite, but otherwise all work was done with picks, shovels, chisels, and machetes. The French forced workers to travel far from their homes and lodged them in make-shift camps, where they were often subjected to corporal punishment. Disease ran rampant. Local officials eager to meet deadlines flouted the legal obligation of fifty days of labor, and Malagasy workers often toiled over two hundred days per year in the late 1890s.⁷¹ If the French perspective of the photograph illustrated the conquest of the tropics and the organization of Malagasy labor power, the Malagasy perspective suggests a site of coercion and exhausting, dangerous labor.

Changes in the system of road labor itself became a metric of French *mise en valeur*. In August 1900, the vital Route de l'Est was nearly complete, but a particularly difficult, thirty-five-mile section through dense forest remained. Gallieni traveled to a worksite and implored the gathered workers "to redouble their zeal and activity," promising that "the regime of *prestations* would be abolished as soon as the completion of the roadworks will allow the opening of the road to traffic."⁷² Gallieni counterbalanced the extortive implications of this statement with material enticements. To encourage the workers to complete the work by the end of the year, the French state offered a significantly higher wage (the labor remained forced), ranging from one to two francs per day, depending on the skill of the worker. Gallieni's administration impressed an additional twenty thousand workers from October and opened the completed road to traffic on December 31, 1900.⁷³

With French roads beginning to supersede Malagasy trails for French use, the tax system could also evolve. In 1901, the colonial administration eliminated *prestations* and quadrupled the individual tax paid in cash, forcing Malagasy subjects

to earn wages and enter the French labor market.⁷⁴ Like the *prestations* regime, cash taxes rendered Malagasy subjects poor and miserable, and tax obligations led to a decline in the output of subsistence agriculture; in 1903 the French imported three thousand tons of rice to fill the gap.⁷⁵ Able-bodied men still owed their district administrator (*commandant de cercle*) eight days of labor annually to construct and maintain public works of local interest, a semantic shift that changed little of the worker's toil. To the French, the completion of the Route de l'Est and the evolution of taxation made Madagascar definitively more modern. For the Malagasy, however, the French colony of roads required unsustainable labor and tax obligations for an economy based on subsistence farming.⁷⁶ For both colonizer and colonized, the development of the road network defined the nature of colonial rule.

The Promise and Disappointment of the Colonial Motor Vehicle

As arterial roads opened and secondary ones began construction at the turn of the century, the French rethought their means of locomotion. They considered portage barbaric but a necessary evil in the initial stages of conquest and colonization. Mules and cattle pulling carts could be used, but the climate and terrain of the island made forage unreliable.⁷⁷ As early as 1898, Gallieni had determined that "Madagascar will not nurture a sufficient quantity of animals" to serve its transport needs and became convinced that "the introduction of mechanical transport to the island" was the only solution. Unfortunately, cost and time to construct meant that railroads would not commence operations for some time, and their impact would be limited. Nor were motor vehicles a "practical solution" at the end of the nineteenth century.⁷⁸ Nevertheless, metropolitan lobbyists and entrepreneurs encouraged colonial officials to deploy automobiles in the colonial sphere. In 1898 the Parisian president of the Société l'Automobile lobbied Charles Bricka, the inspector general of public works for the colonies, to encourage the use of automobiles in Madagascar.⁷⁹ The following month, Alexandre Deydon, an artillery officer previously deployed in Madagascar, informed the minister of colonies that Gallieni had always "deplored the immobilization of such a great number of natives occupied with transport and thus removed from agricultural works." Deydon sang the praises of gasoline-fueled motors and suggested that they could solve Madagascar's transport problem and labor problem simultaneously.⁸⁰

Despite Gallieni's initial skepticism of colonial motor vehicles, the progress of road construction shifted his views. He returned to the Grande Île from a journey

to the metropole in the summer of 1900 with three automobiles, despite the scorn of metropolitan opinion; the director of a large Parisian commercial house declared, "Never, my General, will you return to Antananarivo by automobile."⁸¹ In August 1900, a chauffeur drove Gallieni fifty miles along the completed Route de l'Est in four hours, which the governor believed augured well for the use of motorized transport on the island. The next month, he traveled from the capital to Maevatanana along the Route de l'Ouest to survey improvements to the road and discharge administrative duties. He covered over two hundred miles in three half-days, totaling twenty hours.⁸² With his opinion changed by the improvement of roads and motor vehicles alike, Gallieni declared that automobiles would be "the true solution to the problem of transport in Madagascar while awaiting the construction of the railroad."⁸³ Shortly after opening the Route de l'Est in January 1901, French officials drove the entire length of the road from the capital to Tamatave in a twelve-horsepower Panhard & Levassor automobile, completing the 310-mile round trip in thirty hours. This journey demonstrated the "perfect viability" of the road and "the possibility of organizing a rapid system of communication between the coast and Antananarivo." A few days later, an automobile completed the uphill return from the port in thirty-two hours. If not particularly rapid, it reduced significantly the average porter transit of sixty-seven hours.⁸⁴

In the new century, the French expanded the road network beyond the east-west axis that connected Antananarivo to the coasts. Lyautey applied the *tache d'huile* method to the restive southern half of the island, installing himself in the south-central city of Fianarantsoa in the fall of 1900. Upon taking command on October 5, 1900, Lyautey declared "the era of cursory public works is over" and oversaw the infrastructural development of the southern half of the island.⁸⁵ In January 1901, Gallieni informed the colony's administration and *commandants de cercle* of the plan to extend French roads into recently conquered regions. These were not to be summarily constructed *routes de fortune*, but scientifically planned roads according to "the hydrographic and orographic regime and the orientation of natural paths of penetration and evacuation."⁸⁶ Once again, road construction would produce scientific knowledge of the island, and the resulting network would organize the territory along rational lines. Gallieni's 1901 program projected two east-west transversals, as well as a north-south axis from Diego Suarez to Fort-Dauphin, dividing the entirety of the island into a grid. A later report explained that "the island will naturally subdivide itself into a certain number of economic regions" to be served by secondary roads and connected to natural ports in their region (eleven on the east coast and eight on the west coast).⁸⁷

Meanwhile, the administration began to organize automotive services. Gallieni assigned Captain Joseph Gruss, his aide-de-camp and chauffeur (and after

Gruss married Gallieni's daughter Marcelle in 1905, his son-in-law) to manage their development.⁸⁸ Gruss cautioned his metropolitan countrymen that "if [driving] is a pleasant sport in France, where there are many good roads and a regular climate, it is not the same in Madagascar, where you have to reckon with the heat, sudden swings in temperature, and finally the rains, very frequent on the coast, which render the road particularly slippery."⁸⁹ Although the French constructed roads to modern standards, the climate and terrain of the tropics meant that the French mastery of nature through infrastructure was incomplete. The French created the automotive service in 1900 with the three Panhard & Levassor vehicles Gallieni imported from France, adding two more in 1901. In these years, they struggled to build a stock of replacement parts; and because the engines of these early vehicles were so "delicate," requiring "meticulous and constant service," the administration created a mechanical workshop in the capital. The temperamental vehicles made it difficult to staff the service because drivers had to be expert mechanics prepared to conduct repairs on the spot. Gruss eventually settled on identifying experienced mechanics and teaching them how to drive, a time-consuming process. Staff expertise was at a premium; he observed that "automobiles demand delicate and conscientious care and the best find themselves rapidly out of service in the hands of an inexperienced driver."⁹⁰ By the end of 1902, Gruss recruited and trained twenty staff. Clearly, roads, vehicles, and training absorbed significant resources in the young colony.

The technical shortcomings of French cars and colonial roads remained a brake on automotive development. In 1902, weak bridges and the steep and slippery roads prevented heavier vehicles from moving freight. Only postal delivery and personnel transport proved economical. As the administration continued to build roads and Gruss trained drivers and mechanics, a support network developed across the island. Alongside the military posts of the *tache d'huile* strategy came fuel depots, mechanical workshops, and supply dumps with scores of tires and spare parts.⁹¹ Gruss found that even on "modern" French-built roads, the twelve-horsepower Panhards were too weak to handle the ascent from the coast to Imerina. The engine ran hot, and the water in the car's radiator became a "boiler" rather than a cooling mechanism.⁹²

When Gallieni's decree of May 20, 1903, created a regular automotive transport service along the Route de l'Est, challenges multiplied. The auto service employed twenty-three French and twelve Malagasy staff members by June 1903. Gruss experimented with employing Malagasy as drivers to solve his staffing challenges. He admitted "frankly negative results" because although large automobiles were "truly very easy to pilot," they demanded "a certain muscular force" that the French believed lacking among Malagasy men. To drive in colonial Madagascar demanded maneuvers to avoid obstacles and keep the car on the road, requiring

that drivers be “robust and morally well-hardened.” The Malagasy driver, Gruss believed, failed both physically and morally. He was too “sickly” and possessed “no strength in the arms”; working the clutch required more strength than he had to offer. Further, he lacked the “presence of spirit, the calm, and sangfroid necessary to drive.” Driving from Tamatave to Antananarivo was a feat of endurance, requiring the driver to travel all day and into the night, often in torrential rains, and to perform repairs in the field. Gruss and his compatriots found the necessary skills and commitment lacking in the Malagasy and therefore believed them better suited to caring for the vehicles, completing tasks such as cleaning and greasing. In a pinch, the Malagasy could drive the car at slow speeds on easy roads “on the condition of having a European at their side,” but “it would be very imprudent to entrust a car to a Malagasy alone.”⁹³

In the first decade of French rule, the automobile thus shaped the colonizer’s perceptions of the Malagasy. Their putative physical and spiritual inability to master the vehicle gendered the Malagasy feminine—physically weak, wanting in traditionally masculine skills and character traits—and relegated them to roles of care. Simultaneously, it shaped the relations of Malagasy apprentices supporting European masters, part and parcel of the paternalism of France’s civilizing mission. Although French officials transferred motor vehicles geographically to the colony, and varied French users (administrators, missionaries, settlers, farmers) used them in different ways, they guarded against their cultural diffusion to the Malagasy, using the technology to define racial-civilizational barriers that extended well beyond the automotive service.⁹⁴ As David Edgerton writes, “In all the places where white technology went, white technicians were in control.”⁹⁵

The roads themselves structured colonial relations through forms of mobility. French administrators expressed great frustration when the “very tortured” state of many colonial roads required the utmost care to avoid collisions with pedestrians, handcars (the *pousse-pousse*, introduced by Chinese laborers and adopted by Malagasy), oxcarts (adapted from salvaged Lefebvre wagons), and other automobiles. Gruss lamented that roads clogged with Malagasy cart operators “made circulation very difficult,” a state exacerbated by the fact that “the Malagasy had a crazy terror of the automobile.” In what would become a cliché among Europeans across colonial Africa, Gruss claimed that the Malagasy would drop their carts in the middle of the road to flee, while others would take flight with their handcars, not knowing whether to pull off to the left or right to allow the car to pass.⁹⁶ The French quickly decided that they must teach traffic rules to ensure proper circulation and protect precious cars, freight, and Malagasy lives (in that order).⁹⁷ Civilization required orderly movement, and the administration undertook a program of “education” and “habituated the Malagasy to the automobile.” Beginning in 1903, Gallieni ordered large signs erected in all villages instructing

the Malagasy in proper conduct when encountering an automobile. Pedestrians were to immediately move off the road to allow the car to pass, while hand-carts and oxcarts were to maintain their bearing and speed to allow the faster car to overtake them.⁹⁸ Within this system, the French driver possessed agency and played the role of the aggressor, while Malagasy travelers deferred to the driver's initiative. Such regulations sought to transform roads from dangerous and disorderly spaces to sites of rational, predictable movement and discipline. French principles of circulation, the colonizers believed, would edify the Malagasy and entrench French power simultaneously, making them crucial to Frenchifying the colony.

Motor vehicles allowed the French to perform their perceived civilizational superiority. The metropolitan public, fascinated by motor vehicles and colonial ventures separately, devoured coverage of the colonial automobile. One photograph in the Gallieni collection circulated widely in the French media and stands out for its propagandistic qualities (figure 1.7). Along the Route de l'Est, on the outskirts of the dramatic Mandraka Gorge, a perfectly flat, sinuous road winds around an outcropping in the background, disappears, and rounds a rock face toward the viewer. At the center of the frame, the driver of the Panhard automobile navigates around the bend. The framing of the obviously staged photograph



FIGURE 1.7. The Route de l'Est around the Mandraka Gorge, 1901. Source: Archives Nationales d'Outre-Mer, Aix-en-Provence, France, Fonds Gallieni, 44PA164/59.

is immaculate, with the lines of the road and the bearing of the automobile creating a sense of kinetic movement in the still frame. The driver typifies the power and prestige the French believed the automobile conferred. His elevated bearing and visibility in a vehicle without a roof or windshield bestow authority, while the power of the automobile allows the French to master nature and demonstrate their hegemony over the island. The image depicts the natural grandeur of the Grande Île while simultaneously celebrating French modernization.

Metropolitan perceptions and colonial realities diverged, however, and automobiles just as often exposed the French and highlighted weakness. In 1903, Gallieni complained that the media coverage of roads in Madagascar fueled public misconceptions. Gallieni had to parry complaints from *colons* and businessmen that their cars had few serviceable roads to drive on. Cars and carts clogged the Route de l'Est, but all other roads on the island were mere *routes de fortune*, including the Route de l'Ouest to Maevatanana. The slippery clay soils of the latter made the path unusable in the rainy season on the western half of the island (November to April), and the French continued the arduous work of replacing wood bridges with metal ones, laying stone roadbed, and rectifying the path according to their engineering principles. These improvements and similar ones on countless other roads absorbed significant time, money, and labor. Notwithstanding the administration's efforts, Gallieni admitted that Madagascar's status as an automotive colony was "still premature."⁹⁹ Images of colonial automobiles distorted the metropolitan imaginary of progress in Madagascar, making such depictions a useful resource for colonial proponents to rally public support but a source of frustration to officials on the ground, who found that the influence of automobiles was more individual and private than collective and public.¹⁰⁰ The distance between propagandistic potential and colonial realities typified this early era of automotive empire.

Evaluating Automotive Empire in Madagascar

The paradoxes of colonial road construction are encapsulated in a photograph of a bridge constructed along the Route de l'Est outside Moromanga in the first years of the century (figure 1.8). The road emerges dramatically from a hill that has been split in two by dynamite and Malagasy laborers to make way for a French road. It then traces a straight line toward the photographer, aided by a massive embankment that gives way to a short bridge over the Mangoro River. The impressive image demonstrates the scale of environmental transformation wrought by the French, who were convinced that reliable, wheeled traffic would quickly transform Madagascar. The labor costs and time required to create such



FIGURE 1.8. Overview of the Route de l'Est outside Moromanga, ca. 1900. Source: Archives Nationales d'Outre-Mer, Aix-en-Provence, France, Fonds Gallieni, 44PA186/80.

bridgeworks were immense, however. Colonial officials regularly pondered whether the finished roads and bridges were worth the investments. But they convinced themselves that they had completed a significant, one-time project that would pay dividends in the future by freeing porters to work the land and by inspiring French *colons* and investors to develop the island.

French officials lauded the quantitative scale of road development and the qualitative improvements it delivered. In 1910, the Public Works Department reported that the French had spent 32.7 million francs to construct 1,150 miles of roads. Those constructed earlier cost significantly more owing to inexperience and lack of equipment, and thus the colonial administration believed that road construction was becoming more efficient and economical.¹⁰¹ Colonial cartographers regularly updated maps to chart the extension of the overall network and the improvement of its constituent parts from seasonal to all-weather roads and from porter trails to cart paths to drivable roads.¹⁰² Beyond filling the map of the island with modern infrastructure, the French considered the social and cultural effects of these developments on the Malagasy to be significant, ranging from the civilized choreography of traffic to improving their subjects' hygiene. The report chronicling Gallieni's administration claimed that French action had transformed the "cesspools of filth inhabited by a population indifferent to the

most fundamental rules of hygiene into clean, healthy towns with well-aligned roads.”¹⁰³ To French eyes, well-ordered circulations through Malagasy spaces produced a healthy polity.

The administration also charted the economic benefits of roads. Madagascar’s economic production (as measured by French officials) grew rapidly in this era, from 9 million francs in 1895 to 79 million francs in 1910 (although, of course, 1895 was the year the French conquered Madagascar, triggering economic disarray).¹⁰⁴ Declining freight costs tracked the nearly ninefold growth in economic output. The average price to transport a ton of goods from Tamatave to the capital fell from 1,300 francs in 1896 to 150 francs in 1909, a decline of 88 percent.¹⁰⁵ The value of the road network could be measured in more than just the growth in economic productivity, however, because officials had faith that the promise of easier, faster, and more direct transport would stimulate further production, initiating a beneficent cycle of economic growth. In a crucial development, the price of gasoline and supplies fell rapidly as the road network improved, allowing the automotive service to expand the number of vehicles in operation.¹⁰⁶ And perhaps most importantly, because motor vehicles and carts replaced countless Malagasy “immobilized” through portage, the administration reassigned their valuable labor to cultivating rice or working on construction projects of “public utility.”¹⁰⁷ In fact, the administration believed that the progress in transport was so dramatic that in 1910 Hugues Berthier argued that the core challenge of Madagascar was no longer domestic transport, but connecting Malagasy production to regional markets, particularly those of the industrializing, densely populated Union of South Africa.¹⁰⁸ Such developments, French colonial administrators argued, would funnel profits back to Madagascar for reinvestment, rather than enriching the commercial houses of Paris and Marseille.¹⁰⁹ All told, roads provided a measurable, mappable rubric of French colonial power, while proponents of roads and motorization associated economic growth with improvement in the island’s transportation regime.

But automotive empire in Madagascar underlined French failures as much as their successes. Even as the road network improved, the French lost money on their automotive ventures. In 1910, the automotive service’s total costs nearly doubled its receipts. Officials explained the disparity by pointing to the high cost of fuel in Madagascar, the price of rubber and the rapid deterioration of tires in the tropics, the poor logistical organization of deliveries, and the frequent use of automobiles by administrators for the sake of convenience. Cars symbolized power in the colony but rarely entrenched it. By 1910 the Department of Public Works admitted, “we must consider the automotive service as necessary to the development of the colony and not as an enterprise that can offer . . . financial returns.”¹¹⁰ It was a public utility, not a money maker.

The economics of roads fared no better. The promise of a new road convinced many officials to finance construction, but the mundane work of maintenance excited no one, and roads quickly fell into disrepair. After the Route de l'Ouest from the capital to Maevatanana opened in 1901, the administration conducted no real maintenance until 1906, by which point it was unusable to heavier motor vehicles, and the decrepit state of its 120 wood bridges caused regular accidents. The deterioration of Malagasy roads could be traced to the tropical climate, not heavy traffic. The extremes of monsoon rains and prolonged dry spells on the west coast meant that "the system of maintenance that suits them best is the system of constant maintenance."¹¹¹ Maintenance, argues David Edgerton, is a central task of governance.¹¹² On this count, the French administration failed miserably, and the shoddy state of the road network in many parts of the island for much of the year revealed the weakness of the colonial state. Roads may have Frenchified Madagascar, but as tools of colonial control, their effects were superficial. In 1912, the inspector of public works for the colonies, a Mr. Aubry, traveled to Madagascar to examine the island's infrastructure. In a crushing assessment, given the level of attention paid to public works by Gallieni and Augagneur, Aubry noted that while Madagascar certainly possessed numerous works of general interest, "we cannot speak of any general and methodological long-term plan."¹¹³

Roads exacerbated the economic challenges of the colony. The French, an earlier report claimed, designed the colonial economy in "extreme haste" and depended on sunny projections rather than proven agricultural models or known mineral lodes. The tropical promise of Madagascar collapsed in the first decade of the twentieth century as the French discovered that its combination of poor soils and labor shortfalls militated against profitable sugar cultivation.¹¹⁴ According to Aubry, as "a country producing mostly relatively poor products—rice, manioc, common minerals—which cannot support the very elevated cost of road transport over long distances," the colony suffered from a dearth of metropolitan investment and attracted few European settlers. Most French plantations were owned by the land-hungry *Réunionnais* who had pushed for annexation in the late nineteenth century, not metropolitan Frenchmen, and as early as 1901 Gallieni himself admitted privately that Madagascar would never become a settler colony.¹¹⁵ The low population and poverty of the island provided meager tax receipts, and the astronomical costs of road maintenance in the tropics (one million francs in 1912 alone) meant that the French could not afford to construct any new ones.¹¹⁶ Rather than serving as an asset to governance and development, roads were a burden that drained the colonial coffers. Meanwhile, the improved speed and price of transport failed to make Madagascar's agricultural and mining industries profitable enough to spur *mise en valeur* on a wide scale.

But beyond economics, for all the pride in modernizing and Frenchifying the territory, the network suffered fundamental flaws of conception and geographic layout. Vast swaths of the island remained untouched by the road network, let alone railways. Aubry noted that the French system of devolving the construction of roads of secondary interest to local officials led to a faulty organization of space. The *commandants de cercle* generally built roads to the next village, rather than the closest arterial road, and in many sectors, roads ran parallel to one another. In the place of the localized, people-focused policy of building roads from village to village, the administration in Antananarivo needed a centralized plan based on common standards and focused on the organization of space, so that the crops and minerals of a given region could be quickly evacuated, brought to port, and delivered to external markets. The underlying logic of the road network, Aubry implied, must be reoriented toward the (French) export economy, not the (Malagasy) human dynamics of the island. Despite the preceding efforts to make Madagascar a colony of roads, he concluded that “there is no question that for Madagascar, even more than for every other colony, it is the development of the railway that will increase the wealth of the country.”¹¹⁷

Gallieni's countrymen judged that his vision for the road network depended on improper spatial principles, sabotaging French colonial efforts. Another report, this produced by Madagascar's Public Works Department in 1910, lauded Gallieni's ambition but critiqued his “excessive principle of centralization” that made the capital the hub of all administrative and economic activity and did not “respond to any economic concern.” Antananarivo was not Paris, and the hub-and-spokes model that organized the politics and economy of France hindered the development of Madagascar. Gallieni's geometric model combined an overly centralized administration with a too-localized system of construction and maintenance. The Public Works Department optimistically believed that “the needs of commerce, industry, and agriculture” could be “grafted on” to the existing network, but the future principles of construction would have to shift away from the omniscient orchestration of the road network from Antananarivo. Gallieni's approach assumed that the administration could create idealized patterns of movement along state-created lines of communication, making them vectors of state power. Instead, after fifteen years of road development, it became clear that “the construction of paths of communication cannot impose directions on colonization, it is up to colonization to indicate its needs.”¹¹⁸ Gallieni's colonial road experiment had failed, and his successors would seek to salvage his road program well into the 1920s and 1930s, when the road system's demands for labor and taxes helped fuel the rise of anticolonial Malagasy nationalism.¹¹⁹

For all its failures as a model of colonial development, Gallieni's attempt to strengthen colonial power through roads and motorization had wide-ranging and long-lasting effects. First, roads were an obsession during the 1895 conquest campaign, for better (guaranteeing French supply lines) and for worse (exposing French soldiers to disease). As the connective infrastructure of Gallieni and Lyautey's *tache d'huile* strategy, they later aided the so-called pacification of the colony and situated the French administration in Malagasy spaces. The administration's later focus on roads as a tool of economic expansion thus connected the eras of conquest, pacification, and development, demonstrating the artificial distinction of these phases and how the road regime in French Madagascar bridged all three. Second, surveying and constructing roads produced knowledge of the land and its peoples in the crucial early years of French rule. Roads therefore constituted the colonial field of action and shaped everything from economic development campaigns to the nature of colonial administration, mapping the ideologies and rhythms of French rule in space. Third, the immense labor demands for road construction and maintenance made them a key site for the definition of Malagasy obligations to the colonial state. French *prestations* replaced Merina *fanompoana*, and the roads of the Grande Île became a physical and metaphorical site for the establishment of coercive political and social relations in Madagascar. Fourth, however imperfect or disappointing in their actual uses, roads served as symbols of French vigor and success in their colonial campaign. Officials measured progress by the rubric of roads, charting it on maps with thickening networks of lines and through photographs of construction and use.

Roads clearly Frenchified Madagascar. They epitomized the transition from a Merina regime that relied on isolation and immobility to thwart outside influence to a French colony that coordinated movements in, around, and through the island and between the island and the wider world. The creation of the road network in Madagascar did not transform the island as the French imagined, but it disrupted precolonial ways of life, making roads central to the invention and operation of the French colonial state. As the next chapter will show, centralized, stepwise development of road infrastructure was only one model of automotive empire. In German East Africa, the entrepreneurial potential of the automobile itself offered another path.

CARS WITHOUT ROADS IN GERMAN EAST AFRICA

In Africa before World War I, not all colonialists were drivers, nor were all drivers colonialists. But the imperiousness of both positions fueled dreams of automotive empire, including the largely forgotten exploits of Paul Graetz. Graetz served in the Schutztruppe (Protective Force) of German East Africa (Deutsch-Ostafrika, DOA, comprising Tanzania, Rwanda, and Burundi) from 1902 to 1904. There, he presided over roadbuilding campaigns in the southern Lindi and Songea districts that bordered the Portuguese territory of Mozambique (figure 2.1).

While working in the colony, Graetz grew increasingly frustrated with the German administration's preference for railways and became obsessed with the potential use of motor vehicles in the colony. Upon return to Germany, he contacted automobile manufacturers and concocted plans to undertake a motorized expedition connecting Germany's two largest colonies: DOA and German Southwest Africa (Deutsch-Südwestafrika, DSWA, modern Namibia), via the British possessions of Northern Rhodesia and Southern Rhodesia (Zambia and Zimbabwe), Bechuanaland (Botswana), and the territories that in 1910 would become the Union of South Africa (figure 2.2).

He wished to disabuse his countrymen of the idea that Africa was "wild, impassible, and inhospitable."¹ A British publication stated, matter-of-factly, "Herr Graetz expects the journey will occupy about six weeks."² In reality, the crossing of nearly six thousand miles lasted 630 days, from August 1907 to May 1909.

Graetz's expedition, though little more than a footnote in most histories of European colonialism, merits close analysis as a form of entrepreneurial imperialism.³ From the mid-nineteenth century, a long line of entrepreneurial

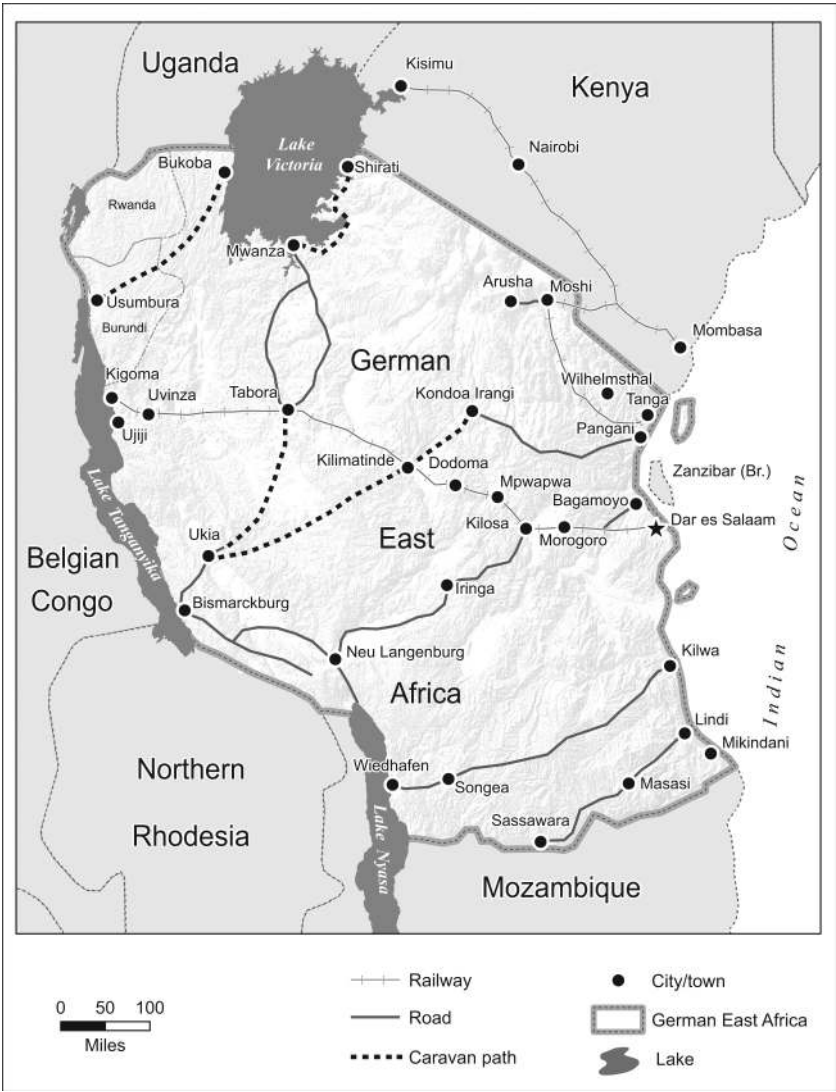


FIGURE 2.1. German East Africa, 1914. Map by Di Shi.

explorer-exploiters—European scientists, missionaries, businessmen, and prospectors—pursued private motives such as fame, knowledge, wealth, or adventure in Africa. In doing so, they advanced the wider interests of European societies by extending the reach of empire, industry, science, and the church, shaping an era of informal imperialism. Although European states increasingly formalized imperialism by bringing African territories under their direct political

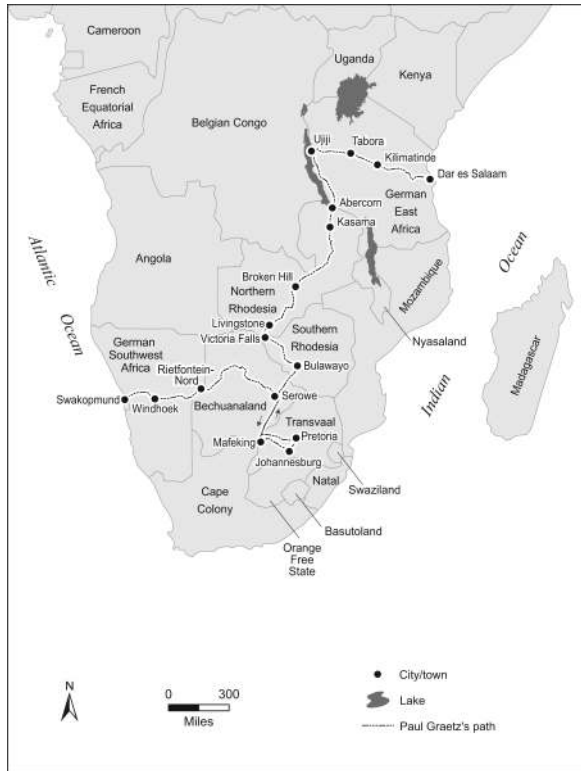


FIGURE 2.2. Paul Graetz's trans-African automotive crossing, 1907–1909. Map by Di Shi.

control in the late nineteenth century, entrepreneurial imperialists continued to pursue fame and fortune in the colonies.⁴

Paul Graetz found in the automobile an ideal tool for entrepreneurial imperialism. His lengthy expedition satisfied his personal lust for adventure and quest for fame while also serving the empire, because the automobile allowed Graetz to play the roles of private citizen and German imperialist simultaneously.⁵ On the one hand, the automobile was individualist: expressive and immersive, responding to the impulses of the driver alone. Europeans in colonial settings fetishized the raw power of the automobile and its symbolic import. Driving in Africa was a politically charged performance of European technological and civilizational prowess.⁶ Although Graetz was a private citizen after leaving the *Schutztruppe* in 1904, as a white man behind the wheel he was, for all intents and purposes, a colonial representative. In the years before World War I, scarcity and a racialized economy of use made the car a mark of distinction. On the other hand, although the technological shortcomings of the early automobile limited its use as a tool

of empire, Europeans forecast its great potential to serve collective ends.⁷ When organized into infrastructure networks and systems of mobility orchestrated by the colonial state, the automobile promised the functional administration, territorial control, and capitalist expansion that still lagged across the continent.⁸

Graetz's expedition in eastern and southern Africa aligned the individualist/expressive mode of automobility and the entrepreneurial strain of imperialism. Unlike railroads, which required the capital and bureaucratic leverage possessed only by large states and corporations, the automobile could be purchased and driven by individuals. Further, the weakness of colonial states in pre-1914 Africa left the use of cars in colonial territories largely unregulated. In the absence of state initiative, Graetz connected his personal mission to the improvement of Germany's colonial administration and thereby to an increase in the power and prestige of the German empire. Unlike previous entrepreneurial imperialists, Graetz sought not to claim new territories but to consolidate existing ones. He claimed that his successful crossing would become "a cue for the application of the automobile in our African colonies and . . . proof of its utility there, thereby becoming a means of development and exploitation."⁹ Graetz's expedition is thus an important episode that connects the entrepreneurial and statist threads of imperial development, as well as the personal pleasure and collectivist potential of the automobile.

Graetz's entrepreneurial strain of automotive empire followed a different road map from those of contemporaneous efforts in Madagascar. Although both Graetz and Joseph Gallieni sought to replace precolonial portage regimes, the German prioritized technology over infrastructure and private use over public planning. Gallieni's focus on roads made the development of Madagascar a centralized project that demanded the planning acumen, financial resources, and military might of the colonial state from its very inception. Graetz's previous experiences in DOA—an even larger territory with few German administrators or white settlers—convinced him that the German colony would have to follow a different path. Whereas Gallieni built roads to Frenchify Madagascar, Graetz believed that a modified, colonial-model automobile could use existing caravan paths, which would allow German officials and businessmen to access every corner of the colony without significant roadworks, let alone the need for expensive and time-consuming railroads built and operated by the state.¹⁰ Empire by automobile would be cheaper and more adaptable than the fixed tracks that railroad empire would allow.¹¹ Graetz was convinced that the contours of automotive empire should emerge from the attributes of the motor vehicle itself.

Graetz was largely forgotten in history and ignored by his contemporaries. But his meticulous documentation of the expedition offers the most detailed engagement with African automobilism before the war. It is thus crucial to understanding the perceptions and misconceptions that animated projects of

automotive empire, as well as the relations—sometimes complementary, sometimes at odds—between entrepreneurial imperialism and state projects.¹²

Inauspicious Beginnings

Paul Graetz's journey began on August 10, 1907, in the colonial capital of Dar es Salaam. Recalling the occasion, Graetz wrote, "Farewell, Dar es Salaam, you haven of peace, farewell *Heimat* and civilization." Graetz considered Dar es Salaam German enough to describe it as *Heimat*—homeland—but the inland colonial presence was sparse. Driving westward, Graetz began a "struggle of modern technology with the tribulations of a vast, wild, still partially unknown continent, with the elemental forces of nature and an unknown fate."¹³ The evocative cover artwork of the first edition of Graetz's automotive travelogue rendered the journey in metaphorical terms (figure 2.3). Only the headlights of the automobile



FIGURE 2.3. The cover of Paul Graetz's travelogue, 1910. Source: Paul Graetz, *Im Auto quer durch Afrika* (Berlin: Gustav Braunbeck & Gutenberg, 1910).

are visible in the inky darkness, casting rays of light upon a lion, which, caught unaware, stares at the headlights. The raw, animalistic power of Africa comes face to face with the mechanized power of Europe. Although the scene is frozen in time, the viewer can imagine the automobile continuing unimpeded while the surprised lion vacates the path. The striking image would certainly catch the eye of the metropolitan consumer, and readers could imagine natural barriers to human endeavor receding before the irresistible advance of technological progress, the headlights of the automobile illuminating the “Dark Continent.”

Graetz’s journey brought triumphs and disappointments alike. On the second day of his journey, Graetz reveled as the automobile scaled steep mountain paths. The car easily overtook caravans of porters headed to the interior from the capital, and the porters “stepped into the bush with astonishment, forgetting the greeting ‘Jambo bwana’ [Hello, master] out of surprise, often even setting down their loads.” African porters, in Graetz’s interpretation of the incident, were as impressed by the Europeans’ technological achievements as was the lion on the book’s cover. But if we follow Graetz a bit farther down his path, a different picture emerges. After leaving the caravan in his dust, Graetz careened down the mountainside, and while steering to avoid a rock outcropping, his chauffeur drove the car into a swamp. The porters caught up. To Graetz, the porters “stared like curious children at the white colossus stranded in the quagmire.” Was he referring to the automobile or himself? The porters immediately jumped to the aid of the German traveling party, with more reaching the scene until “one hundred arms were ready to free the car from its captivity.”¹⁴ Graetz repeatedly reenacted this colonial tortoise-and-hare fable, speeding past porters only to suffer a breakdown, requiring their labor to continue his journey.

By the end of the week, Graetz had reached Morogoro, site of a German district office 115 miles west of Dar es Salaam. As he continued, the flat, grassy savannas allowed the car to approach speeds of twenty miles per hour. The car overtook wild cattle and a porter caravan before it encountered the Ngomberenga River. Graetz and his party assessed their options. The porters caught up. Graetz directed the porters to cut a path through the bush to the riverbanks and sent a few of them into the water to test its depths. Upon learning that the Ngomberenga was no deeper than three feet, Graetz forded it in the automobile. While traversing the river, the car settled into soft mud, sinking slowly. As water bubbled up around the hot engine, all four cylinders burst, and the vehicle became hopelessly stranded (figure 2.4).

His chauffeur immediately became forlorn, and Graetz once again called upon porters to extract the car from the river. By the evening, Graetz dispatched the chauffeur to Germany to collect replacement parts for the engine, requiring a walk to Morogoro, a train to Dar es Salaam, a ferry to Zanzibar, and a French

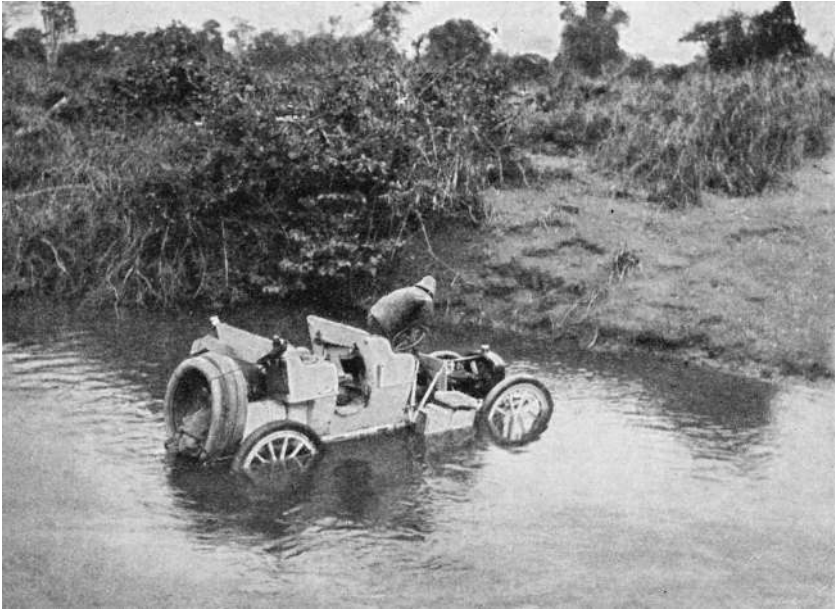


FIGURE 2.4. Paul Graetz's car mired in the Ngomberenga River, 1907. Source: Paul Graetz, *Im Auto quer durch Afrika* (Berlin: Gustav Braunbeck & Gutenberg, 1910).

steamer to Marseille. Meanwhile, Graetz and his associate Theodor von Roeder would continue with the inanimate car twenty miles farther west to the German station at Kilosa. The next morning, Graetz dispatched his African aide, Mzee, to broker an agreement with Chief Bakili bin Wasili, who sent his men to pull the car to Kilosa. As they did so, a glum Graetz sat behind the wheel of the lifeless automobile and could only muse, without any sense of irony, "What a vast difference between [human muscle power] and the all-conquering power of the motor!" Upon encountering another river that approached five feet in depth, Bakili bin Wasili's subjects emptied the car and then pulled it across the river, while Graetz sat at the wheel. To avoid getting soaked, Graetz and Roeder undressed.¹⁵ In the years before World War I, the automotive imperialist wore no clothes, both literally and figuratively. After only one week, Graetz had covered 170 miles and was forced to await the arrival of spare parts in Kilosa until November 28, a delay of fifteen weeks.

Paul Graetz's entrepreneurial mission emerged from his impressions of the German colonial project in East Africa. During the nineteenth century, East Africa had become the center of a long-distance trade in slaves, ivory, and firearms between the African Great Lakes and the Swahili Coast of the Indian Ocean,

increasingly under the control of sultans based on the island of Zanzibar.¹⁶ The tsetse fly spread trypanosomiasis widely among domesticated mammals in East Africa, making the trade dependent on human porters.¹⁷

Germany, which had only unified in 1871, was a relative latecomer as a European imperial power. The German East Africa Company (Deutsch-Ostafrikanische Gesellschaft, DOAG) began to insert itself into East African trade and contested Zanzibari claims to influence, organizing eighteen expeditions to the interior in 1884–1886. Chancellor Otto von Bismarck offered state protection over the DOAG's land claims in 1885, and by the end of 1886 the frontiers of German influence in the south (with Portuguese Mozambique), west (with Congo Free State), and north (with British Kenya) were set.¹⁸ After brutally suppressing a revolt against German influence in 1888–89, the German empire took over from the DOAG in 1891, cementing state control over the now-colony.¹⁹

The impact of German rule in East Africa should not be overstated. Travelers and traders from outside the region had long defined its history, and in the initial stages of colonial rule, Germans appeared little different from previous European explorers or Zanzibari merchants. DOA covered 384,170 square miles, almost twice the size of the metropolitan German empire (which included parts of what is now France, Denmark, Poland, Lithuania, and Russia) before World War I. From the beginning, Germans in the colony and colonial officials in Berlin struggled to define whether DOA should be a settler colony like Algeria and South Africa, or a trading colony with a small footprint of administrators and settlers. While the debates raged, European settlement in DOA remained thin, with only 1,390 settlers in 1904 and 4,998 in 1913. The colony counted only 737 German administrators and military officers when war broke out in 1914.²⁰ As in most nonsettler colonies, German officials cursed the tyranny of space and the dearth of population to perform labor and pay taxes; the population density of DOA was approximately one-twelfth that of metropolitan Germany, with significant variations by region.²¹ Because the population was most concentrated and the economy most developed in the northwest corner of the colony (particularly Rwanda and Burundi), the Germans depended on porters to connect these productive zones wedged between Lake Tanganyika, Lake Kivu, and Lake Victoria with the coast.²² In the first two decades of colonial rule, the Germans grafted trading and military posts onto preexisting trade routes in a parasitic manner.²³

The thin administration of DOA exacerbated the challenges of governance. In 1900, district official Hans Zache of Mikindani, in the southeastern Lindi district, noted the lack of German personnel away from the coast. Overstretched administrators served as “at once director, secretary, and treasurer” of their district. Zache lamented that the residents of his district put great stock in personal relations with German officials, a legacy of precolonial politics, and that his wide-ranging

responsibilities meant that he could not travel his district regularly. Indeed, “the first and last comprehensive tour of Mikindani took place in 1896.”²⁴ The dearth of officials troubled the German administration throughout its rule. The central Tabora district, the size of Bavaria, possessed one German administrator and his secretary to oversee a population of one million Wanyamwezi. Further, personnel cycled through the districts rapidly, and all officials essentially started anew to reestablish personalized political power.²⁵ The physical presence of the German state thus varied widely, and any colonial power was profoundly local.²⁶

The sheer size of the colony hampered effective administration, but the Germans found their inability to apply European concepts of sovereignty and territoriality particularly vexing. European conceptions of territorial sovereignty rested on the “permeation of territory” with state power and the removal of rival claims to authority.²⁷ In 1899, Zache undertook an administrative tour of his district, which shared a border with Portuguese Mozambique. The status of a border district, Zache noted, depended on relations with its neighbor, and, unfortunately, “Mikindani is shackled to a corpse, or at least to a terminally ill being.” Whereas DOA was a colonial state, northern Mozambique remained under the control of the *Companhia do Niassa*, a company chartered by Portugal but controlled by British financial interests. The company focused on the extraction of profit, not the establishment of territorial sovereignty.²⁸ To the Germans, Mozambique was a relic of the disorderly era of informal African imperialism. The perceived neglect by the *Companhia do Niassa* made the frontier “practically nothing more than a line to limit our power,” and Mozambique served as “an asylum for all rogues and disgruntled individuals in the district.” Colonial maps delineated coherent territories, but the residents of the German colony simply forded the Ruvuma River that divided the two colonies to avoid the German tax collector as he entered the district, then returned after he had passed through.²⁹ African mobility, when combined with the porous border, confounded German visions of territorial sovereignty. In response, the Germans allocated scarce human and financial resources to establish state presence in remote regions of the colony, with little promise of profitable returns.³⁰

Meanwhile, the lack of unified territorial control created islands of colonial power, requiring German administrators to travel widely to govern. Away from the fixed and fortified government stations, the Germans exercised a nomadic form of governance, and the mobility of administrators and the German and Askari soldiers defined German rule.³¹ This dialectic of long absence and temporary presence made mobility both instrumental and symbolic as a form of political power. The patchwork of German officials across colonial space made their rule arbitrary and coercive, and the *Schutztruppe* performed theatrical acts of violence to inspire terror and encourage compliance in their physical absence.³²

The Promise of Colonial Roads

Given the importance of mobility and physical presence to the creation and maintenance of colonial order, German administrators focused on the development of roads to serve cart traffic at the turn of the century.³³ Rather than designing a new network, the Germans depended on preexisting caravan routes established by Arab merchants from the coast to the Great Lakes.³⁴ Officers led construction efforts, and Paul Graetz had been assigned to build a road from the coastal town of Lindi, near the southern border with Mozambique, westward to Lake Malawi, in the same districts where Zache conducted his administrative tour.³⁵ The Germans used forced labor to construct bridges and break rock for the roadbed, and the intimidation and violence involved in mustering labor deterred roadside settlement.³⁶

The Germans particularly worried about the unanticipated effects of the tropical climate on mobility. Hans Zache described crossing the dry bed of a river he called the Mohesi on December 22, 1899.³⁷ By December 25, after a period of what he categorized as “light” rains, a chest-high river now stretched almost a quarter mile across. Zache observed passing caravans, which were unable to ford the river after a six-day journey from Songea. After waiting for days for the water to recede, porters grew increasingly hungry and desperate. They attempted to cross the “raging river,” where half of them—some one hundred men—drowned.³⁸ On Graetz’s automobile journey some years later, he noted a similar experience crossing the hundred-foot-wide Malagarasi River in the northwestern part of the colony, which swelled to become a “lake” nearly two miles across after heavy rains.³⁹ For German officials who lived in an age of increasingly managed and tamed waterways in temperate Europe, the variability of the tropical environment reeked of barbarism.⁴⁰ In particular, the Germans remarked on the extreme variability of the African climate, which south of the Sahara boasts divergent seasons of heavy rains and extreme aridity.⁴¹ Swollen rivers inundated paths to make transport nearly impossible for months on end, while in the dry season the lack of water made long-distance travel perilous.⁴²

Such seasonal variations and the danger to lives, profits, and colonial security threatened by transport disruptions led the Germans to pour resources into improving the roads of the colony in the early 1900s. In 1900, Zache sought to manipulate the weak territoriality of the German colony and construct roads simultaneously in a particularly audacious scheme. He received news of expeditions into northern Mozambique undertaken by the *Companhia do Niassa*. These expeditions, aimed at occupying the territory, would harm the interests of Sultan Mataka, who exercised power in northern Mozambique. Zache predicted that these Anglo-Portuguese expeditions would lead the sultan to flee north to

DOA. Mataka's twenty thousand subjects would prove disastrous for the German administration if they arrived as "starving refugees." But Zache ventured that if the travelers were "steered to the right path," the holes in the Portuguese-German border could work to DOA's advantage by expanding "manpower" significantly.⁴³ Settling Mataka's people would bolster Zache's plan to create a "permanent road construction squad" in the district with a small number of salaried workers and one hundred rotating taxed laborers. Together this squad would create a coherent network of standardized roads within four years. This solution, Zache argued, would solve the two core questions of the district: "How can we build paths quickly and free of charge?" and "How do we implement compulsory labor among the over 7,000 tax shirkers of the district?"⁴⁴ Road construction, for Zache, was the key to pulling Africans into the tax regime and the administrative orbit of the German colonial state.

In September 1900, Zache drew up a treaty with Sultan Mataka laying out the terms of their agreement. The sultan promised to settle his subjects on the German side of the river within a year, laying out the boundaries of a zone called "New Brandenburg" for their settlement. Mataka and his people would be exempt from taxation through July 1903, but their migration would still support Zache's vision of colonial rule anchored in roads. Mataka agreed that his people would settle in six villages in New Brandenburg along two existing caravan paths that would be retrofitted to become German roads. In the process, Zache hoped to transform the roads into axes of administrative surveillance and control, part of a larger project described by the historian John Iliffe as "opening the country to more intensive European domination."⁴⁵ As Andreas Greiner has shown, the very act of organizing, constructing, and maintaining transportation infrastructures created leverage to intensify colonial domination and, German officials hoped, broadcast their power across the colony.⁴⁶

The collapse of the treaty reveals much about German perceptions of DOA and how colonial subjects continued to use mobility to their advantage. Governor Gustav Adolf von Götzen became livid when he learned of Zache's unsanctioned treaty in 1901. Sultan Mataka, Götzen claimed, would be surprised to learn of the significant administrative and tax obligations in DOA, particularly "considering the effectively low extent of power of the Companhia do Niassa," which at that time left Mataka's people "entirely exempt from similar requirements." The "cunning Arab" played both sides, Götzen claimed, seeking an escape path to German territory if his position in Mozambique became untenable, while also using his agreement with the Germans as a "trump card" in relations with the Companhia do Niassa. Götzen noted that the Portuguese and British also recognized the immense worth of Mataka's "strong tribe," particularly in the "sparsely populated landscapes of Africa." The German administration, Götzen

declared, should not and would not adhere to Zache's rogue treaty, which was far too beneficial to Mataka.⁴⁷

Götzen's reversal of Zache's man-on-the-spot attempt to recruit taxpayers and settlers around roads was an admission that strengthening state power, the interest of the Germans, was not to the advantage of colonial subjects. Zache was either too naive or too guileless to comprehend this reality. Mataka's advantage lay in the mobility of his people and the permeable border between the German colonial state and the Portuguese chartered company, which led both sides to compete to host Mataka and his people. Zache's treaty debacle typified the weakness of the colonial state and shaped the opinion in Dar es Salaam and Berlin that colonial circumstances must change. In the place of weak territoriality and porous borders exploited by mobile subjects, the administration had to produce territorial sovereignty and harness African labor and mobility to its advantage. With few German officials in DOA, the colonial state would have to increase the speed and radius of its rule through mechanized mobility.

Technocratic *Verkehr*

German officials determined that solving DOA's transport problem was the path to improved administration and economic development. The state secretary for the colonies, Bernhard Dernburg, a liberal politician and former banker, sought to rationalize colonial practice through reform. Following an East African tour in 1907, Dernburg noted that the colony's fundamental challenge lay in the development of rapid and economical transportation across massive spaces. Any colonial industry accrued tremendous costs: extraction; profits of the middleman as first buyer; freight from the interior to the coast; shipping, insurance, packing, and loading; freight from Dar es Salaam to Hamburg; export duties; shipping within Europe; import duties and handling fees for European agents; and finally, the profits of the producer. A colonial product justified export only if its value on the world market was higher than all these costs combined.⁴⁸ Taking ground-nuts as an example, Dernburg calculated that transporting the crop with porters would not prove profitable beyond approximately ninety miles.⁴⁹ Further, the small number of European settlers made for a minuscule domestic market in East Africa because men like Dernburg could not imagine Africans as potential consumers. In this framework most colonial industries were doomed.

The Germans blamed the "porter question" for the colony's various economic and administrative woes.⁵⁰ For Governor Götzen in 1901, the "overuse" of porters was "doubtless disadvantageous" from the perspective of the labor market because they did not engage in "productive" occupations such as working the

land.⁵¹ Meanwhile, porter transport appeared torturously slow, topping out at twenty miles per day.⁵² The Germans, like other European colonizers, also despised portage for moral reasons owing to its (erroneous) associations with slavery.⁵³ As Andreas Greiner has argued, such disdain made the German reliance on portage, and the accommodations made with porters who exercised a sort of “veto power” over colonial policy, all the more exasperating.⁵⁴ Finally, the movement of thousands of men across the territory created “a danger for the health conditions of the protectorate” and led to “the spread of diseases from the interior to the coast and back.”⁵⁵ Clearly, from the German perspective, the colony demanded a new transport regime.

Like Joseph Gallieni, Dernburg was an infrastructural evangelist. “In a land without fast means of transport, without telegraphic connections across enormous distances,” he opined, the German administration operated at a disadvantage. The capriciousness and violence of German rule were desperate and frustrated responses to the lack of manpower and the immense size of the colony. A colonial regime based on force and coercion, he argued, could never succeed, with only twenty-five hundred German troops and five hundred police spread across a territory twice the size of metropolitan Germany. Only colonization guided by “European science and technology” would entrench German rule and ignite economic development.⁵⁶

Upon taking office in 1906, Governor Albrecht von Rechenberg, a career diplomat who held previous posts in Zanzibar, Warsaw, and Moscow, oversaw a technocratic turn inspired by Dernburg’s report. For too long, Dernburg and Rechenberg believed, colonial policies had been dictated by overconfident white settlers who advocated the wide-scale adoption of plantation agriculture worked by the colony’s African subjects. Their racialized settler colonialism failed politically and economically. European land theft created political unrest that culminated in the Maji Maji Uprising (1905–1907), while the cultivation of cash crops such as cotton and coffee failed miserably.⁵⁷ Although intransigent settlers remained a thorn in the side of administrators in Dar es Salaam and Berlin, the Dernburg/Rechenberg regime turned DOA away from the settler-focused “plantation imperative” that had defined the colony since 1885 in favor of creating a trading colony that would connect “peasant-scale,” Indigenous agricultural production to markets outside the colony.⁵⁸

At the center of this statist vision of development lay *Verkehr*, a concept that became paradigmatic in Germany at the turn of the century.⁵⁹ *Verkehr* encompasses transportation, communication, and commerce simultaneously, and implied a totalizing and systematic approach to mobility and spatial planning, with a particular interest in infrastructures as tools of power and organization.⁶⁰ For Dernburg, the German colony had for too long depended on a precolonial

regime of *Verkehr*: porters, caravan paths, and the entire socioeconomic and political system that orbited it. Criminal elements and disease, which increased markedly as European companies and colonial administrations inserted themselves into East African trade, had transformed caravan paths into sites of danger and flight, not settlement and commerce.⁶¹ Recruiting porters absorbed enormous time and resources and became a constant source of frustration for German authorities.⁶²

The Germans had to introduce a new system. If animated by a rational and prudent plan to order space, Dernburg wrote, “an enormous section of the Protectorate will become directly integrated in *Verkehr*” through infrastructure construction. To reverse the sins of the localized, disconnected administration of previous decades (both lamented and exemplified by Hans Zache), “only a *Verkehrspolitik* informed by a deliberate, unified, economically minded viewpoint . . . can lead to the complete security and development of the protectorate.”⁶³ The failures of the colonial state to this point, Dernburg and Rechenberg suggested, emerged from the lack of modern infrastructure, which created a peripatetic form of German rule.⁶⁴

The German reformers shared with Gallieni a desire to remake colonial space through infrastructure, but they were far more skeptical of roads.⁶⁵ Partially, this emerged from the centrality of caravan paths to the precolonial order and their role in previous German failures. Because the Germans built on preexisting trade routes and caravan paths by retrofitting them to serve wagon and handcart traffic, roads appeared as a derivative and even failed infrastructure.⁶⁶ Rather than a single, planned path, Andreas Greiner describes “clusters of different smaller trails” produced by vernacular use.⁶⁷ The colonial geographer Johann Gottfried Benndorf argued that whereas African porters had succeeded in proper layout and line-development of paths in mountain areas because intense slopes made it almost impossible not to do so, the paths in the lowlands were poor, “irrationally built,” and products of the African’s lack of “a sure eye for the straight line” or “any geometric measurement.” Further, Benndorf criticized porters’ tendency to go around obstacles such as bushes and trees, rather than removing them.⁶⁸ Race, mobility, and the relationship to nature intertwined in this assessment. Modern *Verkehr* had to overcome nature, not submit to it, but colonial officials quickly determined that constructing and maintaining all-weather roads in the colony was cost prohibitive.

The continued use of porters in the colony also made such paths centers of African social and cultural life, as well as potential sites of resistance.⁶⁹ As a result, German road investments remained scanty. The first automobile-specific road was constructed only in 1910, and as late as 1913, “inferior road conditions” hindered the “naturalization of the motor vehicle” in the colony.⁷⁰ Surprisingly,

official reports and the colonial media published many photographs of roads to demonstrate the success of the German colonial project, but road construction in the colony remained localized and scattershot, not the subject of a unified plan.⁷¹ Roads thus helped shape the visual grammar of empire—order, mobility, control of space—without being central to administrative plans for development in DOA.⁷²

The perceived failures of the road regime and the German desire to supplant porter-based *Verkehr* led colonial officials to focus their infrastructure plan almost exclusively on railroads.⁷³ Germany's colonial reformers instinctively understood what Enda Duffy has argued about the culture of speed epitomized by the early automobile: "Territoriality mattered less than mobility," and the automobile symbolized "extraordinary personal power" rather than enduring state control.⁷⁴ Dernburg recommended "the concentration of frequently fragmented capital" on the construction of a rail network comprising six separate projects that would connect coastal ports to the Great Lakes region, with a particular focus on a central line from Dar es Salaam to Tabora, the nexus of the inland caravan trade. Dernburg described the railway as an administrative "necessity" because it scythed through the most densely populated areas of the territory that he deemed most prone to resistance. By entrenching German power through the center of the territory, the railway would allow for the eventual reduction of Schutztruppe in DOA, effecting the shift to stable administration. Constructing the railroad further west to Kigoma on the shores of Lake Tanganyika would also improve the colonial economy. It would serve densely populated Rwanda and Burundi, which following the opening of the British Uganda Railway in 1902 used British rails to the Kenyan port of Mombasa, allowing the British to capture freight fees, duties, and taxes from production in German territory. An east-west rail axis would thus align German territorial and economic goals by draining production toward Dar es Salaam while in the process freeing up "100,000, if not more" former porters to become peasant farmers.⁷⁵

For Dernburg, Rechenberg, and the entire colonial administration after 1907, the railroad would thus revolutionize DOA.⁷⁶ Theirs was a gambit to abandon the internally oriented development of the colony in favor of inserting it into a much wider network of *Weltverkehr*: world transport, world communications, world commerce.⁷⁷ In one fell swoop, it would displace the regime of caravan paths and portage, the delusional construction of a plantation economy dominated by white settlers, and the nomadic, coercive German administration that governed the colony. This vision of a railroad-based *Verkehr*, in all senses of the German term, cast roads as mere feeders to the rail lines. In contrast to earlier visions of German settlement, this program projected a trading colony defined by the evacuation of goods via coastal connections with select inland economic

nodes (in the Tabora district, Rwanda and Burundi, and the upland areas along the northern border with Kenya). The Germans began construction of the Central Railway in 1905 and redoubled financing in the wake of Dernburg's tour in 1907. On February 2, 1914, the Central Railway reached Kigoma, 778 miles from Dar es Salaam.⁷⁸

Seeing, Hearing, and Feeling like a Motorist

We can imagine Paul Graetz's disappointment that the German administration elected to create a colony of rails, with little place for the use of automobiles. Indeed, Rechenberg's administration politely declined Graetz's offer to operate a commercial truck service in 1907, seeing no potential for profit or use as a public utility.⁷⁹ Graetz had spent two years of his life leading road construction crews in Lindi, and the intervening three years planning his expedition, convinced that the car would solve the various territorial, administrative, and economic challenges of DOA. He wagered that automobiles were so mechanically powerful that they would not require the construction of a dedicated road network. He was so convinced of the transformative potential of the automobile that he believed that the car could single-handedly produce its own transformation of East African *Verkehr*, requiring only slight modifications to existing caravan paths.

Graetz planned well in advance of his departure from Dar es Salaam in the summer of 1907. In this era before the Fordist mass-production of vehicles, all cars were bespoke, artisanal products. Graetz's colonial experiences led him to request specific modifications, efforts that paralleled an ill-fated contemporary competition to encourage the development of a "tropical automobile" suited to the German colonies.⁸⁰ Graetz began conversations with automobile manufacturers in 1904, settling on the Süddeutsche Automobilfabrik in Gaggenau, not far from Carl Benz's workshop in Mannheim. The company designed a thirty-five-horsepower, four-cylinder motor, while the Neuss company of Berlin built a body for the vehicle.⁸¹ The lack of motorable roads in the colony demanded high ground clearance to avoid catching on rocks, stumps, and termite hills. The complete absence of support infrastructure such as fuel depots and repair shops required the vehicle and its traveling party to be self-sufficient. The manufacturer designed a tank beneath the back seat to store sixty-six gallons of gasoline, and the forward tank held a further thirty-three gallons. A storage compartment held four reserve tires, canned food, and camping supplies. Graetz imagined Africa as a fecund land of near-infinite game and planned to live off the land.⁸² The length of the expedition and the administration's lack of support required that Graetz create his own supply infrastructure. He arranged delivery of supplies to

twenty-four dumps in the German and British territories, including nearly sixteen hundred gallons of gasoline, fifty-three gallons of oil, twenty-five tires, and thirty-three inner tubes.⁸³ To prevent theft, the supplies were buried and marked by a cross, as on a grave, labeled "Graetz."⁸⁴

Graetz's preparation for the crossing was not only time-consuming but expensive. He estimated the total cost of his journey, including equipment, supplies, transit, and salaries for his support team at 75,000 gold marks. Graetz vehemently denied accusations that his journey was a publicity stunt, assertions that led him to omit the name of the car and tire manufacturers from his book. Graetz offset some of his costs by selling exclusive coverage of the expedition to the *Daily Mail* of London but lamented that "not a single German newspaper expressed interest in my traverse."⁸⁵ The colonial press in British settler colonies published updates of Graetz's crossing based on wire reports from the *Daily Mail* and his activities locally, including a brief dustup in Johannesburg, where he was arrested for debts to an outfitter that he accrued in Bulawayo, Southern Rhodesia.⁸⁶ Automobility forged transimperial ties, and Graetz repeatedly noted his "kindly" reception by British authorities and his warm welcome into high society in Bulawayo, Johannesburg, Livingstone (Northern Rhodesia), and Victoria Falls (Southern Rhodesia).⁸⁷ Conversely, the tepid interest in Germany suggests that the metropole lacked a certain colonial fervor, as the colonial enterprise remained of only secondary interest in everyday German life.⁸⁸

As Graetz drove across Africa in fits and starts, the car framed his experience and understanding of the continent and its peoples. The historian of the automobile Gijs Mom has described the mindset of early driving as "colonial," marked by anthropological engagement with the other (touring into novel or unknown areas, often creating the perception of traveling back in time) and aggression (invading new spaces, competing with other drivers and pedestrians). Mom thus identifies an "imperialist" bearing of drivers that defined all early car cultures.⁸⁹ But when Graetz and other Europeans drove the automobile in Africa, it was not metaphorical "imperialism"—it was the real thing. Nor was it simply derivative of metropolitan automotive culture. The interaction between European drivers, African peoples, and frontier spaces shaped colonial relationships and drivers' perceptions of people and place. Graetz had little previous knowledge of the lands and peoples he contacted across his six-thousand-mile journey. Instead, he developed his understanding of Africa on the move. He registered bodily and sensory perceptions formed "under the tropical sky of Africa" and "the distinct splendor of the southern constellations" while traversing "pristine forest wilderness . . . lushly fertile pasturelands and destitute sandbars . . . incalculably wavy grass steppes . . . on fossilized seas and in wide, bottomless swamps . . . in the clamorous bustle of the jungle, as in the oppressive silence of the desert."⁹⁰ In

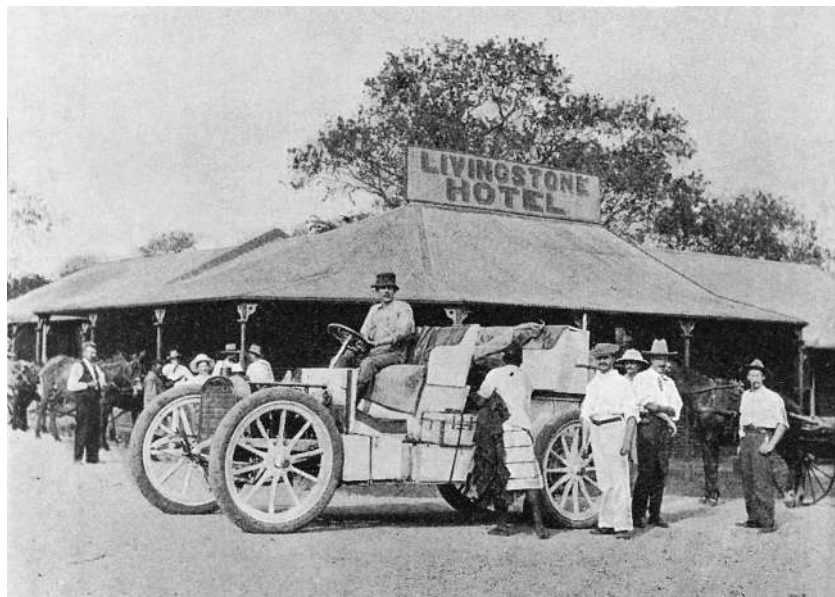


FIGURE 2.5. Paul Graetz's automobile in front of the Livingstone Hotel, Northern Rhodesia, 1908. Source: Paul Graetz, *Im Auto quer durch Afrika* (Berlin: Gustav Braunbeck & Gutenberg, 1910).

these descriptions, Graetz seized upon the prewar use of the automobile as an “adventure machine” in a struggle with nature and his own limits.⁹¹

Graetz formed his knowledge of Africa kinesthetically, creating embodied perceptions from behind the wheel.⁹² Graetz's experience of driving was historically specific, a product of the meanings of the car as a pre-Fordist luxury item and the technical capabilities of that era's automobile. Graetz's car had neither roof nor windshield and, like most cars of the era, was more an open “clamshell” than a cage of metal and glass (figure 2.5).⁹³ It exposed the traveling party to the elements and, in contrast with later experiences of driving, engaged not only the eyes but also travelers' senses of touch, hearing, and smell. Graetz's journey thus must be understood as a multisensory experience that connected body and mind and mediated among the driver, the technological apparatus of the car, and the surrounding environment.⁹⁴

The raw power of the early automobile overawed its users. The unreliability and unpredictability of the new technology led drivers to describe it as wild and untamable. When operating the car successfully, drivers often described the fusion of man and machine, endowing the car with human faculties of agency and sensory perception, while the car became a prosthetic extension of the

human body and mind, imbuing the driver with godlike faculties.⁹⁵ The environmental and political contexts of colonial Africa only heightened the automobile's entwinement of mobility, perception, and emotion.⁹⁶

When he recounted traveling at speed, without mechanical failures or environmental obstacles, Graetz rhapsodized about the car and the land, and visual descriptions and experiences predominated.⁹⁷ After Graetz's lengthy delay in Kilosa, the party continued the expedition in late November 1907. In the first days of December, the car departed the German fort at Mpwapwa in the central Dodoma district. The travelers climbed the nearby Chunyu Mountains with ease. At a vista, Graetz took in the "singularly beautiful landscape," overlooking "the wide, nearly endless plain, flat like a tablecloth," framed by mountains on either side. The automotive experience of the landscape led him to understand this remote area not merely as German territory. Instead, Graetz claimed the contested space as German in the spiritual and romantic terms of *Heimat*.⁹⁸ He gushed, "The earth wore German colors, black-white-red. Black was the dried-out swamp soil, full of cracks and bumps. White the chalk and sand, in which the automobile could only laboriously continue to operate in first gear. Red, however, the solid soil of the Udongo clay, hard and smooth like asphalt."⁹⁹ While he was on the move, and from his Olympian vantage, the Germanness of the Dodoma district appeared clear. In Graetz's description, the drivability of the land defined each of the "colors" of the landscape, which echoed the colors of the Imperial German flag, the automobile conditioning his perception and emotional engagement.

Speed often framed Graetz's descriptions and his understanding of the continent. The car, modified to trek across the continent, was slow by today's standards and generally traveled slower than an average train. But it was not raw speed that shaped the driver's perception. Rather the sensation of "speed difference" defined the early experience of the automobile.¹⁰⁰ Driving a car without a windshield or roof, along with the bumps and shocks absorbed while traveling on caravan paths, made the car *feel* fast and powerful. Graetz often "felt" the landscape through the car, and his moods and perceptions depended on his driving experience. In early 1909, in the latter stages of the expedition, Graetz's party drove in the British Bechuanaland Protectorate toward the Kalahari Desert. Finding that "the actual route was undriveable," Graetz's party slogged through the Kolikoma Depression, a four-mile section of swamp that taxed the motor and frayed Graetz's nerves. As they drove onward, Graetz wrote, "the drive was now monotonous, the landscape took on a uniform character, tedious thornbushes to the right and left of the sandy or swampy route, mile after mile." He continued, "The auto crept forward in first gear, following the numerous meanderings of the deeply furrowed path." In contrast with Graetz's reveries of the Chunyu

Mountains, the swamps of Bechuanaland limited the power of the automobile. The landscape forced his chauffeur to snake around obstacles, an offense against the rational, straight-line efficiency that Graetz preferred and a troubling evocation of the portage regime that he sought to supersede. Finally, this section of the journey was not only slow but wasteful. The struggles advancing through deep sand made the trip extremely inefficient; whereas the car averaged six or seven miles per gallon of fuel on good roads, the sands and swamps of Bechuanaland devoured a gallon for every mile traveled.¹⁰¹ In contrast, after days of slow movement, Graetz became rapturous when he encountered the Sukutsa salt flats in Bechuanaland. Graetz found a certain beauty in the barrenness of the landscape, but most importantly, the wheels of the car gripped the firm ground of the salt flats “like I had never experienced, neither in the well-macadamed streets of Europe, nor on cement or asphalt.”¹⁰² The car sped along in third gear, and the contrast with the previous crawl through the swamps electrified Graetz.

In this episode, Graetz suggests how automobility began to reframe ideas of useful land in Africa. The salt flats had no apparent resources that could be used for survival or mined for profit, but the smooth track and lack of obstacles made the area immensely valuable as a transport corridor. Automotive experiences thus reconfigured perceptions of Africa as abstract space to be crossed and consumed. Orienting colonial transport around such “third gear” landscapes would save time and money on road or railroad construction and therefore allow colonial administrations to overcome Africa’s immense scale. Moving at speed produced overwhelmingly visual descriptions of Africa that highlighted romantic landscapes but also abstracted Africa as space to be crossed, collapsed, and conquered. The automotive visual sense, as with the colonial “gaze” more generally, empowered the European traveler.

But as a form of embodied experience and perception, the automobile engaged all senses. The sounds of car travel were more complex. In contrast with the hundreds of anonymous Africans referenced in the travelogue, Graetz’s “white colossus” speaks. After his long delay in Kilosa, Graetz proclaimed that “an automobile without a motor is a soulless corpse,” but that repairs had reanimated it. When the engine fired up again for the first time, Graetz described its sounds as “the most magnificent music.”¹⁰³ The car’s sounds also echoed the violence of colonial rule. The operations of the motor in the damp morning broke the silence like “whiplashes.”¹⁰⁴ In a colony in which public whippings were a preferred form of state punishment, the automobile *sounded* like colonial power.¹⁰⁵ Graetz himself knew the power of corporal punishment, he implied, when he complained that his voice became hoarse yelling orders at the “timid” Wawinsa of the Tabora district, who “did not tolerate blows.”¹⁰⁶ The sound of the automobile became central to Graetz’s colonial presence. He proudly noted that the Indigenous residents

of British territories baptized the car “Tucke-Tucke,” an onomatopoeic rendering of the sounds of the idling engine. Graetz proudly adopted the moniker Bwana Tucke-Tucke, master of the automobile, an act of self-mythology that echoes the explorer Henry Morton Stanley’s Congolese nickname, Bula Matari (Breaker of Rocks).¹⁰⁷ In Africa, the sounds of the automobile, the hegemony of the driver/imperialist, and the coercion of the colonial system reverberated off one another.

Driving in Africa conveyed embodied experiences and emotional reactions of fear and frustration as much as exhilaration and power. Visual descriptions and the bodily experience of speed dominated Graetz’s descriptions of driving. But when he was forced to slow or stop, other senses dominated. Immediately after his extolling the beauty of the Chunya Mountains, the car slowed in the lowlands, and biting flies surrounded the vehicle “like a thick crape.” Graetz expressed his terror: “They crawled in our noses, eyes, and ears with the singular malice of African creatures. But in Africa everything is malicious.” Graetz’s Africa was a land of bodily horrors, and he lingered on the African sand flea that burrowed into fingers and toes, often requiring amputation of the afflicted digits. On the shores of Lake Tanganyika, a tick-borne illness robbed Roeder of his ability to speak for a lengthy period. On numerous occasions, the traveling party suffered under the attack of mosquitoes, which “sought and always found a way under the blankets,” and “the whistling, stinging, and itching was so nerve-racking and incessant that one could not get to sleep,” making the nights “seemingly endless agony.” To Graetz, the malarial mosquito “inhibits the development of the colony more than millions of rebellious blacks and all of the unified anticolonial parties in the Reichstag could.”¹⁰⁸ Prolonged immobility bred desperation and disgust, engaging the sense of taste. For those stranded and desperate for water, thirst “drives one to madness,” and “even the dirtiest, foulest water, mixed with mud, is perceived by the thirst-crucified body as refreshment.” When stuck in Rhodesia, Graetz and his companions became so desperate that they “easily overcame disgust” and guzzled “a tangibly thick pulp . . . colored dark green and brown” from a waterhole frequented by apes and littered with their excrement.¹⁰⁹

Traveling at speed shielded Europeans from the frustrations and dangers of Africa’s fauna and landscapes, as well as unwanted interactions with colonial subjects. When able to move at speed, Graetz and other driving imperialists stressed the penetration and possession of colonial territories in gendered terms. When driving slowly or stopped, the pleasure of visual distance gave way to the misery and fear of physical presence, embodied through the sense of touch and expressed through violations of the European body, and often leading to the desperate and demeaning engagement of taste. Colonial driving was thus a sensuous experience that defined Graetz’s emotional highs and lows. He began his journey with faith that the automobile would create its own system of *Verkehr*,

largely liberated from roads. His act of entrepreneurial imperialism, he believed, would inspire the colonial administration to empower countless automotive entrepreneurs. A central lesson of Graetz's frustrating 630-day expedition was that roads and support infrastructure needed to be constructed to protect drivers against becoming stranded, while improvements to the car were necessary to avoid breakdowns. If these things could be accomplished, Europeans would not only save time but also avoid the corporeal and spiritual perils of the colonies.

The Automobile as Tool of Empire

The slowness of Graetz's journey was a product not only of the scale of Africa's spaces but also of the power of its tropical climates and varied landscapes. Transportation infrastructures smooth environmental variations, bridging over rivers and cutting through mountains in the name of regularity, efficiency, and predictability. Beyond colonial towns, Graetz's crossing depended on caravan paths, but the party also often cut its own trail. The experience of driving in Africa without European-built roads framed Graetz's travelogue, as so many works of African exploration, as a struggle of civilized, European man against wild, African nature.¹¹⁰ Europeans had drawn strict ideological and material boundaries that separated nature from human endeavors, a framework that underlay their ideas of infrastructure and mobility. The German geographer Benndorf had noted the porter's tendency to navigate around natural obstacles, an attitude that simply would not do for the European. Graetz traveled with dynamite in the trunk of the vehicle, and it seems miraculous that the bumpy ride did not detonate this bomb on wheels (recall that the gas tanks carried nearly one hundred gallons of fuel as well). In DOA, Graetz described a four-hour "battle of annihilation" as he blasted his way up a mountain in the Morogoro district. The traveling party sought to tame African environments so that the technological advantages of automobility could operate on the continent.

Graetz described nature's disruption of his driving endeavors. In the central Tabora district, he praised the "lush prosperity" of "the African spring in its glorious splendor." The ability of the car to chart its own path allowed it to navigate through tall grasses, suggesting conquest. The grass, however, concealed rocks and tree stumps, and as they advanced toward Lake Tanganyika in the Ujiji district, a stump rammed the flywheel and left the traveling party "stuck in the middle of the wildest wilderness." As they were forced to make camp for the night, a thunderstorm pelted them, mosquitoes descended for their meal, and boredom and frustration set in. In the morning, a passing man from the town of Uvinza offered his help and returned with over sixty comrades, helping to

pull Graetz's "Devil's Carriage." Graetz then complained that this advance was "terribly slow, not half as fast as a pedestrian."¹¹¹ The automobile promised the conquest of nature but took Graetz and his fellow travelers just far enough to leave them stranded when it struck a hidden obstacle. Then the power of nature assailed the traveling party and once again forced Graetz to depend on the help of passing Africans, leaving him at once humbled and frustrated, if not particularly self-aware. As the stated goal of Graetz's journey was to free the Germans from dependence on human muscle power, and thus African labor, by proving the usefulness of the automobile to transport people and freight, the environment's repeated disruption of the expedition proved troubling.¹¹² Indeed, even when the automobile functioned, on many occasions the chauffeur or African aides would simply walk in front of the car to verify that the path was clear.¹¹³

Water created a particular impediment. The former roadbuilder lamented the "primal force" of tropical storms, the tremendous "destructive power" of which could "annihilate many months of work by a road construction expedition in one blow."¹¹⁴ But it was the lack of purpose-built roads and bridges that crystallized the power of African nature to frustrate European colonialism. As Graetz drove through Northern Rhodesia in February 1908, he reflected, "When the motorist back home speeds down the highway at 50 kilometers per hour, he has no time to pay attention to the many bridges and culverts that fly beneath him. The fixed stone pillars allow no thoughts of any kind of danger from crossing rivers to arise. . . . What a contrast to circumstances here, above all in this season, where every single day, heavy tropical rains drop buckets of water over the landscape, transforming every little subsidence into a pond, every trickle into a creek and creeks into streams! The spongy valley floor becomes a quagmire, soft earth an abysmal swamp!" On the 125-mile path from Abercorn to Kasama, no fewer than twenty-eight rivers interrupted their journey, all spilling over their banks to create amorphous marshes and soggy passages that threatened to strand the car and exposed the travelers to insect-borne fevers and poisonous snakes. Rather than delaying, Graetz resolved to "defeat the elements with human creations and perseverance."¹¹⁵ As this passage suggests, the colonial car did not distance drivers from nature; instead it brought them into close contact with it. Whereas the metropolitan driver was blithely unaware of how infrastructures channeled and tamed the environment, the lack of motorable roads in eastern and southern Africa made the entire 630-day trip a struggle with nature. It also indicated to Graetz and his reading public how much work remained to be done.

The driver as imperialist engaged not only with African landscapes, but African peoples. The architecture of the car, even as an open "clamshell," separated Graetz's party from those among whom they traveled. Like other colonial expeditions, Graetz's crossing enacted colonial socialization and categorized colonized

peoples.¹¹⁶ Photographs from the journey (more than 230 of them appeared in the printed volume) shed light on this automotive anthropology. In Tabora, a photograph taken from a high angle atop a building depicts Graetz's self-perception, with hundreds of men following behind the vehicle, while others line the road to serve as an audience for the heroic driver and his automobile. As the caption describes it, the crowd "runs and hops around and behind the car," at once fascinated by and submissive to the technological "white colossus" and its master, Bwana Tucke-Tucke. In reality, the crowd behind the car appears static and staged (figure 2.6).

Another photograph, taken outside Windhoek, the capital of German Southwest Africa, depicts the car passing a native reservation established by the Germans to surveil and control Indigenous communities by rendering them immobile.¹¹⁷ A few figures are barely visible milling about amid a cluster of rounded huts, and the photograph's perspective shows dozens of these dwellings, with little distinction among them, stretching to the rear of the frame. Graetz's documentation of his interaction from the car establishes the relations of mobility and immobility that German colonizers used to define the colonial order. On the road a small child regards the car; the child's face is obscured by the poor

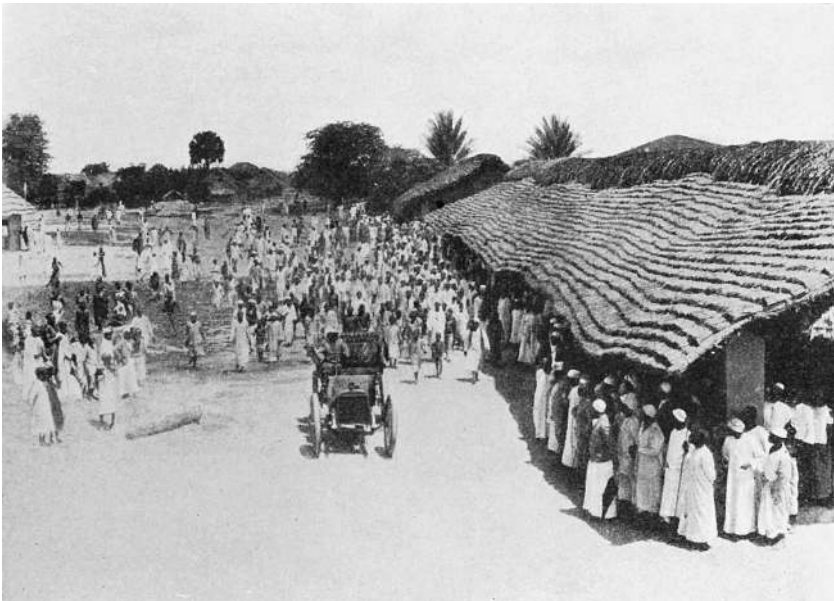


FIGURE 2.6. Paul Graetz parades in his automobile in Tabora, German East Africa, 1907. Source: Paul Graetz, *Im Auto quer durch Afrika* (Berlin: Gustav Braunbeck & Gutenberg, 1910).

quality of the old photograph. The child stands alone, and the faint outline of multiple tire tracks and the dead end at the middle left of the frame indicates that Graetz's party drove up and back. The child, who appears to be watching the motor vehicle and its traveling party depart, serves an ornamental function in the photograph, stamping Graetz's travels as authentic and exotic.¹¹⁸ In this image we see the driver's perception of crude ways of life and static forms of existence—people and places from another time entirely—as the modern automobile rolls away.¹¹⁹ The raised carriage, mechanical power, and enveloping architecture of the colonial car meant that the driver performed these relations daily in the colonial setting (figure 2.7).

The material and symbolic power of the automobile made Graetz's interactions with African peoples particularly meaningful. We have seen the many occasions in which Graetz called upon their labor, with African landscapes described as empty and Africans appearing as inert until the car's failure renders them necessary and Graetz's initiative makes them useful. The constant dependence on African labor—to carry the car's contents across rivers, to test the strength of wooden bridges, to push the car, to pull the car, to clear paths and build makeshift

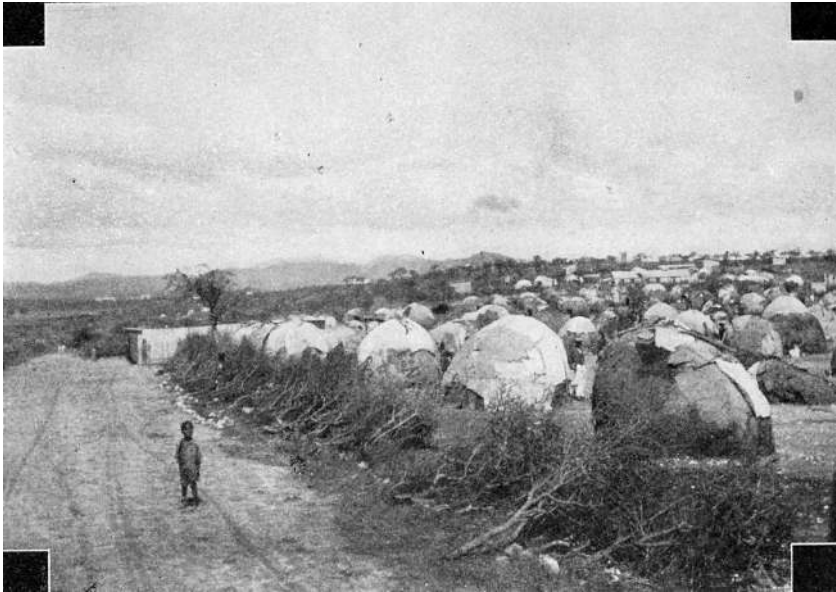


FIGURE 2.7. An automotive view of a “native reservation” established by German authorities outside Windhoek, German Southwest Africa, 1909. Source: Paul Graetz, *Im Auto quer durch Afrika* (Berlin: Gustav Braunbeck & Gutenberg, 1910).

roads—gives lie to the myth of the all-conquering automobile, let alone the dream that the car could transform colonial governance.¹²⁰ Nevertheless, Graetz's vehicle received far more humanized characterization than the African workers who made his journey possible, whose labor Graetz often obscured in the passive voice, as when he wrote in Northern Rhodesia, "Bit by bit the road was cut through the thick bush and was followed slowly by the automobile."¹²¹ Only a handful of African chiefs with whom Graetz parleyed are named, their existence in the travelogue notable only for their capacity to help the German solve automotive problems. Graetz's travelogue otherwise largely obscures his dependence on local communities for food and directions, as well as the political power wielded by Indigenous chiefs, whose permission to travel through their domain Graetz surely required. The contrast between the silence surrounding Graetz's interactions with African chiefs and his warm descriptions of relations with British colonial functionaries in southern Africa is stark.

The one exception is the person of "Mzee," a Swahili honorific meaning "elder." Mzee, the mission's "factotum," is one of the only Africans named and personified in the travelogue. The division of labor in the traveling party was as follows: the chauffeur took care of the car, Graetz and Roeder directed the expedition, and Mzee took care of the white men by cooking, cleaning, and packing. Mzee's role, then, was that of attendant, and he skillfully anticipated the needs of the travelers. When the car broke down in the Ngomberenga River, Mzee purchased chickens from nearby residents and cooked a meal. But he was more than a mere steward. Mzee served as an intermediary between Graetz and the various Indigenous societies he encountered. In Northern Rhodesia, when the car ran out of fuel, Graetz and Roeder sheltered in place while Mzee forged ahead as "a pioneer with a work column" to cut a road for the expedition. Further along, the party came across two men who feared the car and fled. Mzee, with his "superb talent for languages," reassured them and plied them for information about the best way to proceed.¹²² Graetz expressed a real affection for Mzee, and without his labor, knowledge, and savvy, the expedition would have been doomed.

Mzee's role illuminates much about the dynamics of automotive empire. Mzee's relations to the car itself suggest Graetz's investment in it as a technological symbol of European superiority. In photographs, Mzee only appears at a distance, and only rarely, but always in the back seat. Before Graetz even departed Dar es Salaam, he realized that the car was overloaded and jettisoned inessential equipment, including the tent and camp bed. For two years, Graetz and Roeder slept on the vehicle's benches, and the chauffeur set up a cot near the vehicle, while Mzee "made camp beneath the car."¹²³ The body of the car shielded Mzee from the elements, but the custom-produced automobile still only had fourteen inches of clearance. Mzee thus slept on the ground, in a tight space that reeked

of oil and gasoline. The delicate choreography of the Germans inside the car and their African aide underneath reveals the expedition as an ongoing enactment of colonial socialization: colonizer and colonized, man and technology.

The sense that the automobile was a European possession, not a narrowly national one, led to countless opportunities for international collaboration. Graetz's expedition traversed British and German territories, bringing the two empires into contact. But the automobile also became a generic symbol of European power, technological modernity, and civilization. In Northern Rhodesia, the Scottish African Lakes Corporation provided Graetz with supplies, and agents of the company boarded the traveling party in their homes. In Mpika, the assistant magistrate of the British South Africa Company, Frank Melland, hosted Graetz and hung a portrait of Kaiser Wilhelm II to welcome the Germans. The Transvaal Automobile Club in Johannesburg provided access to the South African elite, which allowed Graetz to deliver lectures and procure funding to complete his trip. In sharp contrast to his instrumental relations with the Indigenous Africans who aided his journey, Graetz effused that Britons, "whether civil servant or soldier, farmer or missionary, hunter or globetrotter," welcomed him and supported his mission however they could.¹²⁴ The car not only brought the former German officer into British territories, where he came to appreciate their hospitality and common interests, but also brokered those warm relations. British officials and private citizens helped him locate workshops to repair the car, recruited chauffeurs and mechanics, laid out linens, and hosted galas to fete Graetz's accomplishments.¹²⁵

Paul Graetz successfully crossed Africa by automobile, but his effort failed in both the entrepreneurial and the imperialist senses. In May 1909, following endless delays and dependent on the labor of hundreds of nameless men across southern and eastern Africa, Graetz touched his wheels to the Atlantic Ocean in the port of Swakopmund. He received congratulatory telegrams from Kaiser Wilhelm II and King Edward VII of Great Britain, and the kaiser greeted Graetz upon his return to Germany at the harbor in Hamburg. But Graetz's attempt to blend the appeal of the automobile, the exoticism of empire, and the public enthusiasm for exploration and adventure fell flat. In the realm of colonial exploration, writes Mary Louise Pratt, "lots of money and prestige rode on what you could convince others to give you credit for."¹²⁶ Despite the fact that he was the first person to traverse Africa by automobile, Graetz's crossing failed to capture the attention of metropolitan audiences and colonial officials alike. Graetz's expedition was before its time, as the colonial automobile had little purchase in German mass culture before World War I, despite the omnipresence of colonial themes in advertising and consumer culture.¹²⁷ Colonial automotive spectacles would only begin to capture the attention of the metropolitan public in the 1920s, when

African colonialism, European automotive culture, and mass culture were all further developed and more tightly integrated.

After Graetz left the Schutztruppe in 1904, his subsequent career comprised a series of hackneyed attempts to garner fame and fortune by pairing transport technology and imperial exploration. He crossed Africa by motorboat in two stages in 1911–12, naming the boat “Sarotti” after the German chocolate brand that sponsored him. In 1913, Graetz sought to organize a photographic survey of German New Guinea by zeppelin.¹²⁸ He failed to attract government support, and the scheme collapsed before unified media, scientific, and administrative skepticism that bordered on derision.¹²⁹ His memoir of his African adventures, published in 1943, bore the derivative title *Mein Büffelkampf* (My struggle with the buffalo; Graetz’s face had been lacerated by a water buffalo on his motorboat expedition), an attempt to capitalize on the title of Adolf Hitler’s *Mein Kampf*.

In a wider, imperialist sense, Graetz’s expedition failed as well. For all of Graetz’s smugness when overtaking porters by automobile, European cars and colonial roads could not compete with the reliability, flexibility, and ubiquity of caravan portage in East Africa before World War I.¹³⁰ The historian Edward Berenson argues that imperial celebrities possessed a charisma born of their ability to change the expectations of their metropolitan audiences; on this count, Graetz’s crossing emphatically failed.¹³¹ By 1914, DOA possessed only six cars, five trucks, and fifteen motorcycles; it was, definitively, a German railroad colony that remained dependent on portage.¹³² The automobile evoked power and domination, but Graetz’s expedition took fifteen times longer than he had predicted because the car’s shortcomings limited its applications as a tool of empire. It certainly appeared unsuited as the anchor of a new system of colonial *Verkehr*. Graetz’s vision of automotive empire was a desperate attempt to salvage the German colonial project, a futile techno-fix for an intractable political and administrative situation. Fundamentally, Graetz (and many other contemporary enthusiasts of the colonial automobile) misunderstood the nature of technology in the colonies. Whereas the advantages conferred by the Maxim gun or tropical medicine were literally a matter of life and death for colonizers and colonized, the speed and weight of the automobile created perceptions of supremacy that did not translate to the actual entrenchment of administrative rule or territorial control. Graetz’s expedition proves that the power of the prewar colonial automobile was cultural and symbolic, but not material or durable.

When war broke out in August 1914, the chronic porousness of DOA’s borders and the lack of transport development made for a highly mobile conflict. Allied imperial forces (mostly African troops commanded by the British, Belgians, and Portuguese) pursued German general Paul von Lettow-Vorbeck’s troops on foot thousands of miles across DOA, Mozambique, and Northern Rhodesia. With few

roads or motor vehicles and only scattered rail lines, the campaign depended on somewhere between eight hundred thousand and one million porters.¹³³ The British, attempting to use mobility to their advantage, deployed motor vehicles (especially Fords) but encountered “the immense work of motor transport over roads that are not roads.”¹³⁴ Graetz’s experiences foreshadowed their frustrations, and both sides remained dependent on the precolonial regime of *Verkehr*.

For the Allies, the East African front quickly became a road construction campaign, much as Madagascar had been for the French two decades earlier. The British organized road corps drawn from the ranks of porters, while residents of northern Mozambique under the control of the Companhia do Niassa were forced to serve as porters and roadbuilders.¹³⁵ W. W. Campbell, a British truck driver, wrote, “All manual labor was done by the natives. Paths were cut through the virgin forest, trees felled and carried away, the banks of gullies smoothed out for the passage of transport. . . . Motor transport was loaded up and unloaded by natives, and at the point where motors could go no farther natives carried supplies to the troops.”¹³⁶ As in Graetz’s travelogue, the passive voice privileges roads and motor transport while obscuring African agency. Because of poor working conditions, malaria and dysentery ravaged the workers’ ranks, killing 2 percent of the workers each month, with a further 15 percent lost to “wastage” (physical incapacitation or desertion). Somewhere between one hundred thousand and three hundred thousand porters/roadbuilders died during the war.¹³⁷ The Allied forces could never gain traction with their motorized columns and pursued Lettow-Vorbeck’s troops across East Africa until late November 1918, when he surrendered upon receiving news of the armistice.

For the British, immobility bred frustration and worry, whereas the ability to move at speed served as a mark of racial distinction and had significant emotional benefits. Campbell wrote, “It was really a relief to take charge of a car and get away from that rather low-lying, muggy spot, fouled as it had been by the recent presence of black troops, and smelling as it did of rank and dying vegetation. Depression vanished with movement through the fresh morning air, the breeze coming to one’s brow and nostrils as a tonic.”¹³⁸ Such a passage could have easily been written by Paul Graetz. In these early years, there was a certain universality of the experience of driving in colonial Africa. The automobile put European bodies in motion. They understood African landscapes and peoples through European values of mobility, speed, and technological modernity, while creating sensuous, kinesthetic knowledge mediated by the car.

The East African campaign revealed that the transport problems that inspired Paul Graetz’s expedition still existed in 1918. The size of DOA and its low population density demanded mechanical forms of locomotion to extend colonial power. Cars could theoretically travel anywhere, whereas railroads were expensive and

time-consuming to build, fixed in space, and easily targeted by enemies, whether anticolonial Africans or European imperial competitors. A form of automotive empire built around the technological prowess of the car promised a simple and relatively inexpensive solution to the problems of administration and development by expanding the spatial reach of the colonial state and imbuing colonial territory with its sovereign power. Graetz's belief that DOA could be an empire of cars without roads proved ill-conceived, as the German administration determined that the automobile would be unreliable without roads and varied support infrastructures. The British, who would administer the former DOA as the League of Nations mandate of Tanganyika after the war, found out as much during the conflict. The seasonal limitations of roads and the technological shortcomings of automobiles made the East African mobility regime a multimodal one that continued to rely on the flexibility of portage, at least in part, well into the 1940s.¹³⁹ In East Africa, the failures of Graetz, and later the British, to develop automotive empire without first developing roads reveal the distance between the colonial driver's perception of conquest and power and his inability to create enduring change. The pursuit of automotive empire required new models. But their failures also pointed toward new possibilities and more ambitious plans, ones that would be pursued in the sands of the Sahara by French military officers and automotive manufacturers after World War I.

REINVENTING THE WHEEL IN THE FRENCH SAHARA

On January 31, 1922, Monsieur Danjau of Moteurs Baudouin wrote to Gaston Boulogne, the director of Algeria's sprawling Southern Territories. Danjau, the Algiers agent of the Marseillais car manufacturer, sent Boulogne a copy of his 1920 book on colonial automobiles and motorized Saharan crossings, authored under the pseudonym Marcel Jandau. Danjau also offered his services to the director, sharing information on Baudouin's diesel motors and their potential use in North Africa. The letter, slipped inside the front cover of the book held at the French colonial archive in Aix-en-Provence, was apparently eagerly received.¹ Markings fill the book from cover to cover, indicating that Boulogne's administration took great interest in the potential of motor vehicles in the Southern Territories in the early 1920s. A quick glance at the administrative map demonstrates why: covering 765,157 square miles of mountainous terrain and a large swath of the Sahara, the Southern Territories were nearly four times larger than metropolitan France and comprised over 80 percent of Algeria (figure 3.1).²

Danjau's book argued that the time had come to motorize North Africa. Although the well-heeled European population of Algeria had taken to the car much like their metropolitan brethren, there were few practical applications of motor vehicles beyond the urbanized Mediterranean littoral. World War I in North Africa, Danjau wrote, had proven to the world that the colonial automobile, far from an elite plaything, was an "extension of the railway" and "one of the prime factors of civilization." He enumerated the military benefits of creating regular automotive services in the Sahara, including supply, patrol, and ambulance functions, all of which would allow the French military to maintain



FIGURE 3.1. Algeria and French West Africa, early 1920s. Map by Di Shi.

security while deploying fewer personnel. But the benefits of motorization went well beyond the military to economic development. “Commerce,” he wrote, “is a function of maritime and terrestrial communications,” and a glance at the map of the Southern Territories revealed “the insufficiency of the arteries to supply life to such a body.” Following France’s financial sacrifices in World War I, railroads

were simply too costly and time-consuming to construct. Economic reconstruction demanded that France find in its “colonial riches the means to fix the disequilibrium of its credit on the international market.” For Danjau and many French colonial officials, the clearest path to colonial development lay in creating regular land transport to connect “our two rich basins of North Africa [Algeria and the protectorates of Tunisia and Morocco] and French West Africa” (Afrique Occidentale Française, AOF), a massive federation comprising eight colonies. Between them stood the mighty Sahara. In the desert, “automobile convoys must replace [camel] caravans” to serve commerce, while cars and roads pushing deep into the Sahara would transform North Africa into a touristic center on par with the Alps. From security and public health to commerce and tourism, the necessity was clear: “the automobile, elder sister of the airplane, must revolutionize colonial life.”³ French Africa had to become an automotive empire.

But how? In 1920, Danjau recommended a trans-Saharan rally. Known in French as a *raid*, this technological endurance test in extreme conditions was suffused with the military connotations of a rapid incursion into enemy territory to gather reconnaissance. A successful *raid*, he claimed, would stimulate the development of “a truly colonial car” to replace existing “bastard models” that merely raised the vehicle’s chassis to increase ground clearance (although not explicitly referenced, Paul Graetz’s car represented one such model).⁴ Moteurs Baudouin was but a minor player in the automotive industry, but Danjau’s letter to Boulogne sought to integrate private initiative with public projects, anticipating the interwar dynamics of France’s automotive empire. Various stakeholders agreed that motorization was an urgent necessity, but as the stumbles of Joseph Gallieni and Paul Graetz demonstrated, true transformation remained beyond the means of any one officer, administrator, industrialist, or entrepreneur. Automotive empire demanded a coordinated effort. In the years following World War I, a loose alliance emerged that linked French Africa with the metropole. It aligned the efforts and interests of a wide range of stakeholders, all of whom stood to benefit either financially or politically from the creation of reliable automotive travel across the Sahara. With the desert as its antagonist, the colonial-industrial complex was born.

The colonial-industrial complex connected military officers, French officials in Africa and Paris, and private actors ranging from automobile manufacturers and intercolonial transport companies to small traders. While the military and colonial administration orchestrated reconnaissance missions to lay out paths and support infrastructure for automotive services, the industrialists André Citroën and Louis Renault conducted technical experiments on both sides of the Mediterranean and staged dramatic Saharan *raids* to create competing prototypes of a colonial car. Citroën and Renault collaborated with French officials and officers

to advance colonial interests, while both manufacturers jockeyed to secure lucrative government contracts for fleet orders, maintenance and repair services, and mail, tourism, and freight enterprises across the Sahara. Simultaneously, their *raids* courted the attention of the French public to translate colonial technical trials into metropolitan sales. Meanwhile, the fierce competition between the two manufacturers spurred technological innovations including “caterpillar” treads, low-pressure tires, and twinned wheels. The French administration effectively outsourced research and development to Citroën and Renault, who bore much of the financial risk.⁵ To the French, the Sahara stood as an obstacle to both the prosperity of the empire and metropolitan security after World War I. The scale of the challenge and its perceived importance to the development of global France after World War I led to the unprecedented coordination of public and private efforts in the French empire, creating the automotive colonial-industrial complex.

Making the Sahara French

The Sahara had long bedeviled French colonial aims in Algeria. The coastal sectors of the colony became constituent departments of France in 1848 following a brutal conquest and occupation. But French influence extended only a few dozen miles inland, where the Saharan Atlas and Aurès Mountains separated the temperate littoral of French influence from the desert.⁶ South of those mountains the French encountered the diverse landscapes of the Sahara, including ergs (sand dunes), oueds (dry riverbeds that filled with water after rains), hamadas (rocky plateaus), and regs (rock-strewn desert plains). Nevertheless, the French administration described the desert that covers one-third of the continent as “a geographic unity, easy enough to define and demarcate.”⁷ French administrative and literary descriptions of the Sahara lingered on the supposed unifying attributes of the region: its emptiness, human desolation, and timelessness. These highly inaccurate characterizations shaped French policy aims. French officials foregrounded the elemental power of the desert environment, arguing that its scale and climatic extremity overwhelmed human endeavors. When the French mentioned the peoples of the Sahara, they erroneously cast them as nomads. Unable to make sense of the movements that sustained desert societies, the French described Saharan mobility as an aimless and primitive reaction to the power of the desert. In French eyes, Saharan peoples such as the Tuareg were Romantic “noble savages” at best, to be admired for their ignorance of corrupting civilization.⁸

In reality, the region had a rich precolonial history marked by internal and external economic connections and complex social and political relations. The

French correctly perceived that the Sahara had shaped the region's economic and political life, but profoundly misinterpreted it. Extreme climates, vast distances, and difficult terrain led Saharan societies to become hyper-specialized producers of goods such as dates or wool, which then necessitated trade within and beyond the Sahara. The resulting region was neither geographically isolated nor historically static. Rather, it was interdependent and dynamic, with exchange placing mobility at the center of Saharan social and political life.⁹ Settlements served as nodes in vibrant networks of intra-Saharan and trans-Saharan economic and social exchange. In what would become the Southern Territories, oases such as Ghardaïa, Djelfa, Ouargla, and In Salah lay at the intersection of trade routes that crisscrossed the Sahara in every direction. Artisanal industries such as dyeing, spinning, and weaving clustered around these settlements and necessitated trade in products such as wool, dyes, and chemicals to produce finished goods.¹⁰ Camel caravans—part means of transport, part social institution—followed flexible routes to cope with the extreme environment and the frictions created by those who sought to control mobility to exert political, economic, or cultural influence. In short, before French arrival in the mid-nineteenth century, the Sahara was both a dynamic borderlands region and a “contact zone” that linked North African and West African societies with one another and the outside world, with a deep history of settlement and interdependence.¹¹

Whereas Saharan peoples forged connections in desert “middle grounds,” the French perceived a gap to be crossed and an empty void to be filled with activity.¹² Saharan societies depended on the “biological old regime” of camel transport because both the animals and the humans that they supported were deeply attuned to the desert's varied landscapes, but the French imagined a problem to be solved by mechanized modernity.¹³ With the Algerian coast occupied and integrated administratively into France, the Sahara loomed as a dangerously open frontier. Its fuzzy boundaries and lack of fixed borders legible to the colonial state made the Sahara a perceived refuge to rebels.¹⁴ By the mid-1840s, the French came to see controlling the Sahara as a matter of colonial security. But they also believed that Saharan trade, which before the French occupation of Algeria flowed west to Morocco and east to Tripoli, could be redirected to Algerian ports.¹⁵ Believing that claiming the “empty” Sahara would be both cheap and easy, the French pursued a program of “peaceful penetration.” In reality, the occupation of the Sahara became a bloody fifty-year campaign of conquest in which the French committed seemingly random acts of extreme violence to terrorize Saharan peoples into submission.¹⁶

The violence of “peaceful penetration” lasted until the turn of the century. The French only claimed In Salah in 1899, and from there occupied the oases of Tidikelt, Tuat, and Saoura in the first years of the twentieth century.¹⁷ The French

administration created the Southern Territories in 1902, placing the Saharan lands under a military commandant who reported to the governor-general of Algeria but who retained much independence in daily affairs.¹⁸ The Saharan network of occupied oases and French forts served as outposts in what one officer described as a Saharan *tache d'huile* strategy (see chap. 1), as the French military seized strategic water resources around which economic and political power revolved.¹⁹ Simultaneously, French troops in Algeria forged links with troops pushing northward from Soudan (Mali) and Niger of AOF. When they met from either side of the Sahara for the first time in 1904, they triumphantly “smash[ed] the Saharan obstacle that separates Algeria from French Soudan.”²⁰ In the decade before World War I, the French violently dispossessed the Tuareg confederations whose Saharan lands straddled southern Algeria and AOF.

The military administration of the Southern Territories remade the historical dynamics of the Sahara in the decade before World War I. French colonial rule and economic practices disturbed the delicate socio-ecological balance struck by Saharan peoples for centuries. French officials and scientists interpreted North African deserts as fallen landscapes based on a self-serving misreading of ancient sources. They argued that North Africans had transformed an agricultural paradise—the bounteous “granary of Rome”—into a barren wasteland through destructive practices of overgrazing and deforestation. North African agriculture, transhumance, and forestry were in fact highly attuned to the climatic shifts and diverse landscapes of the North African desert.²¹ The French attempt to control Saharan societies and economies, writes the historian Benjamin Brower, “changed the balance in North Africa from a sluggish economic equilibrium of subsistence agriculture to a volatile and ultimately disastrous disequilibrium.”²² To monitor and control trade within and across the Sahara, the French installed registration posts and levied taxes and tolls, slowly choking off once-vibrant commerce and creating the human misery that they considered endemic to the region.²³ As trade collapsed, French officials lamented the “inorganic enormity” of the Sahara and saw the desert as burdensome “lands without value that colonial politics, if not geography, cannot but consider an interior sea, quite distinct from the colonies that surround it.”²⁴ The French worked to eliminate competing claims to political power and forms of economic production beyond their purview, thus disrupting the historic role of the Sahara as a contact zone and diminishing the autonomy of action that such “middle grounds” had provided for centuries.²⁵ In short, French colonialism *made* the Sahara a seemingly empty “interior sea,” something far from its natural state.

World War I exposed the vulnerability and unpopularity of French rule in the Southern Territories. North Africa saw little warfare among European powers, but the combatants’ attention to battlefronts in Europe and the Middle East

allowed anticolonial movements to flourish, particularly emanating from the deserts of Tripolitania and Fezzan (modern Libya), Italian territories to Algeria's east. To contain unrest along the Algerian border with Tripolitania, the French committed significant resources to patrol the frontier and to maintain control of the recently occupied Tuareg lands. The reassignment of French troops from North Africa to the Western Front and long distances between French outposts—over fifteen hundred miles from the rail terminuses on either side of the Sahara in some cases—created a logistical nightmare. The French first requisitioned thousands of camels to create supply caravans, then began to experiment with motor vehicles to provision outposts and transport troops and officials.²⁶

Military officers and civilian officials undertook numerous wartime experiments with both cars and roads to safeguard the security of the Sahara. The French found that Saharan automotive transport was possible, in rudimentary terms, for personnel. In this limited capacity, a French officer argued, the automobile “can offer great services to the military command of the Saharan territories.”²⁷ However, the varied terrain of the Algerian Sahara, and in particular the loose sands of the ergs, proved hazardous. Vehicles became stranded, and fine sands infiltrated a vehicle's mechanisms, leading to engine failure, while the varied Saharan terrain led to the rapid consumption of fuel and deterioration of tires. Every sixty miles traveled in the Sahara consumed a breathtaking 150 pounds of fuel, oil, and parts in the mid-1910s.²⁸ The “brutal fact” of distance meant that large-scale motorized supply of the Southern Territories remained uneconomical, at six times the cost of the slower but more reliable camel.²⁹ Many officials bristled at the perceived limitations of Saharan camel transport, however. One commandant, Octave Meynier, who undertook a seventy-five-hundred-mile tour of the territory in 1913–14 on camelback, emerged troubled by the need to constantly tack toward wells and pasturage.³⁰

Breaking the dependence on camel transport would prove difficult, however. In 1916, Meynier enumerated the challenges of Saharan motor transport. Disabusing the common assumption of an endless sea of sand, Meynier noted that the Algerian Sahara boasted no fewer than eight types of terrain, much of which was either too rocky or too sandy for motor vehicles.³¹ Sergeant Bousso of the Automotive Service of the North African Army wrote in 1916 that “the path from Ouargla to In Salah is absolutely impassible in its current state.” Slopes often exceeded 10 percent, while a difficult section of some seventy miles required lengthy sand traverses. Poorly designed paths created sand accumulations as deep as two feet. In one particularly difficult passage, Bousso requisitioned two mules to pull the stranded car; it took two hours to travel “sixty miserable meters.”³² In response to such challenges, Meynier advocated a network of roads to connect Ouargla, the center of his jurisdiction, to the other population centers of his

district, neighboring Algerian territories, and, finally, the colonies of AOF on the other side of the Sahara.³³ Road infrastructure, Meynier argued, would shrink Saharan spaces and overcome its extreme climate and landscapes, finally cementing French control of the desert and its peoples.

Shifting Perceptions of the Sahara

After 1918, with metropolitan officials focused on France's postwar economic recovery, the colonies took on renewed importance. Three important developments shook French Africa after 1914, shifting the colonial calculus. First, the wartime alliance between France and Great Britain put a definitive end to the Anglo-French colonial rivalry. Second, former German colonies became League of Nations mandates, leading the French to occupy Togo and dividing Cameroon between Britain and France. Third, four-plus years of war led to the "near-total exhaustion" of French savings, which focused French efforts on stimulating industrial and agricultural production. With German competition removed and the British rivalry muted in West Africa, French officials focused on developing a trans-Saharan infrastructure to permit the "methodical and intensive exploitation of our African empire."³⁴ The Sahara, they hoped, would be transformed from a geographical and civilizational divide to a "hyphen" (*trait d'union*) connecting French territories.³⁵

French officials turned their attention to this project in the interwar years. Most prominent was the program elaborated by the minister of colonies Albert Sarraut, whose project of *mise en valeur* sought to transform France's African colonies from "museums of samples" into "centers of production."³⁶ With an area twenty times that of metropolitan France, the colonies of "greater France" would lift the fortunes of the metropole, as they had with their laborers, soldiers, and natural resources during the war itself.³⁷ According to Sarraut, "the *mise en valeur* of our colonies has suffered from too many delays and postponements. The time has come for resolute, strong, nonstop action." In the place of disconnected, localized projects of development, Sarraut advocated a centralized plan underwritten by metropolitan funds, a program that he claimed would benefit colonizer and colonized alike. *Mise en valeur* aimed at "the economic and moral development of our various possessions, the creation or exploitation of their wealth, the growth of the human value of their populations: in a word, the methodical organization of all their output capacities that have hitherto not been aroused."³⁸ Although never signed into law (and thus lacking in necessary funding), *mise en valeur* defined French paradigms of economic and technological development in the interwar decades as part of a transimperial turn toward

scientific, technocratic colonialism.³⁹ *Mise en valeur* promised not only development, but a wholesale restructuring of colonial relations that would see France, like other contemporary states, attempt to create a form of neo-mercantilist autarky concordant with the economic protectionism and targeted deglobalization of the interwar era.⁴⁰

French Africa had immense potential but encountered the transport problem. The French transformation of the Sahara from a vibrant region into a divided colonial frontier posed an obstacle to *mise en valeur*. General Jean Estienne, remembered as World War I's "father of the tank," turned his attention to the empire in the interwar years and noted that France faced immense challenges. Great empires in history, Estienne argued, stretched from east to west, but the French empire in Africa extended from north to south, spanning varied climates and ethnic groupings. The vital task of the French in Africa was thus to create a "vertebral column" connecting North Africa and AOF.⁴¹ In the process, the French would transform the "immense ocean" of the Sahara, which "far from separating the distant portions of the same continent must bring them closer in the manner of a seaway [*bras de mer*]."⁴² Estienne, ignorant of the fact that France's violent occupation had destroyed vibrant trans-Saharan connections, argued that the French needed to use the Sahara to link its North African and West African territories.

Such connections across the Sahara would have great strategic value. France's main Atlantic port in West Africa, Dakar, lay eight days from the metropole by sea, and "it is less than certain . . . in the case of a new war, that we would be assured mastery of the seas." France's Algerian ports, however, were only one day from Marseille, separated by the western Mediterranean, a "French sea." Forging a "direct, national path entirely on French land" across the Sahara would inaugurate a great French axis stretching from the metropole to Algeria and AOF, and onward to French Equatorial Africa. Such a connection would allow for "the rapid transport of officers, soldiers, or war matériel" throughout Africa, and onward to the metropole.⁴³ In short, to ensure the defense of the metropole and the global empire, "it was necessary to eliminate the Saharan obstacle."⁴⁴ The French wished to re-create the connective mobility of the precolonial Sahara but not its role as a dynamic middle ground; the Sahara had to be crossed and overcome as a barrier dividing French Africa.

The benefits of a trans-Saharan connection would be not only military/strategic but economic. In particular, the riches and markets of West Africa beckoned. Metropolitan France had forty-one million residents by the mid-1930s; the same number lived on the southern rim of the Sahara, including fourteen million in AOF and nineteen million in British Nigeria.⁴⁵ French officials proclaimed that infrastructural connections would unlock West African labor and purchasing

power while transforming the lands surrounding the Niger River into cotton plantations as part of a dramatic irrigation and resettlement scheme.⁴⁶ Soudan was “a territory many times larger than the metropole . . . where immeasurable and unexploited riches pile upon one another, in livestock, food and textile crops, etc. etc. . . . everything that France needs to clothe itself, feed itself, house itself.”⁴⁷ As one colonial commentator put it, with proper investments, “the Soudan will be a second Egypt,” the Niger River serving as its Nile.⁴⁸

And who knew what hidden riches the Sahara held! After seven decades of activity in the Southern Territories, the French still knew little of the desert’s resources. Louis Audouin-Dubreuil, a central figure in the Saharan *raids* of the interwar period, preached patience and cautioned his countrymen not to repeat Tsar Alexander II’s mistake in Alaska, when he sold the massive, gold-rich territory to the United States for “a morsel of bread.” Audouin-Dubreuil argued that “a Jules Verne, a Wells skilled at games of science fiction, would tell us that it takes just one scientific discovery, a practical means of adjusting the distribution of atmospheric depressions, or even to capture the enormous caloric forces represented by the radiant heat, to make the Sahara a source of prosperity and wealth.” And this was not to mention the potential for mineral or hydraulic riches hidden beneath the soil.⁴⁹

Whether the Sahara was viewed as an obstacle separating Algeria and AOF or as a reservoir of latent treasures, French officials committed themselves to creating the intra-Saharan and trans-Saharan connections that they had destroyed in previous decades. This renewed transport network, however, would be created to meet the needs of the colonial administration. One option was a grand trans-Saharan railway, a chimera that had tempted French officials since the nineteenth century. Although many officials agreed that a railway should be the eventual solution to France’s Saharan transport problem, the immense costs and time to construct a rail link made roads appear a preferable, intermediate measure.⁵⁰ To study the issue, General Robert Nivelle, who became commander-in-chief of the French army in North Africa in December 1917, ordered an automotive and aerial reconnaissance of the Sahara in early 1919. Spurred by continued unrest along the Algeria-Morocco border, Nivelle dispatched seven automobiles under the command of Lieutenant Audouin-Dubreuil, along with four airplanes, to travel from Colomb-Béchar (where the railway extending south from the Mediterranean ended) to Aoulef, an oasis in central Algeria.⁵¹ The mission had two goals. The first was of political and military importance: impressing upon the restive populations of southwestern Algeria the technical means at French disposal to crush rebellions. The second was technical and economic: the mission would lay the basis for regular communications and permanent transport links between Colomb-Béchar and Aoulef, and throughout the Sahara.⁵² Nivelle later

clarified that the mission was “not a *raid* in any fashion,” but rather aimed at “the establishment of a permanent automobile road.”⁵³

The automobiles successfully navigated from Algiers to Aoulef and finally to Colomb-Béchar between late January and early March 1919 (see figure 3.1). The French planned their path around the desert terrain, carefully avoiding the massive ergs that remained impassible obstacles. The effects, according to the mission’s commander, Commandant Bettembourg, were immediate. The mission’s success “glorif[ied] France” and, he claimed, impressed the residents of the oases. The armed car proved up to the task of mastering the Sahara. “Faster than the camel troops, endowed with powerful and dreaded armaments, carrying important reserves of water and food, mounted by trained and resolute crews,” wrote Bettembourg, the cars “would certainly allow a great economy of labor and time, and would assure the definitive tranquility of communications.” Participants also agreed that permanent connections between Algeria and Niger could be created within a year. Indeed, claimed Bettembourg, this road connection would become an infrastructural spine for French Africa, with electricity and gas lines following the same path and the trans-Saharan railway to follow later.⁵⁴ Roads and automobiles would spur the comprehensive development not only of the Sahara, but French Africa as a whole.

Defining the Saharan *Piste*

Transforming the Sahara into an automotive landscape was a shared mission of the French army and the colonial administration. In the late 1910s and early 1920s, each turned its attention to Saharan roads to fulfill political, economic, and military goals. Like the Germans in East Africa, the French, as they occupied the Sahara in the 1880s and 1890s, piggybacked on existing paths, which carefully connected upland pasturage, settled oases, and known water wells to sustain humans and camels alike.⁵⁵ The paucity of French traffic, aridity of the climate, and lack of surface water meant that the French undertook few paving or engineering works, and most paths bore little evidence of French influence beyond kilometer markers. According to the French, when World War I destabilized North Africa, paths once “forsaken” garnered their attention, and noncommissioned officers used their “ingenious spirit” and “transformed, in little time, the tortuous native paths into large *pistes* suitable for motor vehicles.”⁵⁶

What was the Saharan *piste*? It was certainly *not* a road in the metropolitan sense, and one interwar tourism guide noted that “nothing resembles a road in France less than the *pistes* of the Sahara.”⁵⁷ Saharan *pistes* were “rudimentary paths” traced by the repeated passage of foot traffic, camel caravans, or vehicles.⁵⁸

French officials simply sought solid ground and cleared loose sand and stones that humans and camels had previously navigated around.⁵⁹ The French network of Saharan pistes covered approximately eighteen hundred miles in the early 1920s, but most remained unusable for motor traffic. Existing paths had been built by communes, “established without a general plan” according to “the necessities of the moment.” The lack of technical input meant that the network obeyed no logic or order; paths “multiplied beyond measure, without any worry about ulterior consequences. Often, in a specific zone, they duplicate one another.”⁶⁰ Furthermore, the territorial budget bore the burden of funding roads. Construction costs trebled and maintenance costs doubled in the postwar years, rendering the transformation of paths into motorable roads uneconomical and entirely out of proportion with their actual use, current or projected. And even if the colonial administration in Paris approved auxiliary funding, the fundamental technical question remained: how to build a road in territories with no limestone, little water, and no “aggregation materials” to bind the road surface? Such materials would have to be imported, and “this hypothesis is obviously fanciful and locks us into a vicious circle: to transport stones and water we need vehicles, which require roads that, by definition, do not exist.” Nevertheless, it remained clear that “the future mode of circulation in the territories will be the automobile.” Its “wide field of action” allowed the driver “to roam vast deserted stretches with maximum speed and maximum comfort,” slashing the previous travel time by camel by over 75 percent.⁶¹

The French Sahara needed cars, and those cars needed infrastructure, but it needed *Saharan* infrastructure. Unlike Gallieni’s Madagascar, where the administration oversaw the construction of French roads to replace Malagasy pistes, the Saharan infrastructure would remain pistes, with only simple bridgeworks and minimal paving. The cost of materials and paucity of labor militated against further improvements. A photograph from 1919’s Nivelles/Bettembourg mission depicts a Saharan piste after World War I (figure 3.2). The piste shows no real indication of planning, clearing, or improvement. Instead, countless parallel tire tracks stretch across the frame. These pistes offered suggestions for traversing the desert, not definitive paths laid out by state authorities. Further, the photograph’s caption, “the auto piste between Aïn-Guettara and In Salah,” describes a five-hundred-mile stretch of desert, apparently lacking in further landmarks or human features to pinpoint the road’s location more accurately. Such desert pistes expanded to hundreds of feet wide, with fluid and shifting boundaries between the path and the landscape.

Many pistes remained without marking or maintenance, and officials observed that “each work abandoned to itself” was “doomed to a rapid destruction.”⁶² Whereas colonial officials lauded the mastery of nature and the territorial effects



FIGURE 3.2. Automotive path between Aïn-Guettara and In Salah, 1919.

Source: Archives Nationales d’Outre-Mer, Aix-en-Provence, France, ALG GGA 24H/16, “Rapport du fin du mission Bettembourg.”

created by European roads in colonies such as Madagascar and German East Africa, the Saharan piste was entirely different. At best, French officials admitted, the Saharan piste was ephemeral and imprecise. And given the ambiguity of the pistes, the disorientation of the desert often demanded the expertise of Tuareg or Chaamba guides, whose “remarkable spirit of observation” and “extraordinary memory of the terrain” were products of “the directional instinct with which nature endowed him.”⁶³ Far from mastering Saharan landscapes or separating the French from Saharan peoples, pistes bound French progress to the desert and the residents who knew it well.

Wartime experiments gave way to postwar missions and surveys, and the military used motor vehicles to move personnel and resupply select forts and oases in the Southern Territories. In February 1921 the minister of war, Louis Barthou, inquired whether the remote Hoggar region of southeastern Algeria and its oasis of Tamanrasset still required resupply by automobile. Further, given that any connection to Niger would pass through Hoggar, could Algerian officials imagine “a definitive junction by rapid paths between the Algerian Sahara and West Africa?” Jean-Baptiste Abel, governor-general of Algeria, entrusted Colonel Dinaux of the Indigenous Affairs bureau in Algiers to study the question of the

automobile in the Sahara, and his experiences would spur new approaches to Saharan automobilism.⁶⁴

Dinaux described the challenge of responding to Barthou's request. "An overall plan for the automobile question in the Sahara does not exist," he lamented. Officials in the War Ministry, the Southern Territories, and discrete communes in the Sahara pursued their own programs. Dinaux distinguished two philosophical camps on the automotive question. The first was the "Saharans," Frenchmen who emerged from the Arab Bureaus of the Second Empire (1852–1870) and who worked closely with the leaders of Saharan communities. Their charge, for Dinaux, was "to adapt themselves to the country, to inspire themselves from native methods to ground their authority and mount fruitful propaganda." The Saharans claimed to possess an instinctive, almost magical understanding of the land and its peoples born of experience. The second camp was the "Colonials," formed since 1880 by "English methods," with a preference for "grandiose projects so easy to realize in theory" that depended on "schematic maps" and intellectual studies rather than experience. In this, Dinaux gave voice to enduring tensions between officials posted in the colonies and those who administered the empire from Paris. In his training and predilections, Dinaux was a committed Saharan who bristled at the haughtiness and hubris of the Colonials.⁶⁵ For their part, the Colonials accused the Saharans of "going native." Part generational struggle, part doctrinal disagreement about the nature of colonial rule, this conflict came to be defined by the automobile after World War I.

For Dinaux, the Saharan automotive question was a textbook example of colonial waste. "Beginning in the summer of 1917," he wrote, "the program was pushed with a tenacity which no failure could sway." The various Saharan *raids* in the intervening years amounted to little more than a "tour de force," with few practical effects. Troubling signs for the regular use of automobiles in the Sahara piled up: "Nothing exists in terms of Saharan roads, autos fall out of service with a disconcerting speed, [and] the tribes and their camels cannot further support the burden that the establishment of fuel depots imposes on them." In fact, he noted, the automotive service could not operate without "a general mobilization of all the camels of the Southern Territories." This was because the French could not solve the economics of supplying the automobile in the vast territories and punishing climate of the Sahara. The heat evaporated some 30 percent of gasoline, and "the greatest obstacle to automotive traffic in the Sahara is the supply of cars with consumable materials." Whereas automobiles could be used for administrative inspections and emergency evacuations, "the normal system of provisioning the Sahara"—and the automobiles themselves—"remained with camel convoys." Further, a litany of environmental factors hindered the motorization of the Sahara. Beyond the heat and the mix of rocky hamadas and sandy

ergs, “erosion, the violence of the winds, sudden floods, and the fast flows of the oueds” damaged roads and made maintenance both a constant necessity and nearly impossible to perform.⁶⁶

More damningly, Dinaux observed that the Colonials’ dream of administration by automobile produced noticeably worse outcomes in the Southern Territories. Whereas the camel had evolved to tackle all types of terrain and thus could travel anywhere, the variable Sahara meant that “the automobile is absolutely bound to the pistes and the fuel depots we have created for it.” The brigands who menaced French interests and who traversed “a desert field of action larger than France” could operate unimpeded. Further, the fixed and (theoretically) permanent nature of the road was a disadvantage in the Sahara. Whereas couriers, small convoys, and caravans could travel the Sahara because they could follow unknown and ever-changing itineraries to avoid bandits, “an automotive piste, with its yards of workers, its supply depots, [and] its periodic convoys of cars and camels” were juicy targets. Roads and automobiles would “add to the insecurity of the Sahara” rather than ending it. Finally, Dinaux remarked upon a universal problem of administration by automobile: “An officer who rides about in the territory that he administers becomes a functionary who goes from one office to another; he loses contact with his subjects and the land.” In contrast, when traveling more slowly by camel, “one adapts himself to the country, one acquires a perfect knowledge, one attracts the sympathies of the natives, one acts as a leader.”⁶⁷

Fundamentally, the question of motorizing the Sahara revolved around what kind of empire France aspired to be. Dinaux and the Saharans elaborated a vision of direct rule that would be better pursued with more officials arrayed across the territory, traveling slowly to build relationships. The automotive Colonials, for their part, sought to use the automobile to collapse space and accelerate connections within Algeria, between North Africa and AOF, and between Africa and the metropole. Their vision better accorded with interwar *mise en valeur* and projected an empire in which mobility mattered more than territoriality. For the Colonials, motorized travel would overcome the desert, which they implied had no inherent value. More crucially, the Colonial dream of automotive empire, assuming the planning and development of lasting pistes, would liberate the French from dependence on the knowledge and labor of Saharan communities. The Colonial model for the French Sahara would create transport connections to allow the French to *move through* the desert, rendering it little more than a transit corridor. Notwithstanding his myriad critiques, Dinaux admitted that it was too late to abandon motorization projects. Public works officials had already completed surveys, construction was underway, and the press was riveted by the project.⁶⁸ Automotive empire had a momentum all its own. But solving the Saharan

transport problem required close collaboration with a heretofore passive sector: automotive manufacturers.

Developing the Colonial Car

For Algeria's administrators and military officers, Saharan motorization was a spatial and environmental problem, not a technical one. Throughout World War I and in the initial postwar years, officers and administrators had few complaints about automobiles. Italian-made Fiats proved their mettle in Libya in the Italo-Turkish War (1911–12) and remained the vehicle of choice for French Saharan efforts into the early 1920s.⁶⁹ The 1919 Nivelles/Bettembourg mission used two Fiats, four vehicles made by the Parisian company Brasier, and one from the Lyonnais manufacturer Rochet-Schneider. They offered some recommendations to improve the vehicles (more power, better cooling, larger wheels) but mostly focused on advice for creating Saharan pistes quickly and economically.⁷⁰ Mounting critiques of Saharan pistes and the skepticism of Dinaux and the Saharans assumed that automobiles would improve incrementally but would remain dependent on support infrastructures (pistes, fuel, parts) that simply could not overcome the geographical scale, difficult terrain, and extreme climate of the Sahara.

In the aftermath of World War I, however, French manufacturers resolved to overcome the Sahara through technological innovation, altering the equation. These efforts ignored the French Saharans' complaints about support infrastructures and instead focused on creating a "roadless" automobile. Their alliance with the modernizing Colonials in the French administration created a colonial-industrial complex that integrated public and private efforts to tame the Sahara. Their success transformed automotive empire in the interwar years, and the model shaped *mise en valeur* in other realms, as well as the pursuit of automotive empire in other colonies and empires.

Through the war and in its immediate aftermath, several actors working in separate spheres came together to create the automotive colonial-industrial complex. The changing nature of the French automotive industry played an important role. The initial technical innovations that created the car emerged from Germany in the 1880s, but France was the capital of global car culture in the 1890s and the decade of the 1900s. The automobile became a luxury plaything in Paris and the Côte d'Azur, and French manufacturers such as Panhard & Levasor created models for an elite clientele.⁷¹ As Henry Ford pioneered standard models and mass-production techniques, some French industrialists followed developments across the Atlantic and selectively adopted Fordist methods.⁷² In

the decade before World War I, Louis Renault curtailed his production of luxury automobiles and began to produce cheaper and lighter vehicles, anticipating an expanded global market.⁷³ André Citroën, a businessman who made his name manufacturing industrial gears, produced five hundred engines for the Parisian carmaker Sizaire et Naudin in 1905. His success led him to become director general of the celebrated but struggling Mors automobiles in 1907, where he improved the efficiency of the company's manufacturing processes and the volume of its output.⁷⁴

Together, Citroën and Renault spurred the shift in French automobile manufacturing from the artisanal to the industrial. André Citroën traveled to the United States in 1912 to visit Ford's Highland Park factory in Dearborn, Michigan. The Frenchman left impressed by Ford's Taylorist production methods, as well as his vertically integrated business model that included repair shops, consumer credit, and advertising. Like Louis Renault, André Citroën foresaw the potential of producing low-cost cars for the masses and left the United States a committed Fordist.⁷⁵ Citroën and Renault pivoted their operations to manufacture munitions during World War I and learned that working closely with the state yielded significant financial rewards. In peacetime, both returned to producing automobiles and quickly outpaced their competitors. Citroën produced the first vehicle under his eponymous brand in 1919; by 1925 Citroën was the fourth-largest car company in the world, trailing only Ford, General Motors, and Chrysler.⁷⁶ This meteoric growth benefited from his close collaboration with the Belgian Georges-Marie Haardt. Haardt had worked with Citroën at Mors before World War I and followed the industrialist to his Parisian Quai de Javel complex, where he became the director general of Citroën's factories.⁷⁷

Together, Citroën and Haardt were talented and visionary organizers of industrial production, but unlike their contemporaries Henry Ford and Louis Renault, neither was an automotive engineer. As Citroën sought to understand the possible uses of motor vehicles, he became acquainted with Adolphe Kégresse. An engineer by training, Kégresse was born in France but traveled to St. Petersburg in the early 1900s in search of work. He quickly rose to the level of a master mechanic and so impressed men of power and means that he personally kept Tsar Nicholas II's extensive garage and became the technical director of his automotive services in 1905. In this capacity, Kégresse struggled driving in the snow and ice of the Russian winter and began to experiment with mounting automobile chassis on skis and tanklike tracks in 1910. As a member of the tsar's staff, Kégresse fled the October Revolution in 1917 and returned to France. He offered his services to Louis Renault, who rebuffed him, before meeting André Citroën in 1920. In October 1920, Kégresse staged a demonstration of his *autochenilles* (caterpillars). These half-track vehicles bore tires in front and continuous tracks in the rear and



FIGURE 3.3. The Citroën autochenilles in Ouargla, Algeria, 1923. Source: Georges-Marie Haardt and Louis Audouin-Dubreuil, *Across the Sahara by Motor Car: From Touggourt to Timbuctoo* (New York: D. Appleton and Company, 1924).

were mounted on Citroën's mass-produced, ten-horsepower Type A model (figure 3.3).⁷⁸ Kégresse focused on testing and perfecting the autochenilles first in the forests outside Paris, then in the snows of the French Alps. Citroën and Kégresse then homed in on slippery sands, testing their mettle in the dunes at Arcachon on the French Atlantic.⁷⁹ Following a demonstration in the Algiers suburb of Hussein Dey, Citroën's designs on the Sahara became clear.⁸⁰

Creating a car suited to the Sahara required men of different expertise, and this necessity spurred the public-private cooperation that created the French colonial-industrial complex. We have already encountered Louis Audouin-Dubreuil, who fought at the battle of the Marne in 1914 before transferring to Tunisia in 1917, where he commanded a group of armored cars to patrol the restive border with Italian Tripolitania. His automotive experience made him a central member of the exploratory missions immediately after the war, and in 1920 he met Citroën and Haardt for the first time.⁸¹ Meanwhile, General Estienne required vehicles that were faster than camels and more reliable than airplanes to police and administer the Sahara and requested that Citroën test the capacity of autochenilles in North Africa.⁸² Citroën—part industrial visionary, part huckster—saw great benefit in the spectacle of autochenilles plying the Saharan sands and the potential for lucrative government contracts. In his pitches to colonial officials, he deftly deployed the vocabulary and ideas that suffused postwar military and administrative discussions of the Sahara. The war had proven the value of Africa's soldiers and resources to France, but, Citroën wrote, "these riches could not acquire their real value until the day when the African bloc would be realized by the establishment of a rapid, secure, and permanent liaison between our

possessions on the Dark Continent.” Camel caravans took six or seven months to travel from Touggourt, Algeria, to Timbuktu, Soudan, the respective outposts on either side of the Sahara. The twentieth century, Citroën opined, “can no longer abide such slowness.”⁸³ The mutual benefits to be realized by the inchoate colonial-industrial complex were clear. Haardt, Citroën’s trusted lieutenant, and Audouin-Dubreuil, a lieutenant in the North African army, would represent the interests of their respective superiors while collaborating to create automotive empire in the Sahara.

The First Crossing of the Sahara by Automobile

In the winter of 1921–22, Audouin-Dubreuil’s superiors placed him in command of eight autochenilles to undertake test missions that covered thousands of miles and varied terrain in Algeria. These served as “a real laboratory experiment” comprising “patient studies and rigorous mechanical tests” that Kégresse used to modify the vehicle back in Paris.⁸⁴ Audouin-Dubreuil sent notes to Paris that produced various adjustments, including improved cooling, decreased fuel use, and mechanisms to prevent sand from infiltrating the motor.⁸⁵ After finding that the rocky hamadas abraded metal treads quickly and created intense wear on interior joints, Kégresse exchanged the treads for a more flexible construction of rubber and canvas, an innovation that garnered the attention of British officials interested in perfecting tanks.⁸⁶

Although some French officials expressed reservations, most early responses were effusive. Colonel Mangeot, the commandant of the Timbuktu region of Soudan, tested the autochenilles in October 1922 and anointed the Citroën “the Saharan car par excellence.” Wholesale adoption, he counseled, would allow the military to economize personnel, money, and time in both policing and supply missions, while having a “terrorizing effect” that would “reestablish an equilibrium” with defiant colonial subjects in the Sahara.⁸⁷ Administrators, too, saw much potential. In an unsigned letter, the director of the Southern Territories Gaston Boulogne wrote directly to Kégresse in Paris and expressed his “deep interest” in the autochenilles, which he believed could be profitably deployed in his domain. Roads caused “very great technical and financial difficulties to assure the construction and above all the maintenance of this network.” The miracle of the autochenille was that it demanded little more than “summarily constructed” pistes, “without requiring a degree of maintenance, which neither the climatic regime nor the budgetary situation of the Southern Territories allows.”⁸⁸ A roadless car would revolutionize French rule in the Sahara by dramatically reducing costs and French manpower, while also eliminating dependence on

Algerian labor. The vision of a lean, mobile colonial administration and reduced military footprint depended on technological dominance to collapse the scale of the Sahara. Such a vision imagined an exclusively French system of mobility to replace the precolonial caravan network and accorded with the aims of the Colonial camp in the Ministry of Colonies, at the expense of the skeptical Saharans.

In the fall of 1922 André Citroën sensed that the time had come for a public demonstration of the autochenilles and began to organize an expedition. Citroën recapitulated the official interpretation of the Saharan transport problem before asserting that “the automobile alone can assure a rapid and secure crossing in this moment.” But standard European models could not overcome the ergs, hamadas, mountains, and oueds that made up the Sahara, and the postwar military missions had revealed that “it would be practically impossible to establish a piste between southern Algeria and the Niger River” because of the “apparently invincible obstacle” of the Sahara. In response, Citroën planned a Saharan crossing to begin in December 1922 to prove the capacity of autochenilles to create roadless connections across the desert. “It will,” an internal report boasted, “be the first pioneer of civilization.” The mission, led by Haardt and Audouin-Dubreuil, included Lieutenant Georges Estienne (son of the famed general) and the geographer-cinematographer Paul Castelnau.⁸⁹

In its mixture of spectacle and exploration, the Citroën Sahara mission echoed the nineteenth-century age of celebrity African explorers such as Henry Morton Stanley and Pierre Savorgnan de Brazza.⁹⁰ But as a militarized *raid* closely coordinated with the French colonial administration, it also epitomized—and helped create—the interwar colonial-industrial complex. Citroën and Haardt wisely aligned their efforts with Parisian decision makers, cultivating strong relations with the minister of war, the minister of colonies, and the respective governors of Algeria and AOF. In Paris, the president of the republic Alexandre Millerand hosted Haardt and Citroën and “map in hand, inquired thoroughly concerning all the organizational details of the expedition.”⁹¹ Citroën, an advertising and public relations savant, affiliated his brand with the conquest of the formidable Sahara and the prestige of the French empire. Little wonder that he insisted on the cinematographer and allotted one of the six autochenilles to the press, who reported breathlessly on the progress of the expedition.⁹² An official travelogue appeared in French in 1923 and English in 1924. Citroën and General Estienne hosted conferences and media events in the spring of 1923. The documentary film of the expedition, *La Première traversée du Sahara en automobile*, toured throughout France and settler communities in North Africa, and Citroën personally screened it for King Albert I of Belgium and Queen Mary I of England.⁹³ Clearly, Citroën harvested cachet and drew attention to his wares by undertaking the Saharan crossing.

When the expedition departed Touggourt at 5 a.m. on December 17, 1922, in the presence of Algeria's governor Théodore Steeg, it heralded nothing less than the end of the premodern era and the dawn of modernity in the French Sahara. "These steel *meharas* [dromedaries]," wrote Haardt and Audouin-Dubreuil in the travelogue, "drinkers of petrol and oil, whose posterior members can adapt themselves to all terrains," were contraptions out of science fiction. The *autochenille* mimicked the biomechanics of the camel, spreading the weight of the automobile and allowing it to glide smoothly atop the sand, "like the wide and soft foot of the dromedary." In terms that would please the officials of the Southern Territories, they wrote, "One can almost say that it makes the road at the same moment that it passes over [the desert]." The effects were obvious and immediate. The *autochenilles* overcame a "veritable lunar landscape" and glided past caravan paths littered with camel corpses. The travelers continued to misrepresent the desert as sublimely empty, arguing that the automobiles pierced the "great black silence" and "absolute immobility" of the Sahara, transforming it from a North African landscape into a French one. Whereas the knowledge of the expedition's Saharan guides was "incontestable," the *autochenille* made their expertise obsolete. Their innate knowledge of the land depended on the rhythm of the camel; they calculated travel not by *distance* but by the *time* it took a camel to reach a destination. "Now the speed of the automobile multiplies this pace by a factor that they cannot even imagine," inducing a "veritable vertigo" in the guide that culminated in "the absolute loss of a sense of direction."⁹⁴ For the French drivers, the automobile displaced their own disorientation in the Sahara onto their colonized subjects. By transforming the Sahara into an automotive landscape, Citroën promised a new kind of empire in which French technology and rationality would end not only their submission to the desert but also their dependence on the labor and knowledge of Saharan peoples.

Contemporary coverage and later narrativizations of the journey mixed the earth-shattering and the mundane. The transformational power of the automobile appeared almost supernatural, and each vehicle had a mythological, orientalized moniker: Golden Scarab, Silver Crescent, Flying Tortoise, Apis (the ancient Egyptian bull god), and the twee Creeping Caterpillar. Citroën later donated the Golden Scarab to the Hôtel des Invalides in Paris, where it remains on display at the Army Museum, not far from Napoleon's tomb.⁹⁵ The participants sent updates via wireless, and the metropolitan public took particular interest in the mission's "mascot," an English terrier named Flossie, and Sungalo, a Bambara man from Bamako (Soudan) who joined the return journey. Sungalo fulfilled a similar role to Mzee on Paul Graetz's journey, serving as hunter and cook. He later joined the post-expedition press junket, serving as an object of metropolitan fascination.⁹⁶ While the official coverage of the expedition extolled the mission's self-liberation

from dependence on Saharan residents, the crossing remained deeply indebted to their knowledge and labor.

The participants became emotional when entering Timbuktu on January 7, 1923, having crossed the desert in only twenty days. Haardt and Audouin-Dubreuil wrote, “For the first time automobiles crossed the Sahara; for the first time mechanics vanquished not only distance but all of the accumulated obstacles in the most desolate and anti-human regions in the vast world.” The authors cast themselves as prophets of civilization. No longer would the inhabitants of the Sahara look to the horizon with fear. The successful crossing of the Sahara meant “that there, too, France keeps watch”; the “nightmare” was over.⁹⁷ Congratulations rolled in from across the French government, the monarchs of England, Belgium, and Spain, and the bey of Tunis.⁹⁸ Citroën sent a telegram to Timbuktu, stating “superhuman efforts accomplished the work of Titans, for the cause of humanity and the triumph of French industry.” Crossing the desert allowed the French to reimagine the Sahara not as an obstacle between AOF and North Africa, but a transit corridor that connected them, re-creating the historical role of the desert as a connector that their own rule had severed. With the connection made, the Niger Valley could be reconsidered as France’s African extension: massive livestock pasturage that would supply the industrialized metropole with meat, leather, and wool (a 1922 survey counted over 4.5 million livestock in Soudan alone and a further 5 million in Niger, Upper Volta, and Mauritania).⁹⁹ Conquering the Sahara by automobile, it seemed, would finally cement the French African bloc and remake geopolitics and economic relations to the benefit of all one hundred million residents of global France.

Conquest without Transformation

With the Saharan crossing a success, pro-Citroën media stories advanced the narrative of a new colonial era. In a lengthy feature in the *Revue des deux mondes*, Alfred Guignard lauded the “emancipation of man from natural forces.” Like ships crossing the ocean, the autochenilles transformed the desert from “an obstacle” to “a pathway.” In his revelation of new political and economic possibilities, André Citroën was a twentieth-century Christopher Columbus.¹⁰⁰ The Parisian daily *Le Temps* proclaimed the desert “pierced from end to end” in a “definitive” act of “conquest”; only the violence of French penetration and possession, the author suggested, could create lasting peace in the desert. As a result, “points on the globe that once seemed terribly distant from one another find themselves, like with a strike of a magic wand, suddenly drawing closer.” In this

single act, distances “have been wiped off the map, abolished,” and “in all senses, the universe shrinks.”¹⁰¹

In the colonies, the successful crossing produced a burst of enthusiasm. General Estienne noted that Citroën reduced the total distance of the crossing by at least two hundred miles, an important gain in efficiency that would allow the French to unlock the riches of the Niger Valley more quickly.¹⁰² In the Belgian Congo, the private Compagnie du Congo and the Compagnie du chemin de fer du Bas-Congo purchased autochenilles in 1923 to facilitate their colonial activities. They rolled their own path and could ford swamps and shallow waters, while using ferries for deeper bodies of water. “In effect, the autochenille dispenses with all infrastructure” and all related costs of road construction and maintenance.¹⁰³ In the heady months after the crossing to Timbuktu, a place that long signified otherworldly Saharan isolation, altering the automobile to suit colonial landscapes seemed to have solved the economic and labor challenges that had stunted the development of automotive empire, and empire writ large.

Meanwhile, French colonial officials continued to evaluate the utility of autochenilles for regular service. As they did so, they became increasingly skeptical of the scalability of Citroën’s invention, and the Saharan/Colonial debate reemerged. In general, metropolitan officials and high-ranking authorities in Algiers lauded the vehicles, while colonial “men on the spot” proved more skeptical.¹⁰⁴ In 1923, one officer admitted that the autochenille “undoubtedly resolves the problem of automobilism in the Sahara” but cautioned that the rubber treads deteriorated rapidly on the rocky hamadas and regs.¹⁰⁵ Another concurred, noting that the ten-horsepower engine was too weak for mountain ascents and that the motor was terribly inefficient, consuming excessive amounts of fuel, oil, and grease.¹⁰⁶ For military officers who considered logistical questions of supply and transport, the autochenilles had obvious shortcomings that Citroën’s spectacular *raid* had obscured.

By 1924, high-ranking officials agreed that in solving the problem of Saharan pistes, the autochenilles created a much larger one by exacerbating the challenges of Saharan supply. In July 1924, General Edmond Boichut, commander of the Nineteenth Army Corps of North Africa, diagnosed fatal design flaws that doomed the vehicle. The traction of the autochenille was too good, overworking the motor and forcing the driver to keep the car in second gear. As a result, the autochenille traveled at low speeds, averaging barely six miles per hour, and consumed prodigious amounts of gasoline. The twenty-five-liter gas tank effectively limited the range of the vehicle to forty miles, an unacceptable restriction in the Sahara, where French posts were often over one hundred miles apart. The overworked motor and small gas tank constituted the “crucial” weakness of the autochenille because they meant that much of the 1,650-pound carriage capacity of the vehicle was absorbed by fuel and spare parts. The only real military

and administrative use for Citroën's invention was to transport personnel. Moving forward, Boichut argued, the colonial officials should use France's colonial-industrial complex to their advantage. The rapid technological evolution of motor vehicles indicated that the government should purchase vehicles only to serve immediate needs, rather than being burdened with obsolete equipment. Further, the French authorities should continue to encourage manufacturers to experiment with the automobile by staging tests and competitions, offloading the costs of research and development to private enterprise.¹⁰⁷

Boichut accurately perceived that industrial competition would benefit the French administration, an allusion to the contemporary rivalry between Citroën and Renault. Whereas Citroën won the public relations battle with his spectacular crossing and enthralling autochenilles, Renault quietly won the administrative war.¹⁰⁸ In the years after World War I, the entire colonial-industrial complex had conflated two distinct questions: creating a Saharan car to travel on rudimentary pistes and inventing an all-terrain vehicle. Most driving in the Sahara still used pistes, making Citroën's solution to the transport problem excessive for regular use.¹⁰⁹ Renault, on the other hand, produced a modified colonial vehicle with six wheels on three axles (one axle forward, two in the rear), with twinned tires on each wheel (twelve tires in total) filled to low pressure to allow the car to handle varied terrain (figure 3.4). Like Citroën, Renault lobbied colonial officials



FIGURE 3.4. Renault's colonial model, ca. 1925. Source: Archives Nationales d'Outre-Mer, Aix-en-Provence, France, ALG GGA 24H/16, "Autos Renault" dossier.

behind the scenes. Addressing Gaston Boulogne in 1924, one employee highlighted that the Renaults, “specially constructed in light of the great difficulties of colonial service,” had been tested and proven in “the most difficult regions of North Africa.”

Because the vehicle was suited to the actual state of Saharan pistes and not the romanticized conquest of untracked ergs and forbidding hamadas, the Renaults better accorded with the everyday activities of the Saharan administration.¹¹⁰ The six-wheeled Renault traveled faster, cut fuel consumption by nearly half, wore out fewer parts, could carry heavier loads, and required no specialized training for drivers and support staff.¹¹¹ Citroën was shocked when, in 1924, his former ally General Estienne proclaimed “the incontestable superiority of wheeled vehicles over autochenilles.”¹¹² In the following years, Estienne became president of the newly formed *Compagnie Générale Transsaharienne* (CGT), which developed transport and tourism services across the Sahara using Renaults. Meanwhile, Citroën’s tourism-focused *Compagnie Transafricaine Citroën* (CITRACIT) collapsed in 1925 owing to behind-the-scenes sabotage by Renault-aligned officials.¹¹³ While the public remained fascinated by Citroën’s African exploits, by late 1924 French officials had decided that the future of Saharan transport lay with wheeled Renaults.

The Saharan Piste Returns

The focus in the Sahara shifted once again, and the administrative camp of Saharans was ascendant. By the mid-1920s, the technological question was settled, and the path to a workable Saharan transport regime was clear: “colonial” car models, such as the six-wheeled Renault, would crisscross a network of simple pistes, minimally cleared but well marked and studiously maintained. Officials were confident in their ability to create usable Saharan pistes. After all, observed one military officer, the construction of the Suez Canal and the design of the Panama Canal proved French mettle in overcoming geographic obstacles and transforming global affairs through infrastructures. Like those endeavors, he wrote of the Saharan pistes, “in a project this vast, it is necessary to have faith.”¹¹⁴ But constructing and maintaining thousands of miles of pistes lacked the charismatic aura that defined those canals and the race to create a colonial car. Dusty desert paths brought no glory to metropolitan manufacturers or colonial officials. They were a public good. And whereas the colonial-industrial complex could be mobilized to solve discrete challenges with innovative technofixes, it exhibited little interest in mundane matters of administration. Delivering public goods required a well-funded administration with a wide mandate. This presupposed levels of

economic development and trust that existed in the representative, liberal democratic atmosphere of metropolitan France and, to a degree, among Europeans in the stratified settler society of coastal Algeria, but were absent in the Southern Territories, a sprawling domain under military occupation.

Predictably, road projects languished, menaced by the extremes of the Saharan climate and terrain on the one hand, and lack of funding on the other. For all the geopolitical necessity of trans-Saharan transit and promises of West African cotton and animal products flooding the metropole, roads remained a local issue. Military commandants grumbled that road construction and maintenance amounted to an unfunded mandate in sparsely populated lands with few resources. A decade after the first Saharan missions cataloged the shortcomings of the piste network during World War I, creating Saharan roads in the mid-1920s remained more “the search for the firmest terrain” than a modern engineering project.¹¹⁵ The lack of landmarks in the desert and poor road markings made travel disorienting and dangerous. Following an administrative tour of the Southern Territories in 1925, General Broussaud wrote, “In a country in which there are neither roads nor villages, neither forests nor streams, the map can only depict orographical errors.” Broussaud praised the general state of the roads but enumerated countless environmental challenges, including “the crossing of very numerous oueds,” ever-shifting soil conditions that endangered the driver, and vertiginous, narrow paths through the mountains. Continued surveys—of soil quality, landmarks, and road slopes—and improved marking were needed to render the Saharan pistes secure and reliable.¹¹⁶ The promise of a lean, modern administration by automobile had become frantic, overstretched administration in service of the automobile. Officials’ desperate pleas to improve the Saharan piste network were a leitmotif of interwar administrative reports.

When it did mobilize, the colonial-industrial complex pursued ambitious projects that would transform the Saharan piste, not the incremental gains won by a concerted program of investment and maintenance. Outsourcing research and development to the private sector in road construction meant that construction firms pitched the French administration on dramatic (and expensive) infrastructural innovations. As in the case of automotive technology, the United States provided the inspiration. For what was the Sahara if not France’s version of the Wild West, a frontier to be mastered and subjugated? French officials returned from the 1930 International Road Congress in Washington, DC, dazzled by US roads. A major focus of the conference was the construction of roads in “new countries, such as colonies and undeveloped regions.”¹¹⁷ The head engineer serving the inspector general of the Ponts et Chaussées in Algiers wrote that the US, particularly the developing American West, “brings to light in an arresting way

the prodigious developmental role that roads constitute in the *mise en valeur* of a country.”¹¹⁸

As a developmental project, attendees of the Road Congress agreed, roads were a sound investment. Of particular interest to the Algerian inspector general was the proven success of building roads with “materials of mediocre quality,” then spraying them with an oil emulsion to create a solid surface.¹¹⁹ In 1932, the administration of the Southern Territories staged a contest among various firms, challenging each to treat a small section of piste between Touggourt and Ouargla to determine the feasibility of surface road treatments. One company, Société Routière Colas, submitted a project bid that sought to apply tarring methods developed in the United States to Algeria. The similarity of climate and terrain between Algeria’s Southern Territories and the US Southwest, the company proposed, made the method a model for improving Saharan pistes.¹²⁰ Colas extolled the success of its own innovative tarring work in Algeria, submitting a photograph of the process in action (figure 3.5).¹²¹

From a technical perspective, the results were impressive. Cutting across the frame at an oblique angle, the pitch-black road, carefully laid with white kilometer stones, shows a seemingly empty landscape given shape and direction by French action. Certainly, this road draws a stark divide between infrastructure and nature and will not disintegrate as rapidly as an untreated Saharan piste. But the photograph reveals the ultimate futility of tarring pistes in the Sahara. Empty oil drums lay strewn at the roadside, indicating the immense costs of materials,



FIGURE 3.5. Algerian road tarred by Colas, ca. 1932. Source: Archives Nationales d’Outre-Mer, Aix-en-Provence, France, ALG GGA 24H/8.

labor, and transport required to tar the roads. Costs rose to 145,000 francs per mile treated, “far too high an expense for the weak traffic in the Southern Territories.” However tantalizing Colas’s approach, the sheer scale of the work was unfeasible for the impoverished, sparsely populated French Sahara. The exorbitant costs of transporting construction materials including oil, gravel, and water doomed the project.¹²² However tantalizing the transatlantic comparison, it was spurious. The western United States boasted millions of white settlers who possessed full legal rights and representation in the political system. These citizens formed a sizable “public” upon which a modern society could be built, and in whose putative interest modernization would be pursued using public funds.

For all the excitement surrounding Saharan *raids*, automotive experiments, and road competitions, the colonial-industrial complex could not translate spectacular (and expensive) innovations into reliable, economical forms of automotive empire. Companies that had invested in the future growth of colonial transit struggled, particularly during the Great Depression. The transport business of CGT, one observer wrote, “does not seem to be in a very prosperous position.”¹²³ Another Saharan transport company operating out of Algiers, Société Catalan, owned only seven vehicles, five of which were damaged and out of service in the fall of 1930. Nevertheless, the company had managed to rack up rumored debts of 700,000 francs to the oil companies Shell and Standard Italo.¹²⁴ Meanwhile, ten Arab and Berber businessmen in the Saharan commune of Timimoun complained that the 1930 shift of mail delivery to automobiles cut deliveries from four to three times monthly. “We observe,” they wrote to the director of the Southern Territories, “that there is one fewer courier per month, and we cannot call that progress or improvement.”¹²⁵ Motorization and progress were not synonymous in the desert, and the issue of regular Saharan transit remained unresolved. For all the social and political tensions in colonial Algeria, a broad coalition—of Europeans and Algerians, of public officials and private companies—agreed that the colonial state had failed in this basic task of governance and development.¹²⁶

The campaign to motorize the French Sahara in the interwar period produced decidedly mixed results. Despite frustrations, the French achieved much in the aggregate. The 1,800-mile network of mostly unimproved caravan paths that existed at the end of World War I had doubled in size by 1924 and more than tripled again to some 12,500 miles by the beginning of World War II. Motor vehicles improved between the wars, with Citroën’s autochenilles conducting the first crossing in 1922–23. Their idiosyncrasies and technical shortcomings quickly made them obsolete, and one commentator in the mid-1930s described them as “a veritable heresy.”¹²⁷ A standard-model automobile, minimally altered, could traverse the Sahara by the mid-1920s. Alongside Saharan pistes, the French

administration and private companies created support infrastructure that included fuel depots, rest houses, and repair shops, mapping French power onto Saharan landscapes and societies once defined by camel caravans and their support infrastructures of wells, pastures, and markets.

While the distances remained vast and the terrain unforgiving, the normalization of Saharan transport by the 1930s suggested the progressive entrenchment of French power. According to a tourism guide produced by Shell Oil in 1935, “today everyone can know the haunting desert. And to think . . . that thirteen years ago, the Sahara had never been traversed by an automobile!” Thanks to Shell’s “prodigious organization,” the automotive tourist could draw fuel from the same pumps found across the world, realizing the company’s slogan, “in the Sahara, like at your [local] garage.”¹²⁸ While Saharan pistes shifted and even disappeared, the support infrastructure for automobiles was solid and seemingly permanent, structuring Saharan space to fulfill French economic and political goals. As a map from the Shell travel guide demonstrates, something so mundane as fuel infrastructure transformed the French perception of the Sahara from a sea of sand into a series of French-controlled outposts, connected by rapid, modern forms of movement and hydrocarbons sourced from across the globe (the map also shows the main network of pistes crisscrossing the Southern Territories) (figure 3.6). One publication confidently declared that “the *mise en valeur* of the Sahara” was underway in 1938.¹²⁹

But the phrase just as easily could have been uttered two decades previous (or two decades later). Saharan *mise en valeur* was always in progress, but never realized. The length of the piste network grew, motor vehicles’ technical capacities improved, and support infrastructure proliferated, but negative evaluations of Saharan transport and lagging development continued. The budgets of the Southern Territories continued to be held hostage by astronomical construction and maintenance costs. In 1936, the head of the Public Works Department described how “the feeble resources” of the Southern Territories impeded “the rational *mise en valeur* of the immense territories that stretch from the limits of northern Algeria to our possessions in Central Africa.”¹³⁰ Private trans-Saharan motor transport companies such as CGT and the Société Africaine des Transports Tropicaux (SATT, founded in 1933) could not survive without significant government subventions. After the Nazis conquered France in 1940 and studied the resources of its overseas empire, the Germans disdainfully concluded that “North Africa has no effective land connection with Central Africa.” Although the French lauded their trans-Saharan connections, CGT and SATT were of minor importance; in 1936, CGT, the more successful of the two, transported only one hundred European passengers and one hundred tons of freight.¹³¹

organic regime of precolonial Saharan transport with a mechanized colonial one, French officials became mired in a struggle to develop Saharan pistes, diverting attention and resources that could have been applied elsewhere. As the next chapter will show, the French colonial-industrial complex *did* notch major victories, but these were in metropolitan Europe, where automotive exploits became central to the interwar culture of empire.

THE ROLLING SPECTACLE OF THE *CROISIÈRE NOIRE*

In the late 1920s, engineers with the French automotive manufacturer Panhard & Levassor attempted to break through one of the roadblocks that had challenged automotive imperialists from Joseph Gallieni and Paul Graetz to the French Saharans: fuel. Commercially viable petroleum reserves were not discovered in Africa until the 1950s (in Nigeria, Angola, Algeria, and Libya), requiring the importation of all fuel to the continent. As the previous chapter demonstrated, by the 1920s, fuel and supply difficulties provoked skepticism of automotive empire more than the technical capabilities of the automobile. Despite the primacy of the gasoline-fueled internal combustion engine, engineers continued to experiment with varied fuel-motor combinations in hopes of overcoming challenges of fuel supply. Particularly promising for automotive empire was the process of gasification, whereby carbonaceous materials such as wood or coal could fuel motor vehicles with minimal engine modifications.¹ In 1929, having learned from André Citroën's success in advertising technical innovations through an arresting journey, Panhard organized a thirty-seven-hundred-mile tour through French West Africa (Afrique Occidentale Française, AOF) and French Equatorial Africa (Afrique Équatoriale Française, AEF) to prove the colonial viability of wood-fueled trucks.²

The resulting write-up by Henri Lena, Panhard's director of export services, published in a specialist journal dedicated to the trucking industry, offered the usual mix of technical specifications and colonial boosterism to argue that gasification would transform the immense stored energy of Africa's tropical and subtropical forests into fuel. Lena described the "innumerable, indestructible" forests and thickets that frustrated drivers because they were "fed by the sun nonstop."

However, these obstacles could be transformed into high-quality charcoal in a simple, inexpensive process. “Forest gas” sourced from the “thorny shrubs” of Senegal to the dense forests of Côte d’Ivoire would become “not only the French national fuel [but] the ultimate universal fuel.” Through the repeated “poetic transfusion of vegetable blood to the engine,” Panhard’s road trial offered a new path for automotive empire, one that augured a decentralized fueling infrastructure fed by seemingly inexhaustible renewable resources. The focus on gasified motors was new, but otherwise Lena’s mix of technological boosterism and utopian optimism recapitulated the obsessions of the colonial-industrial complex.

But alongside technical descriptions of the gasified Panhard truck, something else was afoot. Like Paul Graetz’s honorific, Bwana Tucke-Tucke, Lena claimed that the “simple souls” of Ubangi-Shari (modern Central African Republic) onomatopoeically baptized the Panhards “Koutou-Koutou, Fire Eaters,” an anecdote that flattered the Europeans as masters of powerful technologies that supposedly baffled Africans. Lena described the French members of the tour as “missionaries” of charcoal fuel. As “apostles of a new religion,” the French participants in the expedition distributed trinkets bearing “the monogram of the truck brand,” and it became jewelry “adorning the chest and the ears of 5,000 women, who regard it as the fetish of a powerful new god.” A grainy photograph accompanying the article shows two women with fabric wraps covering their lower torsos, leaving their upper torsos exposed, the PL logo worn as a choker.³ Buried in a humdrum article in a highly technical publication, the scenario might be seen as an automotive twist on a recurring colonial ethnographic motif freighted with gendered and racialized forms of power. It certainly was, but it was also much more.

Automobiles were indeed fetishized, but not by Africans. Rather, Europeans in Africa reframed them from mere means of locomotion into deities. In the metropole, the European audience experienced automotive empire not as a form of colonial administration but as entertainment, spectacle, and an act of consumerism. The interwar colonial-industrial complex was thus a two-way street. As much as colonial officials benefited from research and development undertaken by deep-pocketed private companies, those companies profited financially and symbolically from their association with empire.

Automotive empire was a project with many stakeholders that addressed multiple audiences. The interwar period is rife with examples of African automotive exploits mediated within Europe and across the world as advertisements for consumable goods and propaganda for colonial endeavors. Imperialism was never a matter of simply exporting European ideas and practices to the colonial realm. Instead, interactions with Africa shaped European actions and ideologies in the metropole.⁴ European ideas about everything from race and medicine to “development” and geopolitics emerged from colonial interactions and shaped

everyday life in Africa and Europe alike.⁵ Colonial medical experimentation informed the recommendations of doctors in Warsaw and Stockholm; imperial capitalism allowed consumers in Copenhagen and Vienna to enjoy the tropical fruits of African labor in the form of rubber bicycle tires or coffee and chocolate cake at their neighborhood café. Empire suffused everyday life in European societies—even those without colonies—but its influence was often attenuated because it was so seamlessly integrated in the realm of the mundane.⁶

Automotive empire, conversely, created a stage for states and private businesses to engage the conscious, direct attention of the metropolitan public in the interwar era. The age of colonial conquest and exploratory expeditions in unknown lands was over. The technocratic turn in colonial rule in the interwar period stripped African empire of some of its mystery and romantic allure.⁷ Motorization and road construction, as we saw in the previous chapter, were central to the technocratic turn, but automotive empire as rational, productive colonial governance always existed alongside automotive empire as the fascination with the automobile, roaring symbol of modernity, multiplied by the exotic allure of the “Dark Continent.” The imagery of automotive empire became ubiquitous in Europe in these decades. In 1931 alone, two cultural icons demonstrated the close relationship between cars and colonialism. In his debut, the little elephant Babar flees the tropics for France, where learning to drive a car cements his transformation from primitive to civilized. Meanwhile, the Belgian comic strip character Tintin travels to the Congo, where he explores the colony in a “trans-Saharan” model automobile, accompanied by his racially stereotyped Congolese “boy.”⁸

Such representations reveal that the colonial automobile was more than a tool of colonial rule and economic exploitation in Africa. It captivated the metropolitan public and rallied support for empire. An examination of the planning, execution, and subsequent mediation of Citroën’s *Croisière noire* (née Central Africa Expedition)—the most iconic colonial automotive extravaganza in the 1920s—demonstrates that the colonial-industrial complex of automotive empire proved as vital to metropolitan business and culture as it did to African colonial schemes. Interwar automotive spectacles were private-public collaborations that produced profits for metropolitan manufacturers and acclaim for colonial endeavors. But although the spectacle of automotive empire successfully captured the attention of metropolitan consumers, it did not translate to tangible benefits in Africa, for either colonizer or colonized.

The Colonial-Industrial Complex in a New Key

Before automotive spectacles could entrance metropolitan audiences, much coordination occurred behind the scenes. Following Georges-Marie Haardt and

Louis Audouin-Dubreuil's successful crossing of the Sahara in January 1923, the colonial-industrial complex's center of gravity shifted from Algeria's Southern Territories to Paris. André Citroën spent the remainder of the year extolling the virtues of the *autochenilles* in public forums. In early 1924, however, his firm began to plan a momentous study mission known as the Citroën Central Africa Expedition. While the mission has garnered historical attention for its spectacular nature, its planning and later presentation in the metropole reveal much about the colonial-industrial complex.⁹ Although the expedition was organized by the automobile manufacturer and undertaken using *autochenilles*, Citroën proved remarkably adept at addressing the fixations and concerns of the colonial administration, a benefit of the firm's careful cultivation of contacts in the French state. As the preference of colonial administrators and men on the spot shifted away from Citroën's *autochenilles* and toward Renault's six-wheeled colonial model in 1924, Citroën framed the Central Africa Expedition as an ambitious and multifaceted study mission that would organize the spaces of French empire more efficiently. The Central Africa Expedition retraced the path of the first trans-Saharan expedition before traveling southeast, crossing the equator, and reaching the Indian Ocean, covering some 17,500 miles between October 1924 and June 1925. Haardt and Audouin-Dubreuil led a convoy of eight *autochenilles* from Algeria to Madagascar, via separate sub-missions to South Africa, Mozambique, Tanganyika, and Kenya. The Citroën-produced map of the expedition, with its dark line outlining the French territories and no borders delineating the administrative divisions within the empire, indicates the overarching project of forging intercolonial connections in French Africa (figure 4.1).

Whereas the question of the Saharan automobile saw the French colonial administration use the rivalry between Citroën and Renault to experiment with colonial vehicles, the Central African Expedition saw Citroën leverage the French colonial project to his advantage. Correspondence produced before and after the mission demonstrates the alignment of public and private initiatives. In a report from the expedition organizers to the minister of colonies, a sense of shame underlay the opening line: "When looking at a map of Africa, one must first be struck by the poverty of the paths of communication throughout this immense continent and in particular among the three groups of colonies [North Africa, West Africa, and Equatorial Africa] that compose the French African bloc."¹⁰ Beyond the coasts of North Africa, France's colonies were remarkably and humiliatingly underdeveloped. Citroën described a continent "currently underprivileged in so many places" and lacking "the indispensable conditions for the evolution of human groups toward happiness. I decided to undertake it."¹¹ Like Henry Ford with his contemporary Fordlândia concession/company town in Brazil (a manifestation of US informal empire in the Western Hemisphere),

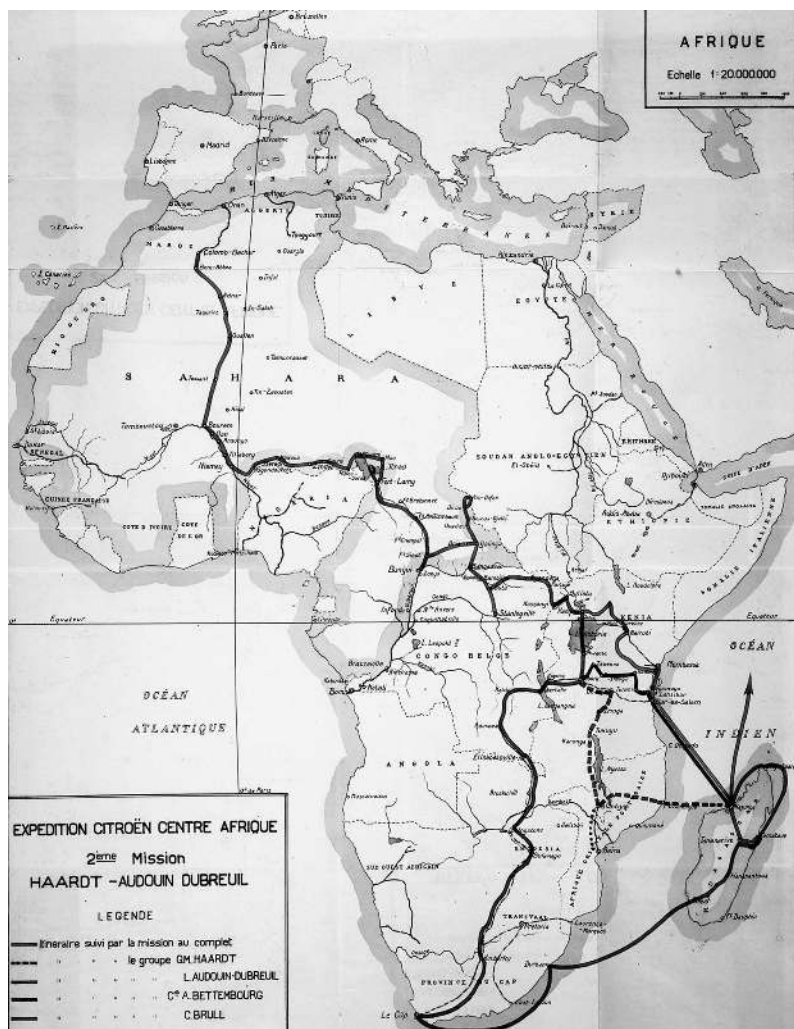


FIGURE 4.1. Map depicting the path of the Citroën Central Africa Expedition (October 1924–June 1925). Source: Musée du Quai Branly—Jacques Chirac, Fonds Georges-Marie Haardt, Paris, DA001101/63995.

the French magnate pursued a project meant to help his business and extend the interests of empire simultaneously.¹²

A map sent by Citroën to the Ministry of Colonies demonstrates his assertion that improved intercolonial connections would transform French Africa materially and in public perception. Horizontal lines trace desired latitudinal liaisons between French Soudan (Mali) and French Somaliland (Djibouti),

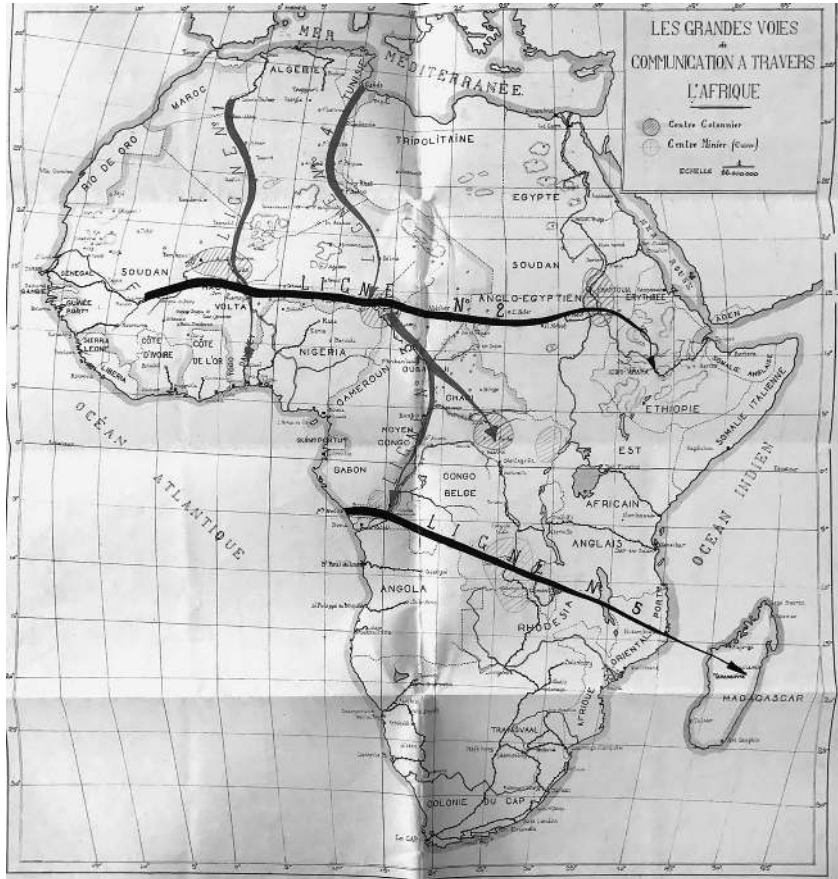


FIGURE 4.2. Citroën's projected trans-African road connections, 1924. Source: Archives Nationales d'Outre-Mer, Aix-en-Provence, France, 1AAPPOL/1054.

and between Pointe Noire in French Congo and Portuguese ports on the Indian Ocean to reach Madagascar. Meanwhile, vertical lines depict north–south roads that would connect Mediterranean ports to those on the Gulf of Guinea, via the rich cotton-growing zones of the Niger Valley, as well as to the Congo River Basin, with its nascent mining industry (figure 4.2). Albert Sarraut's *mise en valeur* agenda had argued that the rapid and economical improvement of land transport was the precondition for thinking and acting as a unified French African bloc, and as Citroën himself noted, Sarraut's program inspired the Central Africa Expedition.¹³

Public and private initiatives plainly intertwined in the 1920s, and both Citroën and representatives of the French state saw the animation of vast colonial spaces

(which they consistently described as empty or dead) as the central precondition to *mise en valeur*. Having produced a colonial car (albeit one that few colonial officials actually wanted to use), Citroën argued that stimulating intercolonial automotive connections would be his lasting contribution to the French civilizing mission, “opening new communications among our colonies and substituting powerful means of transport for those as obsolete as camels, cattle, donkeys, or even the odious practice of portage on the heads of men.”¹⁴ The holistic view of the French African bloc and the panoptic, continentalist approach to Africa, he predicted, would animate the slumbering continent through French ingenuity. Corporeal metaphors of healthy circulation pervaded interwar descriptions of African-scale infrastructure, from Citroën’s planned longitudinal and latitudinal “arteries” to the need expressed by Maurice Besson, an official in the Ministry of Colonies, for “a ‘capillary’ network of drivable roads” that would drain a region’s natural resources toward rail stations and ports.¹⁵

In a prospectus that echoed the arguments advanced by administrative proponents of trans-Saharan connections in previous years, Citroën sought to persuade the Ministry of Colonies to support his expedition. Improved mobility would serve the interests of colonists, functionaries, and tourists “who complain about the slowness of current communications” and demand “a means of transport other than railway or boat.” Businessmen, “for whom time is money,” would develop new enterprises, thus improving the “material and moral situation in Africa.”¹⁶ Motor vehicles would guarantee the national defense by ensuring the transport of military officers and colonial administrators in case of conflict, assuring order within the colonies and defense against foreign powers along colonial frontiers.¹⁷ In short, improved mobility would make France into an autarkic empire. Colonial goods would flow to France, but the French would no longer subsidize their imperial rivals. Successful terrestrial connections between North Africa and AOF, for example, “will put an end to the humiliating reliance on the [British] railway from Lagos to Kano for passage across Nigeria” and into French Niger. In fact, it would reverse this dependence, Citroën argued, and “take revenge on the English” by forcing them “to borrow our linking service for their journeys to northern Nigeria,” while also making inroads into the Nigerian market.¹⁸ Benefits in international relations would accrue not only through gaining a leg up on the competition but also by creating new avenues of cooperation. Citroën repeatedly stressed that the expedition would knit together a transcontinental Franco-Belgian bloc, “from Antwerp to Elisabethville [Belgian Congo], via Paris and Algiers,” strengthening the fraternal bonds forged during World War I.¹⁹

Citroën’s description of the Central Africa Expedition in the framework of *mise en valeur* consolidated the support of government officials. Citroën promised “a thoroughly prepared and methodically conducted mission,” not “a simple

raid where speed is the only concern.” Such assurances soothed colonial officials who worried that Citroën was only interested in the African expedition as a stage for advertising spectacles.²⁰ In the spring of 1924, the new minister of colonies, Jean Fabry, offered his approval of Citroën’s plan to establish transport arteries among France’s African territories as well as to initiate regular auto services between Algeria and the Niger Valley. Fabry wrote, “I believe that the realization of this dual program could have the most favorable results from both a political and economic point of view.”²¹ The minister of war, André Maginot, showed particular interest in Citroën’s expedition as a reconnaissance mission to yield further information about the Sahara to create a more logical and useful fueling infrastructure that would allow military automotive and aerial branches to work at peak efficiency. Maginot requested that the minister of colonies and the governor-general of Algeria do everything in their power to ensure Citroën’s success.²² The minister of colonies signed on to Citroën’s vision and gave the Central Africa Expedition the title of an official mission, requesting “a report on the economic, political, touristic, and sanitary observations you have gathered.”²³

With Parisian officials on board, French African officials mobilized to support the mission. The governor-general of Algeria, Théodore Steeg, reminded his subordinates of the state’s “strong interest” in the project and assured Citroën of the “comprehensive cooperation of local authorities,” particularly in the Southern Territories.²⁴ The French military assigned 220 soldiers to patrol the pistes of the Southern Territories along their planned path, while Jules Carde, the governor-general of AOF, stationed some 250 colonial troops at three different military posts to guarantee the security of the travelers.²⁵ But Citroën contributed to the imperial project as much as he benefited from it. The expedition stimulated the development of communications infrastructure in the Sahara, as Citroën covered costs to build and staff wireless telegraphy stations in exchange for a five-year franchise for telegrams along the planned Algeria–Niger line.²⁶ The wide range of support within the French government reveals that officials viewed Citroën as a partner in the common project pursued by the colonial-industrial complex, a trust built by the previous years’ collaboration to produce a Saharan automobile.

Preparing the Expedition

The initial plan would have seen the expedition cross the Sahara to French Sudan, veer east across Chad (AEF), and swing south to a variety of locations in AEF and Belgian Congo before tacking east, traversing Anglo-Egyptian Sudan and independent Ethiopia to reach French Somaliland. To support such a wide-ranging itinerary, French officials and Citroën’s agents ensured the transport

of more than eighty tons of supplies to dumps scattered across the continent in August 1924 alone, many of which rested hundreds of miles from the nearest port or railway terminus.²⁷ Export registers kept by Georges-Marie Haardt catalog the delivery of prodigious amounts of food, replacement parts, and fuel. For example, the supply dump at Tabora in British Tanganyika was located five hundred miles inland from the nearest port. It required delivery of 3,600 liters of gasoline, 390 liters of oil, forty kilograms of grease, and sixteen replacement caterpillar tracks, as well as two cases of champagne, one case of wine (three bottles of Bordeaux blanc, three Bordeaux rouge, three Bourgogne blanc, three Bourgogne rouge), and one case of mineral water (six bottles of Vichy Célestins, six Evian). Thoughtful preparation and interimperial cooperation meant that man and machine alike would be sustained—and even have access to civilized beverages—while traversing the continent.

In May 1924, less than six months before the expedition's departure from Algeria, Citroën sent a map to the Ministry of Colonies that depicted the complexity of supplying the expedition in detail (figure 4.3). The map traces six supply paths that penetrate the continent from every direction: Oran, Algeria, supplied the Algerian segment of the journey; Dakar, Senegal, supported French

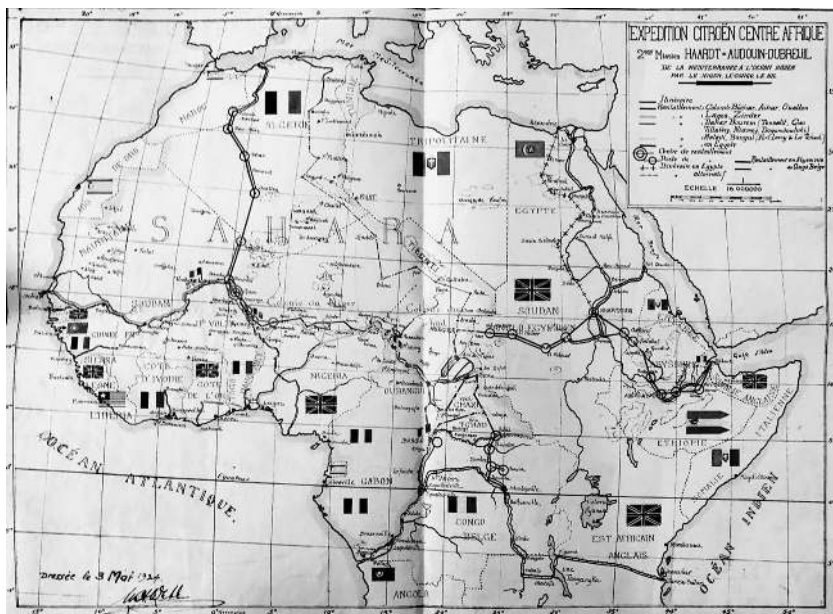


FIGURE 4.3. Citroën's original plan to supply the Central Africa Expedition, 1924. Source: Archives Nationales d'Outre-Mer, Aix-en-Provence, France, 1AFFPOL/1054.

Soudan and Niger; Lagos, Nigeria, provisioned Niger; Matadi, Belgian Congo, distributed goods to AEF and the Belgian territory; Cairo, Egypt, provided for Anglo-Egyptian Sudan; Djibouti, French Somaliland, was assigned to Ethiopia.

The plan is rife with paradox. On the one hand, the map of supply routes adhered to existing political geography, with preference given to working within French territories, which were by no means the quickest or most efficient paths. Such an approach accorded with the autarkic aims of *mise en valeur* and minimized the need to coordinate with foreign colonial administrations. On the other hand, it would prove impossible to traverse Africa without crossing foreign territory and securing the cooperation of other imperial powers. The Central Africa Expedition illustrates the tension, described by the historian David Arnold, between imperial self-conceptions “as virtually self-contained systems, even as mutually antagonistic enterprises,” and the real exchange of ideas and practices—and even outright cooperation—among nominal imperial rivals.²⁸

Primary among these collaborators were the Belgians, partners in the proposed “Franco-Belgian bloc.” Citroën himself engaged in direct diplomacy with King Albert I of Belgium, whom he had met when screening the film of the initial Saharan crossing in Brussels in 1923. The industrialist flattered the monarch with appeals to a mutual defense bloc “from Antwerp to Elisabethville, via Brussels, Paris, Algiers, Timbuktu, Chad, and the Congo.”²⁹ In May 1924, Citroën’s right-hand man, the Belgian Haardt, wrote to the Belgian ambassador in Paris, requesting construction of an access road from the AEF / Belgian Congo frontier toward Stanleyville in the Belgian territory, “so that the French explorers could find a friendly welcome among their Belgian comrades to help them overcome the material obstacles of the road.”³⁰ The ambassador gave Haardt the green light to contact Martin Rutten, governor-general of the Belgian Congo, soliciting the governor to “give orders to local authorities” to clear a three-meter-wide path and build small culverts over backwaters and muddy bogs.³¹ When the Citroën party entered the Belgian Congo in March 1925, they were overjoyed to find “our Belgian friends have opened up on our behalf a breach seven-hundred kilometers in length through this impenetrable mass [of forest], combining the efforts of forty thousand natives to accomplish the work in a few months.”³² To the French, the road was a cooperative act of civilization (one that depended on the hard labor of Congolese workers).

The British were equally important collaborators, particularly after a meeting between Citroën and the president of the French Republic, Gaston Doumergue, only a few days before the planned departure from Algeria. Although initial planning called for the second half of the journey to cross to French Somaliland on an east–west axis, Doumergue was “justly preoccupied with the isolation and remoteness of Madagascar” and inquired whether the organizers could somehow integrate the island into their expedition.³³ Responding to Doumergue’s request,

expedition participants canceled the planned crossing through Sudan to French Somaliland and instead split into four teams in Uganda, taking sub-missions to the ports of Mombasa, Dar es Salaam, Mozambique, and Cape Town before ferrying across the Indian Ocean to reunite and end their journey in Antananarivo. Paradoxically, the foresight and careful planning that made the expedition a true reconnaissance mission rather than a *raid* was quickly scrapped to accommodate the president's suggestion. The spectacle of a longer crossing from Algeria to Madagascar was not Citroën's intention but instead the result of Doumergue's intervention.³⁴ The French state was just as invested in a colonial spectacle that garnered the attention of the public as was André Citroën.

This new itinerary took the expedition through British territories in eastern and southern Africa. Citroën had hired the retired British major general E. D. Swinton in 1922 to represent his firm's interests in London, and Swinton became a liaison to officials in the British colonial administration and the military. Swinton provided Citroën with information about roads and terrain, as well as contacts in territories such as Kenya and Nyasaland (Malawi). In October 1924, Swinton secured the support of British colonial officials in Africa. Counselor Lancelot Oliphant of the British Foreign Office wrote that the Colonial Office approved the passage of the Citroën expedition and "express their readiness . . . to inform the Governors of these dependencies of the prospective movements of the party, and to instruct them to afford such facilities as may be required."³⁵ The logistical planning of the mission sheds light on the tight collaboration between Citroën and French officials, as well as the support they cultivated among other colonial powers. Indeed, Haardt and Audouin-Dubreuil stressed "how grateful the Citroën Central Africa Expedition is to the benevolent cooperation it enjoyed throughout its itinerary: the experienced collaboration of the French Colonial Corps, kindly assistance of the Belgians, loyal support of the English, [and] cordial welcome of the Portuguese" in Mozambique.³⁶ While the Central Africa Expedition was French in composition and in its projected benefits, it was a transimperial project that combined the technical expertise and vision of Citroën's firm with the administrative, diplomatic, and military branches of the French empire in colonies across Africa, as well as the moral and material support of other European colonial powers.

Space and Spectacle in the Central Africa Expedition

The interwar era of automotive empire produced countless travelogues of motorized African expeditions, and the genre itself merits concerted analysis.³⁷

When comparing the published travelogue of the Central Africa Expedition to Paul Graetz's trans-African journey fifteen years previous, the relative *absence* of the automobile in the French expedition is striking. Automotive technology had improved so significantly in the intervening decade and a half that the litany of breakdowns that defined Graetz's crossing was a thing of the past. Descriptions of the *autochenilles* overcoming obstacles appear here and there, but the kinesthetic and emotional experience of driving the car is comparatively absent. For Haardt and Audouin-Dubreuil, veterans of the trans-Saharan expedition, the physical and intellectual experience of driving in Africa merited little discussion; it was no longer a novelty by the mid-1920s. Instead, the written travelogue repeatedly grappled with space and the relations between the disparate parts of French Africa. In the process, it narrativized the project of creating the "French African bloc" for a popular audience. On a journey that covered over seventeen thousand miles, the ability of the *autochenilles* to overcome Africa's immense spaces and diverse landscapes brought pleasure and power, feelings expressed through detailed descriptions of African peoples, flora, and fauna.³⁸ Travel writings presented imperial peripheries to the metropolitan public, and the French audience for automotive empire consumed African spaces.³⁹

Upon entering the Sahara in the fall of 1924, the authors offered an archetypal description of the desert, in which an invisible barrier separates the space of European civilization from that of timeless African nature. Describing their departure from the Algerian commune of Colomb-Béchar, they intoned, "The rail stops here. With it the intense life of Western civilization ceases. Beyond Colomb-Béchar the desert begins." In their rendering, civilization is defined by transport, just as it had been for Rudyard Kipling. The intensity that defines the West is a product of speed and movement. Their automotive entry into the desert, then, is a violation, where "the noise of the cities is nothing more than a distant rumor; the great Silence approaches." The Sahara quickly enveloped the travelers, that "immense adversary . . . whose captive we remain even after we have conquered it!" The scale and emptiness of the desert ergs seemed supernatural, leading these putatively rational Europeans to ponder, "Is it not the kingdom of the fairies, or of the djinn, the inviolable refuge of all the beings of Saharan legend?" The *autochenilles* penetrated farther south. In the Tanezrouft between Algeria and AOF they found "absolute desert" and "life without hope." With "no landmarks . . . direction is difficult, and to lose it is to perish." The desert landscape destroyed the travelers' objective eye, rendering them helpless before the power of the land. "Amidst layers of air perpetually in motion," they write, "refraction goes crazy, objects lose the fixity of shape. Everything is in motion, deforms, lengthens, or diminishes." To drive in the desert was to suffer from "odd, tiring, and obsessive hallucinations like fever dreams." The landscape confounded their perception of

time and space, requiring them to measure their passage not in miles or days but by “the length of our beards and the increasing dirtiness of our faces, which it is out of the question to wash.”⁴⁰

These renderings of space reveal the environmental assumptions of colonialism and how automotive empire claimed to address them. Given the seemingly transformative mobility of the automobile, it was tempting to draw a clean dichotomy between mobile Europeans and static Africans, and some Europeans certainly did so. But Haardt and Audouin-Dubreuil’s descriptions imply an important distinction. In temperate Europe, the landscape and atmosphere were understood to be fixed, whether by nature or by human actions, allowing humans to move at speed across stationary spaces. In Africa, the landscape seemed frighteningly and dangerously mobile, as in the hallucinatory apparitions of the Sahara. Such dynamic environments, Europeans believed, created “primitive,” nomadic societies that demanded colonial powers fix them in space.

Representations of automotive empire rhymed across time and space, and the historian is left to wonder if various authors emulated common themes and images, or if those tropes were simply so irresistible that they emerged organically in separate contexts. An encounter between an automobile and a lion in the bush was a recurring image that rendered the colonial encounter in spectacular symbolism, as seen on the cover of Paul Graetz’s travelogue. When Louis Audouin-Dubreuil’s team navigated through the Maasai lands of Kenya and Tanganyika, the traveling party viewed countless animals, including lions caught in the headlights of the automobile. By the time the English translation was published in the United States later that year, the legend had grown, whether through Audouin-Dubreuil’s elaboration or liberties taken by the translator. In the English version, the Maasai lands were “in terror of lions, which hold sway over the district at nighttime.” In this context, Audouin-Dubreuil’s encounter with a lion was particularly significant. As rendered in the English translation, “For a few seconds, at a distance of less than twenty yards, our cars and the animals confront each other: the African lion, the fiery-eyed king of beasts, which in every age has reigned absolute master in the forest, the savanna, the plain—and the modern beast, the eyes of which are our headlights and powerful projectors throwing out a blinding white ray. For a few seconds a silent struggle between these two beasts takes place in a kind of fascinated torpor, only broken by the regular beat of the engine. Then the lions slowly go away and disappear in the tall undergrowth.”⁴¹

This allegory of automobile and lion had an ageless quality. The entire struggle between the colonizing project of European civilization and the elemental power of Africa is reduced to the lion, Africa’s sigil, slinking into the bush to make way for European progress. That various authors and artists rehearsed the encounter across decades demonstrates the timelessness of European perceptions of

colonial mastery through technological progress, as well as the sense that *this encounter*, whether in 1910 or 1925, whether truthful or a tall tale, was the one that signaled the dawn of a new era.⁴²

Driving across Africa also shaped participants' understandings of themselves and communicated that transformation to a wider public through the published travelogue. A common theme in frontier travelogues—whether set in colonial Africa, the American West, or the Australian interior—is the contact with mysterious and dangerous lands that, with geographic distance and temporal perspective, transforms into the romance of roughing it.⁴³ After lamenting the bewildering Sahara, the authors later scoff at an offer to sleep in a hut in southern Chad: "The proposition nearly offends us. To sleep under a thatched roof! Us! The great nomads, whose bedroom each night has a ceiling of stars!"⁴⁴ Traveling across Africa and collapsing its spaces through the automobile heightened the romance of the continent retrospectively. When the expedition split out on sub-missions from Uganda, Louis Audouin-Dubreuil navigated through British Kenya to the port of Mombasa. In another reflection exclusive to the English-language version of the travelogue, he struck a melancholic note, gazing at the Mombasa harbor and wondering, "Where now are the sand dunes and the forest? Where is all the poetry of the Dark Continent we have crossed?" As he gazes upon a British cruiser, he believes that Africa "still possesses its poetry," but it is "the poetry of the future, the poetry of mechanical power."⁴⁵

This tone endured when the separate sub-missions reunited in Madagascar to end the expedition. Three decades after Joseph Gallieni sought to remake the island through French roads, there were still no permanent roads from the ports of Majunga or Tuléar to the capital of Antananarivo. But, according to the authors, "through the energetic initiative of Governor-General [Marcel] Olivier, the tracks surveyed or traced by the autochenilles have since been built."⁴⁶ Once again, the automotive spectacle had a lasting, material effect on the French empire. As the expedition rolled into the capital, Governor-General Olivier greeted it at Place Gallieni, under the watchful eye of an imposing statue of the island's first governor. Believing that they had realized Gallieni's vision, the authors struck a bittersweet note. "A new era has arrived," they wrote, and as radio transmitters broadcast news of their success to Paris, "our thoughts return to marvelous Africa, among the sands, savannas, and forests." They experienced their successful traverse as a form of loss as well, "because the Dark Continent, penetrated from all sides, is stormed by progress. The mystery of Africa will end. Our white cars were nothing more than an avant-garde. . . . The old world suffocates: to conquer space, it eliminates distance—and the charm of the unknown."⁴⁷ Beyond the specific details of peoples and places in Africa, the members of the expedition translated the behind-the-scenes framing of Citroën and

the colonial administration—to remake space through automotive technology—for the reading public. The Central Africa Expedition was a success. Citroën's longitudinal traverse more than doubled the length of Paul Graetz's latitudinal crossing, in half the time. While the participants expressed pride at their exploits, they believed that the mysterious romance of African spaces would be soon displaced by the technocratic efficiency of automotive empire.

From *Expedition Centre-Afrique* to *Croisière noire*

Or would it? André Citroën, responsible industrialist, had an alter ego in the form of André Citroën, public showman. This was, after all, the man who festooned the Eiffel Tower with 250,000 lightbulbs to spell out his name for over a decade, creating an advertisement visible for sixty miles in every direction.⁴⁸ Recall that as Citroën planned the expedition over the course of 1924, it became increasingly clear that the autochenilles would not serve as the motor vehicle of choice for colonial administrators and the French military. The ever-nimble industrialist pivoted strategically; rather than proving its own value as a quotidian colonial car, the autochenille would be a tool of survey and spectacle. The Central Africa Expedition was not selling Citroën's autochenilles but the distinctive aura of automotive empire *à la Citroën*. Although Citroën's post-expedition reports to the colonial leadership promised lasting change would result from the successful crossing, the archival record tells a different story. Pre-mission correspondence fills files, but reference to the mission after 1924 within the colonial administrations of Algeria, AOF, or AEF is largely absent. It was in the public sphere that the Central Africa Expedition had the greatest lasting effect, creating a new, metropolitan outlet for the colonial-industrial complex. As the scholar of empire Adriana Craciun has argued, the divide between "serious" exploration and colonial spectacle is a false one, as each supported the other in the age of imperial mass culture.⁴⁹ While Citroën and colonial administrators stressed geopolitical and economic motivations and outcomes, the public consumed Africa as a cabinet of curiosities, natural and human.

Automotive adventures were central to the formation of that imperial mass culture in the 1920s. Press coverage during and after the expedition effected a subtle but meaningful shift. All official correspondence used the generic, descriptive "Citroën Central Africa Expedition." But colloquially, and increasingly in Citroën's official publicity, the expedition morphed into the *Croisière noire*—the "Black Cruise" or "Black Journey" (in the official English translation of the travelogue)—with all the racial implications of traversing the "Dark Continent."

The term never appears in the official documentation produced before or during the expedition but became the dominant appellation after the release of the official film, *La Croisière noire*, in the spring of 1926. The two designations of the crossing—technocratic Central Africa Expedition and spectacular *Croisière noire*—evoke the Janus-faced nature of automotive empire.

This was no accident. The same features that made the Central Africa Expedition a methodical mission rather than a *raid* allowed metropolitan audiences to experience the *Croisière noire* as an entertainment spectacle. The mission's eight autochenilles transported not only the two principals and several drivers and mechanics, but film director Léon Poirier, whom Haardt had invited to his office at the Quai de Javel, wooing him by promising a "great adventure."⁵⁰ Joining Poirier were painter Alexandre Iacovleff, who was responsible for ethnographic records, and Eugène Bergonier, who coordinated the zoological mission and collected specimens for the National Museum of Natural History in Paris. Citroën's crossing produced a mountain of documentation for administrative analysis and public display, a condition of the official mission received from the minister of colonies. Camera operator Georges Specht shot nearly seventeen miles of film and eight thousand photographs, leading to the production of some fifty documentary films. Alexandre Iacovleff created over five hundred paintings, drawings, and sketches. The zoological mission of Eugène Bergonier collected no fewer than three hundred mammals, eight hundred birds, and fifteen thousand insects. After two days' hunting along the border between Ubangi-Shari and Anglo-Egyptian Sudan, wrote the mission's leaders, Bergonier's "taxidermy 'laboratory' looks like a charnel house."⁵¹ As the expedition advanced, Citroën received updates via telegram at his Paris office, which he then disseminated to the press to give the mission the flavor of a serialized adventure in hundreds of articles. Citroën relayed notes of encouragement to the expedition participants in response, often noting the admiration of dignitaries such as the kings of Belgium and Spain, national officials such as Gaston Doumergue and Édouard Daladier, and colonial executives such as Algeria's governor Théodore Steeg and Lucien Saint, the resident-general of Morocco.⁵² The post-expedition press coverage followed the exploits of the principals as celebrities, as when Georges-Marie Haardt and André Citroën became Officers of the French Legion of Honor in September 1925.⁵³

The coproduction of colonial spectacle by Citroën and the state continued. While Citroën and Haardt gave interviews and lectures in the latter half of 1925, Poirier, Iacovleff, and Bergonier prepared public exhibitions. At the center of public discussions of empire since the expedition began in October 1924, the *Croisière noire* dominated the French media in 1926. The first to arrive was Poirier's film, composed of ethnographic vignettes of African peoples, scenes of

African fauna (usually felled in hunts), and clips of Citroën's autochenilles on the move across, over, and through all types of terrain.⁵⁴ According to the film scholar Peter Bloom, the combination of automobility and the movie camera created "the illusion of a totalizing geographic picture," one that compressed the scale and diversity of French Africa into seventy short minutes. French technology, colonial supremacy, and will combined to give meaning to an Africa rich in energy and resources but lacking in purpose, linking diverse peoples and landscapes in a common, French-directed project.⁵⁵ The film thus advanced the official message of an impressive French African bloc, knit together and rendered spectacular through Citroën's spin on automotive empire.

Poirier's *La Croisière noire* premiered on March 2, 1926, to a gala at the Opéra Garnier in Paris, attended by "ministers, marshals, ambassadors, bankers, stars, academics," as well as the French fathers of cinema Louis Lumière and Léon Gaumont.⁵⁶ Advertisements for the film ignored vehicles entirely, instead depicting exoticized African individuals as part of a broader European current of commodity racism.⁵⁷ Most prominent in these advertisements was Nobosudru, a Mangbetu woman from the Haut-Uele region of the northeastern Belgian Congo. A photograph of a nude Nobosudru in profile accompanied the official invitation to the film premiere, and her iconic silhouette graced numerous iterations of advertising on film posters and in print across the globe (figure 4.4).⁵⁸ Nobosudru was a sexualized African subject whose image was endlessly reproduced and exploited *in absentia* to titillate metropolitan audiences, making her but the latest in a long line of fetishized Black women that led from Sarah Baartman, the "Hottentot Venus," to that icon of interwar Parisian exoticism, Josephine Baker.⁵⁹

After a handful of screenings at the Opéra, the film moved a few blocks away to the 1,250-seat Théâtre Marivaux, where it was shown three times daily. A reproduction of Alexandre Iacovleff's painting *The Expedition* and a full-page map of the crossing graced the film program. A full orchestra accompanied the film, performing a repertoire of orientalized compositions including "Suite Algérienne" and "Orient et Occident" by Camille Saint-Saëns and various pieces by the Russian composers Modest Mussorgsky and Peter Tchaikovsky, as well as Claude Debussy's "Golliwog's Cakewalk," which was inspired by racist American minstrel shows.⁶⁰ From the Marivaux, where it "broke all records of receipts," the film toured widely throughout France in the summer and fall of 1926 and returned to Paris for screenings at the thirty-four-hundred-seat Gaumont-Palace.⁶¹ The film, "dedicated to the youth of France" (as stated in the opening titles), then attracted thousands of children to free screenings in Paris and the provinces.⁶² From 1926 to 1928, the film toured the world, augmented by private screenings hosted by Citroën and Haardt for King Albert I in Brussels; King Alfonso, Queen Victoria,

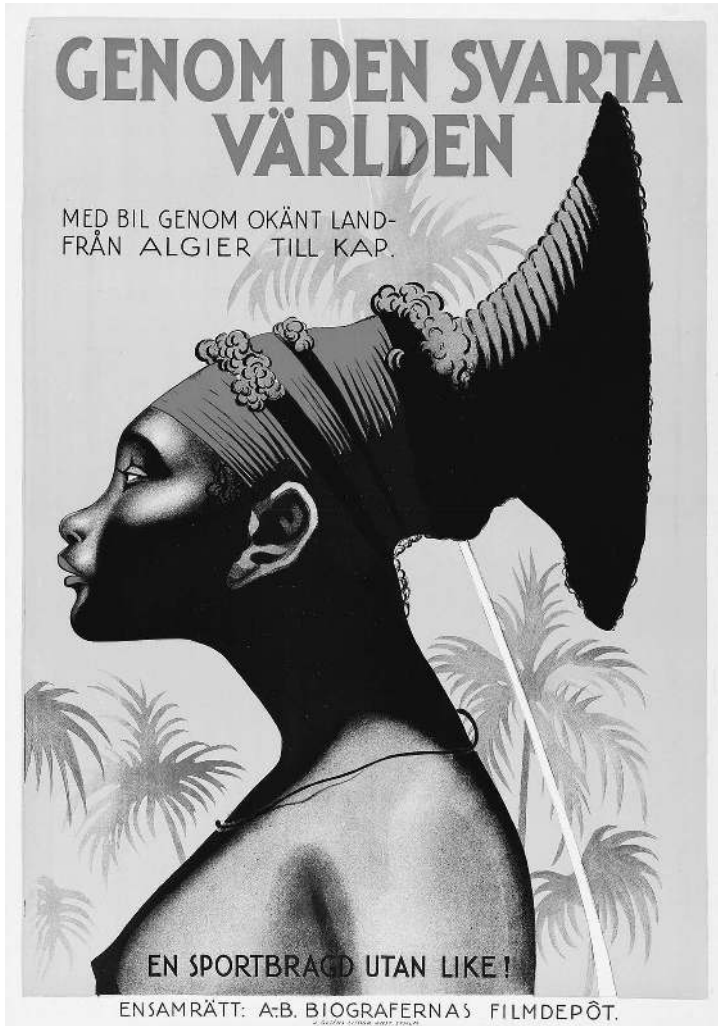


FIGURE 4.4. Swedish-language film poster for *La Croisière noire* featuring Nobosudru, 1926. Source: Bill Waterson / Alamy Stock Photo.

and General Primo de Rivera in Madrid; the Duchess of Aosta in Rome; and the Prince of Wales (later King Edward VIII) and the Duke of York (later King George VI) in London.⁶³

The multimedia staging of the film over the course of years—from its exoticist advertising and musical accompaniment to its circuit throughout France and Western Europe—brought attention to Citroën and the French imperial mission. But when combined with the support of other imperial powers and expressions

of gratitude to colonial administrators from Belgium, Britain, and Portugal, it also cast automotive empire as a collaborative project for audiences of European consumers and white settlers in Africa. The success of the *Croisière noire*, wrote an author in the British *Mombasa Times*, demonstrated “the indomitable courage and insatiable spirit of enterprise of the white race.” The rhetoric of collapsing African space echoed in Kenya: “One can already feel that the dimensions of the world have shrunk thanks to the power of steam, gasoline, electricity—and the conquering spirit of man.” The result, gushed the author, was a new, cooperative vision for the continent in which “we see our brothers of Morocco, Egypt, Rhodesia and Cape Town come closer to us. We are witnesses to the annihilation of distance. We view with satisfaction and pride that civilization spreads across our vast continent.” The fact that Frenchmen accomplished the feat did not diminish their joy, and the author ranked Citroën’s triumph on par with that of the Livingstones, Burtons, Drakes, and Raleighs of the British past.⁶⁴ In the British colonial journalist’s framing, automotive empire of the 1920s was a common project of white Europeans. Little wonder that the staging and advertising of the film stressed racial difference, especially through depictions of peoples and practices deemed particularly alien or bizarre.

From Spectatorship to Experience

The film’s French tour in the spring and summer of 1926 allowed metropolitan audiences to gaze upon automotive empire, but in fall 1926, audiences began to *experience* it. The Marsan Pavilion at the Louvre hosted a sumptuous *Croisière noire* exposition staged by the National Museum of Natural History and the French Geographical Society beginning in October. Colonial exhibitions, writes the historian Timothy Mitchell, collected and arranged artifacts for the visual consumption of metropolitan audiences, creating an illusion of verisimilitude, as well as metropolitan confidence in imperial progress.⁶⁵ The Louvre exhibit offered a totalizing representation of Africa that complemented the film. Alexandre Iacovleff created great murals in a style inspired by Mangbetu designs that framed the exhibition entrance. Visitors moved among ethnographic dioramas of “typical” African life, broken down by region, and encountered 382 pieces of African arts and crafts, nearly 300 animal specimens, geological and mineralogical samples, maps and reports of the expedition, and three rooms filled with photographs and Iacovleff’s paintings. Before leaving, visitors could purchase photographic prints in the gift shop, bringing a small souvenir of Africa home with them.⁶⁶

The press covered the exposition enthusiastically. *Le Temps* noted the “methodical care” with which Citroën publicized the *Croisière noire*, moving from the film

to a spring exhibition of Iacovleff's paintings to the fall exposition at the Louvre. *Le Matin* and the *New York Herald* described how the organizers unveiled the various exhibits to maximize public interest: "This exposition . . . will complete the profound impression produced by the film."⁶⁷ A correspondent from Toulouse marveled at how exoticism "conquered" Paris, with a heaving crowd at the exposition growing "more numerous by the minute."⁶⁸ While at once responding to and fueling the contemporary exoticist vogue, reviewers were struck by both the novelty and seriousness of the exposition. One gushed, "Never perhaps has an exposition presented, in the domain of art and written documentation, an attraction so essentially new."⁶⁹ Another pool report highlighted the "remarkable eclecticism" of the presentation, "which, while remaining in the domain of art and documentation, has the advantage of offering the public the powerful attraction of a new spectacle."⁷⁰ In discussions of Citroën's role, the industrialist emerged as a philanthropist rather than a crass capitalist. According to the media, Citroën's vision and sponsorship made it so that the *Croisière noire* "is now ranked among the number of feats that count. It would be foolish to see in this expedition only an advertising event in favor of its organizer."⁷¹ Citroën could not have advertised more effectively if he had tried.

The consumption of imperial spectacle through the *Croisière noire* diffused ever further. In late 1926, parents could buy their children Georges-Marie Haardt-approved toys of the expedition, "with all its characters, all its accessories," including autochenilles, palm trees, and camels "reconstructed in lead."⁷² The obsession with Nobosudru and her contribution to the exoticist fad that exploded onto the scene with Josephine Baker's Parisian premiere in the fall of 1925 led the fashion designer Madame Agnès to create an ornate hat decorated with velvet ribbons that emulated Nobosudru's striking profile. Baker modeled the hat, explicitly connecting these two icons of the interwar French obsession with Black women, one born in Saint Louis, the other in the Congo (figure 4.5). In the write-up, the designer credited the explicit inspiration of the *Croisière noire* film, claiming that if "these African women, often so ugly, could be made pretty" with such striking headwear, "how charming would our *Parisiennes* be" wearing similar accessories.⁷³

The exploitation of the racial exotic as spectacle continued into the Christmas season. At the Agnèsville nightclub in Paris, "the *Croisière noire* was, for 1926, the order of the day." At a costume party, visitors dressed up as Josephine Baker and stereotypical "Hottentot and Sudanese graces," sported blackface and septum rings, and danced "deliriously" to the "most stupefying crazy rhythm" of "the Charleston."⁷⁴ The spectacle of the *Croisière noire* had moved from the silver screen to the realm of popular appropriation and reenactment, merging with other cultural signifiers to become part of a generic, racialized Parisian "exotic" of the mid-1920s that commodified Black cultures on both sides of the Atlantic.

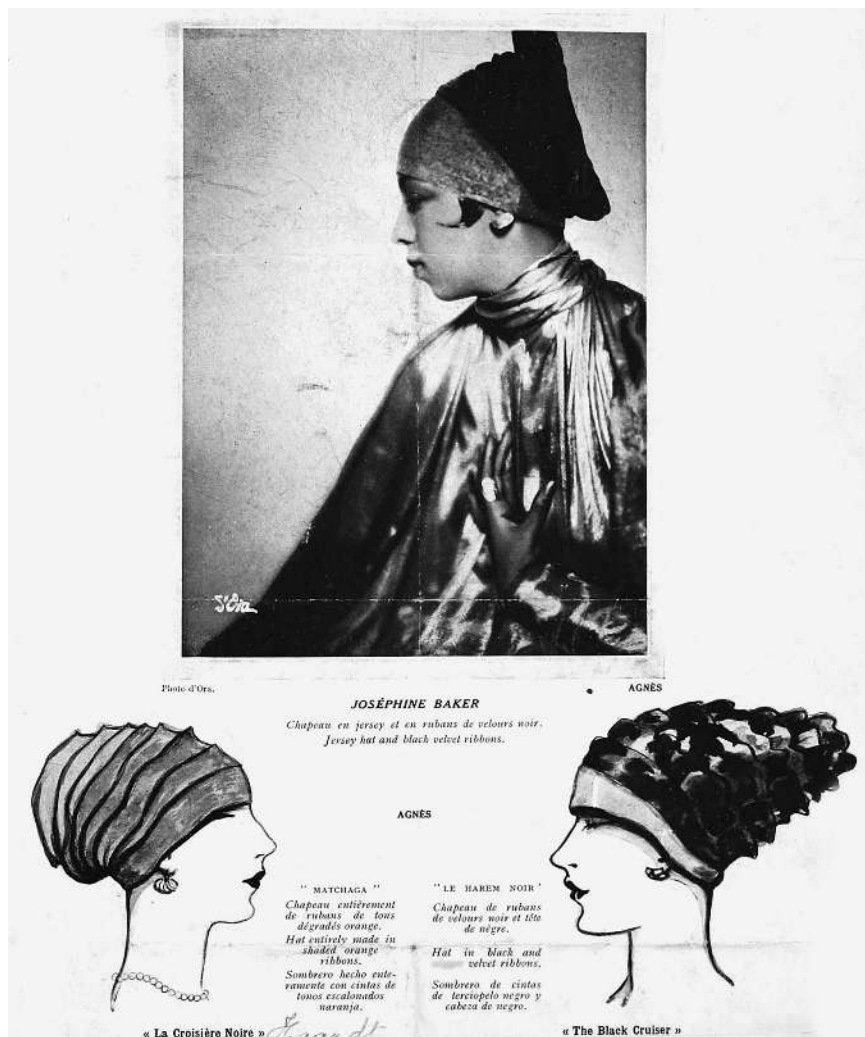


FIGURE 4.5. *Croisière noire*—themed advertisement featuring Josephine Baker, ca. 1927. Source: Musée du Quai Branly—Jacques Chirac, Fonds Georges-Marie Haardt, Paris, DA001144/64104.

The effectiveness of the *Croisière noire* as a metropolitan spectacle can be seen in its multiplying iterations and the ways that varied industries, from film to fashion, profited off Citroën's expedition. But Citroën and colonial officials had always been convinced that publicizing the crossing would offer "sound general propaganda" that would also "turn the spirit of the youth toward colonial affairs."⁷⁵ Spectacle, so often associated with mindless consumption, could be edifying. Parisian

pupils took field trips to watch the film and tour the Louvre exposition. One class of boys, taught by the cousin of camera operator Georges Specht, visited the exposition on November 9, 1926. The pupils then wrote reports on their experiences that testify to the success of the *Croisière noire* as a didactic spectacle. Each student designed and illustrated the cover of his report, and common themes emerged. Recurrent images included geometric designs that echoed Iacovleff's Mangbetu motif, a map of Africa with the path of the crossing marked in red or black ink, a profile of Citroën's distinctive autochenilles, and his signature double chevron emblem (figure 4.6). The children described the crossing as a patriotic triumph. One wrote that Citroën proved "that the French flag could fly everywhere" and that his expedition "renewed those of Stanley, Livingstone, and Brazza." Citroën's vision and foresight, wrote another pupil, "made a big step for his industry, and he distanced himself from his competitors in a just and glorious manner."

According to one student, "expeditions like this are useful; they bring honor both to the country as a whole and to the organizer Mr. Citroën."⁷⁶ Historians often struggle to trace the audience response to cultural productions, but these boys' reports confirm the wide-ranging influence of the colonial-industrial complex, as well as the realization of the mission's propagandistic and didactic goals. That the students associated Citroën's logo with the map of French Africa benefited the manufacturer and the empire alike.

In 1927, the various public spectacles of the *Croisière noire* closed. The book arrived to great fanfare, and as one advertisement proclaimed, "The film is gone, the book remains."⁷⁷ To complement the standard edition (cost: 15 francs), the publisher produced a special edition for young readers and a deluxe, limited edition printed on Madagascar paper (300 francs). Iacovleff's colorful "Mangbetu" embellishments and over one hundred photographs and paintings illustrated the large-format special edition. A review in the newspaper *Dépêche coloniale* described the book as a complement to the film that filled in the feelings and perceptions of the participants. As a piece of "colonial propaganda . . . it has marked its place in all the schools of France." The seriousness of purpose of the Citroën expedition had been communicated to the public as the extravaganza of the *Croisière noire*. Thus, "the principal merit of this book . . . lies in having rendered tangible and living the unity of French Africa."⁷⁸ An English translation appeared the same year, *La Crociera nera* appeared in Italian in 1928, and *El Crucero negro* in Spanish in 1929. The influence of the *Croisière noire* endured; Citroën exhibited trophies from the expedition at the 1931 Colonial Exposition in Paris, and that same year he launched the Third Haardt-Audouin-Dubreuil Mission, the "Citroën Central Asia Mission," which was known colloquially by the racist moniker *Croisière jaune* ("Yellow journey").⁷⁹ A trans-Canadian *Croisière blanche* ("White journey") followed in 1934, the same year the company went bankrupt.



FIGURE 4.6. Cover of a pupil's report following visit to the *Croisière noire* exhibit at the Louvre, 1926. Source: Musée du Quai Branly—Jacques Chirac, Fonds Georges-Marie Haardt, Paris, DA001197/65311.

André Citroën died in July 1935. At the end of the year the tire manufacturer Michelin took over *Automobiles Citroën*.⁸⁰

The *Croisière noire* was a years-long spectacle for public consumption through which the colonial-industrial complex brought attention to the overseas activities of the French empire. As the historian Vanessa Schwartz has argued of



FIGURE 4.7. Detail of a Japanese *manga* map of the world, 1932. Source: The Protected Art Archive / Alamy Stock Photo.

fin-de-siècle Paris, entertainment spectacles underlay a shared mass culture, which created “a dialogue between its producers and consumers.”⁸¹ The French theorist of spectacle Guy Debord describes it not as “a collection of images” but rather “a social relation among people, mediated by images.”⁸² The “dialogue” created by the spectacle of automotive empire helped forge a new “social relation”: an imperial-minded citizenry. The *Croisière noire* colonized Paris, the capital of the French empire, and its iconic institutions, from the Opéra to the Louvre. It also provided a platform for interimperial cooperation, connecting European administrators across Africa. The successive media presentation of the crossing created a cultural dialogue not only within France but across much of the Western world and, to a degree, the globe. Indeed, a 1932 Japanese *manga* map of the world shows two autochenilles crossing the Sahara as Bedouins and camels look on; farther south, in AEF, a Poirier-like figure films animals (figure 4.7). The *Croisière noire* made automobility the very essence of France’s African empire.

The spectacle of automotive empire garnered attention for manufacturers and colonial endeavors in the 1920s, but the European vogue of the *Croisière noire* largely avoided the actual use of cars. This was an uncomplicated, adulatory

representation of empire in which the presence of the automobile was often implied. The motor vehicle brought the riches and exoticism of Africa to the center of European life while evading the problems that hounded its mundane use in the colonies and bedeviled automotive empire as an administrative form. Further, such spectacles and expeditions became sites of interimperial cooperation and connection precisely because they were low-stakes and ephemeral: any connections they forged were fleeting and did not threaten to destabilize the existing colonial order.

Following the competition to create a colonial car and the subsequent production of metropolitan spectacle through the *Croisière noire* in the 1920s, the technological innovations and cultural developments that defined automotive empire were largely complete. This marked the end of the first stage of automotive empire, defined by technological and infrastructural experimentation and the progressive alignment of the colonial automobile and metropolitan mass culture. Moving forward, colonial officials formed comprehensive models of automotive empire that were particularly attuned to conditions and goals within specific colonies and empires. These developments were fundamentally technological, and part II of this book examines these models in turn. As the next chapter shows, from the British perspective, the shortcomings of automotive empire endangered the entire imperial project in Africa and outweighed any potential benefits to be gained by building roads and expanding motor vehicle use.

Part II

INTERWAR MODELS AND PROGRAMS

THE BRITISH MODEL

Automotive Threats to the Status Quo

The *Croisière noire* showed that automotive empire made for an attractive spectacle, but motor vehicles, having become both cheaper and more widely available in Africa by the 1920s, also emerged as mundane instruments of business and administration in Africa during the interwar decades. As a result, thrill-seeking European entrepreneurial imperialists continued to use cars to garner attention in African colonies, but their endeavors became increasingly derivative and self-serving, more individualist than imperial in their motivations and effects. In terms of impact on life in the colonies, entrepreneurial imperialists were displaced by colonial entrepreneurs who used motor vehicles to advance their business.

Consider the case of Inaco Conforzi, an Italian who lived and worked in the landlocked British protectorate of Nyasaland (Malawi). Conforzi arrived in 1907 to serve as manager of a British East Africa Company tobacco plantation. The young Italian's methods, honed at an agricultural school and on his family's estate in Italy, clashed with those of his employer. He quit in 1909 and purchased his own estate near Cholo, in southern Nyasaland. By 1920 Conforzi was the protectorate's third-largest producer selling to the British Imperial Tobacco Company.¹ Conforzi expanded his operations into the highlands of northern Nyasaland in the 1920s, and beginning in 1922 he experimented with producing sun-cured tobacco, a departure from the dominant fire-cured form. Conforzi encountered problems because the more delicate sun-cured variety required quick transport with minimal handling. His estates outside Lilongwe, in the highlands west of Lake Malawi, were too far from the rail terminus at Blantyre

that would convey his product to port in Mozambique. British tobacco companies preferred the sun-cured tobacco, and Conforzi worked to solve his personal colonial transport problem (figure 5.1).

With most of the protectorate unserved by rail, Conforzi turned to motor vehicles. He purchased Fiat trucks to convey his crop from Lilongwe to Cholo (a journey of twenty-four hours), set up repair shops at Cholo, and recruited

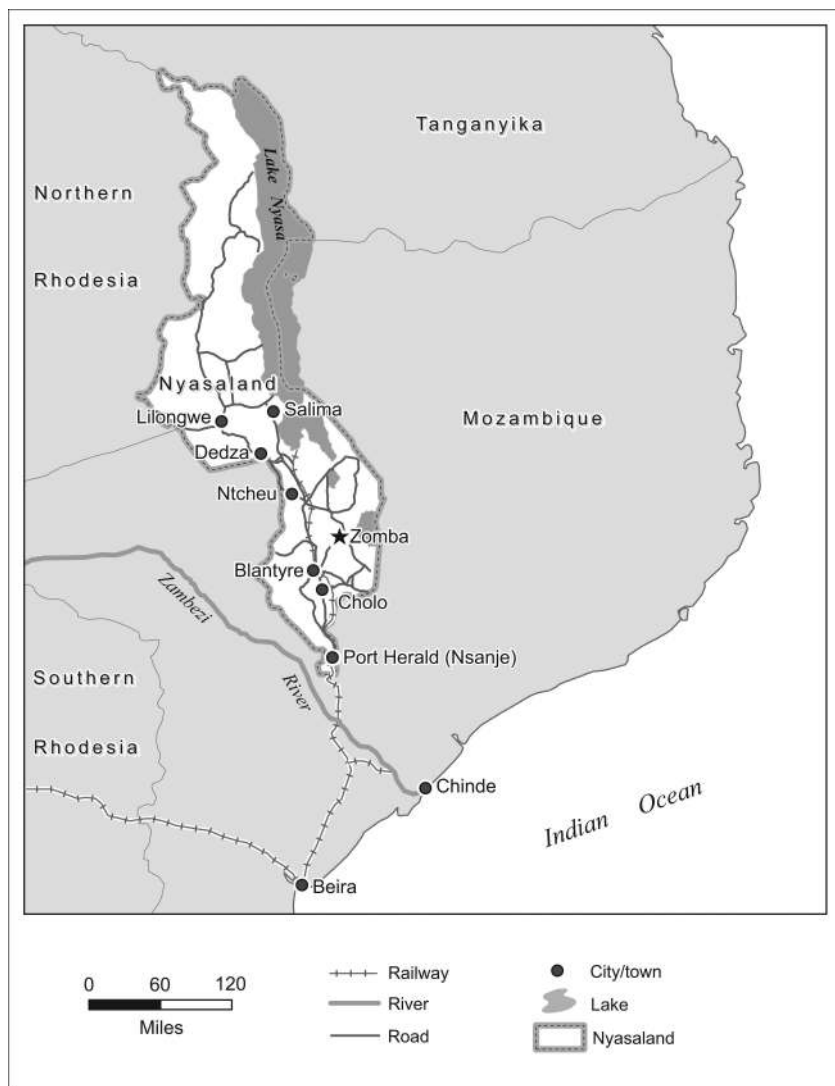


FIGURE 5.1. Nyasaland, late 1930s. Map by Di Shi.

mechanics and drivers from Italy.² He was such an advocate of automotive empire, in fact, that he operated the Fiat affiliate in Blantyre.³ Conforzi's production skyrocketed. He employed agents to purchase tobacco from African tenant farmers and leased large estates to bring production under his direct control. In 1928, he built a factory at Lilongwe to prepare his sun-cured tobacco for shipment by road to his estate at Cholo, where employees packaged it for export. For Conforzi, automotive empire and colonial capitalism worked in perfect harmony in the 1920s.

Although Conforzi's tobacco enterprise contributed to the improved economic prospects of the poor protectorate, his methods spurred conflict with the British administration. Because the railway only extended as far north as Blantyre in the 1920s, Conforzi devised solutions to export tobacco, using rudimentary roads and relatively affordable trucks. As the protectorate's agricultural industries expanded, however, the British administration turned to familiar methods of economic development. The Colonial Office in London blanched at road development schemes in Nyasaland but made a grant of £900,000 to extend the railway north from Blantyre to Salima, a project begun in 1931 and completed in 1935. The Northern Extension would not only connect the agricultural estates of the developing northern highlands to the sea but would also oblige producers to pay freight fees and export duties to use the rails.⁴

Nyasaland's administrators pressed the rails-versus-roads issue, expressing their displeasure with Conforzi. The Italian was not only a powerful tobacco planter but also the Italian consul in Nyasaland and a member of the Fascist Party.⁵ One member of the Nyasaland's Motor Traffic Licensing Board thundered that if Conforzi were allowed to operate his trucks, "we shall continue to have a British [tobacco company] purchasing his goods through an Italian Agent; the goods being carried on Italian lorries, which are serviced entirely by Italian mechanics in a British protectorate!!! . . . I cannot imagine such a position being allowed to continue in Abyssinia [by then an Italian colony], or in Italy itself."⁶

Conforzi's trucks were not mere annoyances to be managed by the administration; British officials believed that they threatened the colony's very foundations. After World War I, the British empire became the largest in human history, comprising colonies, dominions, protectorates, and mandates that spanned over one-quarter of the earth's land. Whether as sovereign or suzerain, Britain wielded control over more than one-third of Africa, making it the preeminent imperial power on the continent.⁷ But Britain's strength on the map belied challenges on the ground. War debts and military pensions weighed heavily on British finances in the 1920s, and the Great Depression dampened the economy throughout the 1930s. The scale of the British empire and the challenging economics of the inter-war era created threadbare and parsimonious colonial administrations in Africa,

particularly where white settlers were scarce and easy profits (as with precious minerals in central and southern Africa) were difficult to extract.

In this context, automotive empire absorbed the attention of British officials in the interwar decades, as in other European colonies. But the British departed from their imperial contemporaries because they largely viewed motorization as a threat to be managed, not an aspirational model. In British Africa large private investments in railroad construction before World War I had made rails vehicles of informal colonialism. After the war, state ownership of colonial railway companies led British authorities to focus on regulating transport services over building road infrastructure.⁸ Transport services in British African territories were more than means of conveyance; they were fiscal tools wielded by the colonial state. To balance the budget, the Colonial Office subordinated the finances and administration of the British territories to the railways, to service the substantial debts accrued in their construction, maintenance, and operation. Officials in London and colonial capitals imagined roads as mere capillaries to railway arteries, their fiscal and administrative effects limited and local. In defiance of district officers and provincial commissioners, “men on the spot” who begged for more and better roads, the British Colonial Office treated roads and motor services not as investments in future development but as liabilities that demanded ongoing financial obligations to expand the network and maintain existing roads. Further, rather than complementing the state-owned railways, roads competed with them.⁹

British colonial policymakers viewed automotive empire as a costly annoyance and a distraction from their model of railway empire. This is not to imply that motor vehicles were insignificant in British territories. The British built plenty of roads between the wars. British officials, African subjects, and settlers from Europe, South Asia, and the Middle East used motor vehicles for a variety of tasks. But the skepticism of the British officials who organized empire made motor vehicles particularly volatile in British Africa, particularly when operated by nonwhite drivers, as Jennifer Hart and Joshua Grace have shown.¹⁰ Notwithstanding hostility from high-ranking officials, the ubiquity of the automobile as consumer commodity and the ability of individuals in Africa to purchase vehicles and create transport businesses forced authorities in British Africa to engage, begrudgingly, with automotive empire. Joshua Grace has shown how British authorities distinguished between the permanence of railways and the “impermanence” of seasonal roads.¹¹ When combined with the wider ambit of motor vehicles, automotive empire appeared capricious and unpredictable, with disastrous fiscal repercussions. The British engagement with automotive empire demonstrates that imperial forms of mobility did not always move through approved channels or redound to the power of the colonial state.¹² In interwar

British Africa, more people traveled more widely and did so more quickly, but in the eyes of many colonial officials, they moved in the wrong ways, and their movements were not properly regulated or monetized. This was the complaint that lay at the core of Nyasaland's Conforzi Affair.

Automotive empire occupied the attention of colonial officials, subjects, and settlers in the interwar era, whether for or against. The perceived conflict between models of automotive empire and railway empire in interwar Africa proved divisive and costly to the British. British colonial administrations often operated as *de facto* railway companies. The economic interests of the railways dictated colonial administrative practices and economic policy, often to the detriment of what district officers and private citizens saw as obvious principles of good government and rational development. Whereas the obsession with the utopian promise of automotive empire led officials in French and Italian colonies (so-called Latin Africa) to engineer colonial societies around roads and motorization, the British program to thwart automotive competitors to state railways absorbed the resources and attention of an overextended empire. Across European empires, officials agreed that the state, private businesses, settlers, and subjects needed to cooperate to reap political and economic profits. But the British debate over automotive empire divided colonial constituencies against one another, leading to contentious debates about what, exactly, constituted the public interest. As a modular solution that could be applied to local problems—administering a large district or quickly moving delicate tobacco, for example—motor transport held great promise.¹³ But integrating modular fixes into a coherent system, particularly given the significant development of rail infrastructure in British colonies before World War I, proved challenging. As officials in the British Colonial Office sought to gain traction to make colonies profitable rather than burdensome in the interwar years, the rails-versus-roads debate left them spinning their wheels.

Evolution, Not Revolution

Before we can make sense of the Conforzi Affair, we must first examine British railway empire. If Albert Sarraut was the prophet of interwar French imperial policy, Frederick Lugard was his British analogue. A lifelong colonial servant, Lugard throughout his career traced the arc of British imperialism in Africa. As a soldier he fought in a series of skirmishes surrounding Lake Malawi (the Karonga War) on behalf of the Scottish African Lakes Corporation in the late 1880s. In the 1890s he worked for the Imperial British East Africa Company (in what is now Kenya and Uganda), the Royal Niger Company (in Nigeria and Benin), and the British West Charterland Company (in Botswana). In West Africa he

signed treaties with Indigenous chiefs to check French ambitions.¹⁴ His actions on behalf of British chartered companies typified this era of informal colonialism. As tensions rose between European powers in Africa, the British government served as a backstop, and the informal colonialism of explorers, chartered companies, and military adventurism slowly gave way to formalized British control.¹⁵ Lugard changed his stripes, abandoning the adventurism of informal empire for the respectability of its formal variant, eventually serving as the first governor of Nigeria.

Thus when Lugard sought to reveal “the nature of the problems confronting the local administrator” in his 1922 tome, *The Dual Mandate in British Tropical Africa*, he had nearly four decades of experience to lend weight to his claims.¹⁶ According to the historian Susan Pedersen, Lugard’s description of British colonial rule cunningly blended a descriptive account of British colonialism as it actually was with a normative projection of what it should be.¹⁷ He described Britain’s “dual mandate”: “her task, as trustee, on the one hand, for the advancement of the subject races, and on the other hand, for the development of [Africa’s] material resources for the benefit of mankind.” Lugard’s colonial principles were the “decentralization” of authority and “continuity” of administrative staff, allowing the empire to empower men on the spot who knew their jurisdiction best. A spirit of cooperation and mutual trust would reign, he believed, between colony and metropole, among the varied officials in the colony, and “above all, between the provincial staff and the native rulers,” allowing for “the widest possible powers of self-government” among “every advanced community.” He cautioned, however, that the goal was “evolution” not “revolution” of Britain’s African dependents, and that “the danger of going too fast with native races is even more likely to lead to disappointment, if not to disaster, than the danger of not going fast enough.”¹⁸ In this classic mission statement of British indirect rule, Lugard defined the ideal relationship between colonizer and colonized with a clearer understanding of the limits of colonial rule than his colleagues in Latin Africa.¹⁹

Infrastructure and mobility were central to Lugard’s vision. Lugard’s experiences in Nigeria before and during World War I convinced him that “the construction of arterial railways and the development of waterways, though involving subsidies or loans upon which the country may not for some time be able to pay interest, is the truest economy, and the postponement of such works involves unjustifiable waste.” Colonial officials need not fret about their cost, because as investments in future economic growth, “they have in all cases proved to be abundantly remunerative.” Simply put, “the development of the African continent is impossible without railways and has awaited their advent.” According to Lugard, railways would be nothing short of transformational, reducing transport expenses, increasing administrative efficiency, and minimizing the

number of police and soldiers required to secure a territory. Further, the rail would open new markets, make “direct taxation possible by affording a market for produce,” eliminate the slave trade, and free porters to do “productive work.”²⁰ Lugard envisaged rails as a panacea for the challenges of colonial governance and development, conceiving of them as a public utility.

When railways were considered a public trust rather than a private enterprise, Lugard argued, their advantages over roads were clear. Although the initial cost of constructing railways was high, “their running and maintenance expenses are low compared with road transport,” and those advantages only grew as traffic volumes and freight loads increased. When transport networks were analyzed as a public utility, Lugard observed, the drawbacks of roads were plain: “While the whole cost of construction and maintenance of roads falls on the Government, it derives no revenue from private traffic except such licenses on vehicles as it may impose.” Those who trumpeted the low cost of roads, he contended, were “apt to lose sight of the heavy expenditure incurred in construction and maintenance,” as well as the dependence of road networks on ubiquitous fuel and repair infrastructures.²¹ The complaints of the governors of the Gold Coast (Ghana) illustrate the British consensus that roads harmed colonial interests rather than advancing them. One lamented that “the revenue obtained from the taxation of the motor trade cannot be compared with the cost of maintenance of motor roads in this colony,” while another stated that “motor vehicles in the Gold Coast contribute little to the revenue.” Indeed, in the decade 1923–1932, road expenditures in the Gold Coast more than tripled licensing revenues.²² Thus, Lugard’s prescriptions became axiomatic: “The foremost of all requirements for material development in Africa is railways,” and “any railway built reasonably cheaply through a populous country is bound to be remunerative,” while “feeder roads with auxiliary transport will grow of themselves.”²³ As Jennifer Hart argues of the interwar Gold Coast, rails united “the political and economic interests of the colonial state.”²⁴

Lugard’s “backward-looking” dual mandate contrasted with Sarraut’s “forward-looking” *mise en valeur*, and the British preference for rails revealed a conservatism that befitted a model of evolution rather than revolution.²⁵ With Britain’s significant preexisting rail investments, as well as that mode’s submission to state control and oversight in colonial Africa, the threat of roads and their more individualist and seemingly anarchic uses was clear.²⁶ For critics of the British model of railway empire, the preference for rails reflected British inertia rather than stability.

As relics of the late-nineteenth-century scramble for Africa, railroads carried significant burdens into the interwar era. At the turn of the century, private railway investors had pledged capital expecting economic growth to reward their

investment by increasing traffic.²⁷ They bankrolled the construction of rail lines in settler colonies such as South Africa, as well as between diamond and copper mines and ocean ports. After World War I, rail development stalled across Africa. With the low-hanging fruit having been picked, new construction was risky and speculative, particularly in the straitened economic circumstances of the post-war years and, later, the Great Depression. Whereas the decade before World War I saw a flurry of construction produce over twelve thousand miles of new rail, European powers constructed fewer than seventy-five hundred miles in the two decades after the war.²⁸ In 1927 Abraham Bailey, a South African diamond tycoon, legislator, and cricketer who became a roads booster and philanthropist of automotive causes as a public good, opined that in supporting railways, “the Governments of British Africa have been backing a form of transport that is antiquated already, and may in the future become obsolete.”²⁹ For rail skeptics, Africa’s transport network was a vestige of the nineteenth century, reflecting that era’s technological state of the art and its now-outdated politics.³⁰

African railways had a unique and, to critics, irrational spatial and territorial logic. They were usually externally oriented, to connect inland resource and population centers to imperial commerce through imports and exports. In most colonial settings, railways comprised “scattered branch lines” that moved “more or less haphazardly” from seaports to colonial interiors.³¹ As Jennifer Hart observes of the Gold Coast, they often moved “through” African communities rather than “in” them.³² Because colonial territories were overseas possessions of European nation-states, railways often required circuitous routes to keep business within national bounds. For example, in the 1930s, the operators of the Rhodesian Railway System demanded that mining businesses in Northern Rhodesia (Zambia) adhere to legislation requiring the use of British rails. Doing so required a lengthy southward journey through Southern Rhodesia (Zimbabwe) and Bechuanaland (Botswana), before reaching ports in South Africa, twice the distance of the more direct path on the Benguela Railway, which connected Northern Rhodesia mines to the eponymous Atlantic port in Portuguese Angola via the Belgian Congo.³³ Despite the inefficiencies, imperial economics recommended the longer, “all-red” path. The political and economic demands of the British rails shaped colonial policy as much as they responded to it.

Such acts of intercolonial British planning were the exception rather than the rule in the interwar decades. More common was the behavior of isolated enclaves such as the West African colonies of Nigeria, Gold Coast, and Sierra Leone, each of which was surrounded by non-British territories and possessed enclosed rail networks. Even when British territories bordered each other, as in East Africa, rail coordination was rare. In Kenya, the British built a railroad northwest from the port of Mombasa to the capital of Nairobi and onward to Kisumu on the shores of

Lake Victoria. Upon taking possession of Tanganyika from Germany after World War I, they oversaw a nearly parallel German-built line three hundred miles south of the Kenyan one, from the capital and port at Dar es Salaam through the central highlands to Dodoma on Lake Tanganyika. Each railway and port sought to serve the rich, populated hinterlands surrounding the African Great Lakes, and throughout the 1930s the state-owned railways and colonial administrations of Kenya and Tanganyika competed for business.³⁴

Railways thus responded to British colonial designs that oriented African territories toward import and export relations. For the Frenchman Charles Maitre-Devallon, who theorized the colonial transport problem, rails created colonial problems rather than solving them. Because rails followed “individualized transport axes,” connecting “each great port to each human settlement and linking it to the external world,” they had the effect of “artificially dividing the territory into a certain number of cells having few lateral relations between them.” For the Frenchman, only roads could “insinuate themselves” into African societies.³⁵ Wilfrid Dyson Hambly, an American-born, Oxford-educated anthropologist of Nigeria, agreed, writing in 1931 that although a 750-mile railway connected the capital of Lagos to the northern city of Kano, “that way of traveling is of no use if one wishes to see the people, their homes, and the kind of work they do.”³⁶ Hambly unwittingly revealed the limited ambitions of British colonialism in the era of indirect rule. Compared to the French, the British had fewer pretensions to the all-encompassing transformation of African societies and landscapes, a project both reflected in and made possible by roads. The fact that rails ran “through” Nigerian space rather than “in” Nigerian communities befitted the more decentralized, indirect rule promoted by Lugard. But for the British district officers and provincial commissioners who served as colonial men on the spot, the modular application and technological flexibility of motor vehicles made them better suited for weak colonial states and the British project of enacting what Sara Berry has termed “hegemony on a shoestring.”³⁷ In British Africa, the roads/rails debate often divided those familiar with the day-to-day challenges and frustrations of colonial administration from officials in London and colonial capitals who designed fiscal policy.

From the colonial to the continental scale, British Africa was thus far less coherent than it appeared. Although the map of colonial Africa in the interwar decades shows an unbroken path of red territory running from the Cape to Cairo, British Africa was a collection of atomized territories with few meaningful connections. Maitre-Devallon observed in 1931 that in infrastructural terms, “the Africa of today appears as Europe was about 1860, when there arose the question of international railway connections and great international routes of communication.”³⁸ British roads advocate Rees Jeffreys, who after lobbying for modern

roads in the United Kingdom turned his attention to British Africa, recognized the relationship between transport and the peculiar territorial logic of Britain's possessions. For Jeffreys, the objective goals of transportation infrastructure—speed, security, frictionless movement—should define colonial policy. In British Africa, he thus advocated “the abolition of political boundaries in so far as they interfere with transport.” He gazed across the Atlantic Ocean at the United States, attributing its “great development . . . to the fact that . . . there are no political boundaries to hold up the free passage of any vehicle seeking to travel from New York to San Francisco or from Detroit to New Orleans.”³⁹ In Africa, Jeffreys believed, territorial barriers and the limited horizons of Africa rail policy locked African colonies in a cycle of underdevelopment.

Lobbyists such as Jeffreys and Abraham Bailey agitated for a grand trans-African highway—“the greatest and most binding highway in the world”—to fulfill Cecil Rhodes's Cape-to-Cairo dream, “linking up all the British possessions, opening the dark places of the Continent.”⁴⁰ But given the territorial organization and bureaucratic logic of British possessions, few top officials pursued intercolonial arteries. As Jeffreys wrote in 1937, however necessary a Cape-to-Cairo road, it made “no progress because the territories through which it would pass are too occupied with their own immediate requirements to devote time or money to schemes which are of more continental than local value.”⁴¹ Meanwhile men on the spot in border districts implored their superiors to build intercolonial roads to facilitate cross-border trade that was already happening, which would formalize economic connections and allow the British to tax commerce that had previously escaped administrative oversight. The transformational promise of a charismatic trans-African highway encountered the skepticism and resistance of the geographically and temperamentally distant administrative class, with one London official describing a proposed road connecting Kenya to neighboring Tanganyika as “pure luxury.”⁴²

Whatever the potential benefits of intercolonial transport connections, projects collapsed amid thorny questions of who would pay and how such infrastructures would be administered. Attempts to construct roads that would create better connections between the Rhodesias and South Africa in the 1930s failed because of the perception that Southern Rhodesia would benefit more than the other territories, and that the project was an attempt by Southern Rhodesia to siphon commerce away from South Africa.⁴³ The lack of administrative interest could be seen by drivers on the roads themselves. Road quality and traffic declined as one approached colonial frontiers, with “little traffic crossing the boundaries.”⁴⁴ Of course, British policy manufactured this outcome with the Colonial Office's stated preference for railways, which produced a fractured, duplicative, and uncoordinated transport policy lacking in “collective action.”⁴⁵ Inspired by Lord

Lugard's theorization of Britain's dual mandate, formulated from his pre-World War I experiences in an era of rapid rail development and fragile automotive technologies, officials in London believed that indirect rule and decentralization found a perfect vehicle in British colonial rail politics.

The Failures of Automotive Empire in British Africa

For outside observers such as Rees Jeffreys, the problem was clear: "At present, British Africa is over-railed and under-roaded."⁴⁶ Jeffreys studied other imperial regimes in Africa and cultivated contacts with colonial officials before settling on a formula that defined approaches to African governance. In 1930, Jeffreys quoted an unnamed acquaintance in Africa who described the distinction in stark, racialized terms. "We Anglo-Saxons," Jeffreys wrote, "are pinning our faith to railways and the curly-headed man. The French are backing roads and the straight-haired man."⁴⁷ For Jeffreys, the transport question encapsulated the divide between British and French colonial methods. From his perspective, French successes (which he often widened to include Belgium as "Latin Africa") were the product of technical input by European experts, the so-called straight-haired men. When examining African roads in person on a study tour in 1929, Jeffreys remarked upon the French and Belgian investment in "road brains." In contrast, "British Africa has nowhere spent money on road brains."⁴⁸ A British tourism manager for Thomas Cook & Son agreed, noting that French and Belgian roads were "definitely sited and laid out by an expert brought from Europe" and that "all bridgeworks" were "properly designed" and "efficiently carried out," making them permanent. Whereas the British constructed roads as temporary exigencies, Jeffreys believed that the French and Belgians did so "with a definite eye to the future, so that a minimum of labor would be required for their upkeep, and a maximum and lasting efficiency would be arrived at."⁴⁹

Wherever British colonial administrators pursued road construction, they lamented their difficulties recruiting good men. Governor Douglas Jardine of Sierra Leone described his disappointment with public works officials on road sites, noting that, as men approaching fifty years old, they lacked "the physical energy necessary" to withstand the tropics and that they "have no incentive to work well and move up."⁵⁰ In Nigeria, the difficulty recruiting road experts led Governor Graeme Thomson to implore Colonial Secretary Leo Amery to recruit technical staff not only from England but also from Canada and Australia.⁵¹ The lack of technical staff employed by the colonial state made road projects a boondoggle in the eyes of many officials in London. The archive is littered with

supplementary budget requests appended to loans from the Colonial Development Fund. In Northern Rhodesia in 1931, Governor James Maxwell condemned the work of his predecessor, who had squandered a £187,500 loan to build four thousand miles of arterial roads. Governor Maxwell informed his superiors in London that the protectorate required a further £147,000 to complete the work, a cost required because, as its director of public works wrote, “no surveys [were] undertaken [nor was] a proper schedule of work . . . drawn up before the work was started.”⁵² Whereas the French preference for “road brains” befitted the Sarrautian paradigm and the interwar vogue for a technocratic, “scientific” colonialism, British road construction wasted time and money.

If the British road regime lacked for technical expertise, Jeffreys also lamented its lack of manual laborers. As he told it, the Latin African empires used “in an indirect form the compulsory service system which prevailed under native chiefs before the advent of the European.” Such a system, Jeffreys argued, allowed the Latin countries to construct and maintain roads “at a comparatively small cost.”⁵³ Chapter 6 examines this labor regime in detail, but Jeffreys was convinced that Latin Africa’s taxed labor justified itself by creating works of public interest. For British journalist Patrick Balfour, “thousands of miles of road have, in fact, cost the French Government nothing at all” because “tactfully they have persuaded the native to work.”⁵⁴ What Balfour and Jeffreys considered tactful persuasion, much of the world called forced labor. When the League of Nations passed the Slavery Convention in 1926, the British toed the line and declared compulsory labor unacceptable in Britain’s African territories, while the French, Belgians, and Portuguese elaborated carve-outs and work-arounds well into the 1930s. Jeffreys complained of the misplaced humanitarianism of the British, lamenting that “the British objection to bringing pressure on natives even in their own interests has retarded transport development in British Africa.”⁵⁵

When pressed by colonial roads advocates such as Rees Jeffreys, British officials repeatedly asserted that their hands were tied. Arthur Huddleston, the financial secretary of Sudan, advised that “the abolition of [coerced] labor is a cardinal point in Imperial and in present international policy.”⁵⁶ Samuel Wilson of the Colonial Office reiterated the point, writing Jeffreys that “the British Administrations are not prepared, and public opinion here would not in any case permit them, to use native labor on main road construction on the same conditions as it has been employed elsewhere.”⁵⁷ Because the Colonial Office no longer countenanced forced labor, officials in Africa resorted to other means. In Northern Rhodesia, officials forced tax defaulters to work off their debts. This, Governor Hubert Young claimed in 1935, was “the most practical form of relief for the large number of natives whose taxes are in arrears.”⁵⁸ Such work-arounds never met

the needs of British officials in Africa to recruit labor at the scale necessary for massive road construction programs.

In many areas, the weak colonial state was unable to uphold its own standards.⁵⁹ In 1927, considering the new international consensus on forced labor, the acting governor of Kenya Edward Denham firmly asserted that “the compulsory employment of women and children on road work . . . is not countenanced by the Kenya Government.” In response, the former director of public works in the colony, William McGregor Ross, advised the Colonial Office against publishing Denham’s statement, noting that “there must be scores, if not hundreds, of settlers who have seen female labor employed at Government stations this year . . . and they may even have taken photographs.”⁶⁰ Thus, whereas Jeffreys and other advocates viewed roads as a simple solution to the challenges of British Africa, the colonial administration perceived an inescapable bind. The British were unwilling to invest in the “road brains” needed to build modern roads on a wide scale, and too committed to humanitarian principles (at least theoretically) to elaborate a systemic justification of forced labor, as did the French.

Road advocates encountered a cultural problem as much as an administrative one. The British were as car-mad as any other Western industrial society of the early twentieth century, but the nature of British car culture differed markedly. Although dozens of domestic manufacturers produced cars, British consumers long preferred foreign brands. Before World War I, most early British automobiles were adaptations of luxurious French models that dominated the market. Fords arrived in the British Isles in the first decade of the century, and the company established a production plant in Manchester in 1913. On the eve of the war, Ford produced twice as many vehicles in the UK as Wolseley, the largest British manufacturer.⁶¹ After World War I, the British automotive industry lagged its continental competitors. Renault and Citroën adopted mass-production techniques and Fordist models of advertising and vertical integration, while Fiat reshaped itself from a luxury producer to a modern industrial manufacturer and consolidated its control over the Italian market. In both France and Italy, industrial development, nationalist sentiments, and modern mass culture infused interwar metropolitan car culture, and brands such as Citroën and Fiat came to symbolize the nation and the empire alike. In the United Kingdom, consumers purchased and used cars, but no single manufacturer emerged as a national sigil. The British automotive market remained far more international and variegated than its continental competitors.

As a result, the symbiosis between the automotive industry and colonial efforts that drove interwar development in the French and Italian colonies did not emerge in the British empire. Foreign brands dominated in British Africa for leisure, business, and administrative use. Fiat established sales offices and

garages for repair and maintenance across British Africa, including in South Africa, Kenya, and Inaco Conforzi's outpost in Nyasaland.⁶² Fords, known for their utility and dependability, dominated the British war effort in East Africa during World War I. Over the following decades, Ford and Chevrolet consolidated American advantages in British Africa.⁶³ As a result, the colonial-industrial complex that defined French and Italian approaches to automotive empire simply did not develop in the British empire, and as tools of colonial entrepreneurship, motor vehicles threatened British interests as much as they bolstered them.

Road Development and the Threat of “Uncontrolled Individuality”

The broad British preference for rails over roads in Africa emerged from their belief in both the strengths of the former and the weaknesses of the latter. Obviously, the framing of the transport question as a binary choice oversimplifies the matter. British territories possessed both roads and rails, and officials admitted that local conditions were so variable “that it is impossible to lay down any hard and fast rule.” For the advisory Oversea Mechanical Transport Directing Committee, “the essential feature of any sound development scheme is complete coordination between the railways and motor transport services.”⁶⁴ But the contrast between the British and French approaches was stark. The French concluded that “the automobile is not in competition with the rails; it complements and precedes it as the means of penetration in all the regions where insufficient traffic does not yet allow the construction of rail lines.”⁶⁵ According to Charles Maitre-Devallon, the colonial administrator “must tend to effect the union of these apparent rivals” by sorting each mode to its strengths: bulk freight over long distances for rails, and smaller loads over shorter distances for roads.⁶⁶ For the British, however, roads “should generally be treated as feeders to and not competitors with the railways.”⁶⁷ By describing the complementarity of roads and rails as the subordination of the former to the latter, British officials framed the transport question as a binary choice and a zero-sum proposition, even as they insisted it was not.

The very thing that made automobiles so attractive to district officers overseeing vast territories with meager budgets made them a danger to the British colonial state. The promise of the automobile lay in decoupling the vehicle from its infrastructure. Rail travel depended on the construction of purpose-built lines and bound the vehicle (the locomotive) and its infrastructure (the railway) into a unified mode of transport. Automobiles, by contrast, while performing better on roads, were not so tightly bound to their infrastructure.

For the British, however, the decoupling of vehicle from infrastructure threatened the stability of their colonial model. A 1932 report commissioned in the Gold Coast sketched the central problem: "On the one hand is a railway, completely State-owned," required to fix its freight rates to cover the amortized costs of construction and ongoing maintenance. "On the other hand, a road transport service, privately owned, but operating on State-owned roads," on which road transport taxes levied by the state had contributed less than one-third the needed amount over the previous decade. As a result, the colonial taxpayer was forced to make up a £2.4 million deficit. Savvy private road transport operators benefited from this situation, because "the railway being primarily developmental and an essential factor for the Colony's progress is called upon to accept all kinds of traffic," including low-value, bulk agricultural products sold at narrow profits. "The uncontrolled road operator" could focus activities on high-priced commodities, cannibalizing the revenue needed to subsidize low export rates. Further, the heavy investments and fixed tracks of railways meant that "the capital of the railway is immobile" compared to road transport, which could be "transferred from place to place where traffic happens to be most profitable." As a result, the government of the Gold Coast believed that the road transport service "has grown to such dimensions that the services available are grossly in excess of the demand," leading providers to slash rates, further undercutting rail profits. Whereas the colonial government conceived of the railway as a utility operated in the public interest to advance economic development, private automotive transport acted as a parasite on the colonial state.⁶⁸

The British thus viewed public and private transport efforts as locked in destructive competition. In response, the erstwhile champion of laissez-faire capitalism tilted the transport market in favor of rail traffic. Because "Colonial governments have very heavy commitments in their railways," amounting to some £8 million in the Gold Coast in the 1920s, "it is therefore difficult to see how they could afford to let their railways become unremunerative."⁶⁹ In the Gold Coast, road transport companies siphoned away business as part of the vital cocoa trade; whereas rails transported 95 percent of all cocoa in 1924–25, that proportion fell to only 53 percent by 1930–31, with a corresponding decline in export duties collected. Further, competition from road transport companies harmed passenger receipts and forced railways to expand local services to maintain passenger traffic. The effects were significant. On the twenty-mile path between Accra and Nsawam, the opening of a road cut rail passenger numbers in half in only two years.⁷⁰ Road transport created "excessive, irresponsible, and unfair competition" and "destroyed" over £9 million in taxpayer investments. Then, the onset of the Great Depression rendered the financial outlook of rails in the Gold Coast "very grave."⁷¹ The colonial administration therefore found itself

arguing that private road transport harmed the public interest by serving the needs of agricultural producers and passengers *too well*. In placing the interests of transport customers over the colonial state, motor transport businesses undercut the state's monopoly on transport, upon which the colonial financial model of import and export duties rested. The British colonial state needed to be protected from its own subjects.

The colonial administration contorted itself to address the problem. In the Gold Coast, the Roads Department, created in 1924, existed largely to limit the influence of roads. As Jennifer Hart has shown, the Roads Department purposefully created gaps in the road network to limit long-haul transport from the interior to the port at Accra, then largely abandoned road construction and maintenance during the Great Depression.⁷² Such actions emerged from the macroeconomics of British territories, but also from British prejudices. In colonies with vanishingly small populations of white settlers, private road transport was a racialized category. In Sierra Leone, Governor Henry Moore described the division of the road transport sector among Syrian immigrants, most of whom owned only one or two small trucks. These "petty traders," the governor fulminated, had no "vested interests" in the colony and only created their transport enterprises as "a profitable 'side line'" to their core trade as shopkeepers. Such companies transported only the most profitable goods and created a "casual, unsystematic, and irregular form of transport."⁷³ Whereas Syrian and Greek immigrants often cornered road transport in interwar British West Africa, Indians dominated the trade in East Africa. London-based colonial official J. E. W. Flood wrote that in Uganda, "the trouble with African and Indian owned passenger services" is that "they get very slack and dishonest. They cut each other's throats in competition for passengers . . . and tend to compete at low rates wherever the traffic is heaviest without any general scheme of things."⁷⁴ The British obsession with regulating the transport trade was as much about who profited from transport as which mode of transport served traffic.

Road advocates such as Rees Jeffreys agreed with the British government on one thing: transport coordination *was* necessary. However, the role of the government, Jeffreys wrote, was simply "to secure the coordinated development of all forms of transport" while seeking out cost savings. Colonial governments "should not seek to stabilize or protect existing forms of transport to a point that endangers national efficiency, impairs national borrowing powers, [or] increases national taxation." On several occasions Jeffreys accused the Colonial Office of preferring rails as a form of pork-barrel metropolitan politics. The "lopsided" development of rails over roads in southern and eastern Africa, he charged, was the product of "pressure from home." With many of the orders for rolling stock and construction materials placed in the United Kingdom, African rails

stimulated the metropolitan economy directly, whereas “the return to Great Britain from expenditure on roads is not so immediate and is more widely distributed.”⁷⁵ The proper role of the colonial state, Jeffreys argued, was to orchestrate the varied modes of transport in the colonies, not to place its finger on the scales. When traveling in Kenya, Jeffreys described an administration that “watch jealously and oppose effectively any scheme for making roads which will compete with or may divert traffic from their railways.”⁷⁶

This pattern of private accusations of favoritism (from metropolitan citizens and varied residents in the colonies themselves) and state assurances of neutrality collapsed in the early 1930s, when the Great Depression made already tenuous colonial finances, tied to railway monopolies and import/export fees, unsustainable. Cratering commodity prices led to corresponding declines in tax revenues, creating a “death spiral” in the 1930s.⁷⁷ Homing in on Kenya, Jeffreys wrote, “The railway in Kenya is the instrument of fiscal policy and of taxation. . . . Coal, petrol, whisky and other imported goods . . . are charged far more than the economic rate in order that maize and other products of the country can be conveyed to the port at rates below the cost.”⁷⁸ When agricultural prices collapsed in the 1930s at the very moment that road transport competition with the rails grew, British colonial officials felt compelled to act.

Officials based in London and colonial capitals perceived the transport question as a failure of the private market to assure the commonwealth. One by one, colonies instituted ordinances to regulate transport. The East African territories moved first. In 1931, both Kenya and Tanganyika passed the Carriage of Goods by Motor (Prohibition) Ordinance to outlaw “uneconomic motor competition with the railway” on “certain roads in the Colony.”⁷⁹ Uganda followed suit in 1932, and each East African territory extended the ordinance in the following years, until 1934, when Tanganyika repealed it. According to the attorney general of Tanganyika, “it was an experimental measure, and the experiment has proved unsuccessful.” The ordinance failed, he wrote, not because it was too strict, but rather because it was too lenient. In the words of the attorney general, “the necessity of securing for the railways immunity from competition is no less urgent today than when the Ordinance now repealed was enacted.” In the intervening years, “competition has not been eliminated,” while “fees obtained from [motor vehicle] licenses have fallen far short of the loss resulting from the competition.” In response, the new ordinance sought “to prohibit absolutely competitive motor traffic.”⁸⁰ As time went on, officials in Tanganyika admitted that “an absolute prohibition on road traffic which competes with the railways is an unsound method of dealing with the competition” and must be viewed as only “temporary,” but that “uncontrolled and unrestricted competition between rail and road is ruled out as a solution.”⁸¹ Reginald Robins, the general manager of the Tanganyika

Railways, concurred, bluntly stating that even if road transport improved colonial administration and bolstered trade, its “uncontrolled individuality” made it “our duty . . . to preserve our railway monopoly.”⁸² Left unsaid by Robins was the widespread adoption and mastery of automobiles by African drivers and repairmen in this era, a fact that contributed to his perception of “uncontrolled individuality.”⁸³

Administrators in West African colonial capitals agreed that only increased state regulation could prop up the British fiscal model of railway empire. In the Gold Coast, the Railway Revenue Committee recommended a comprehensive program to suppress road transport, including tolls, vehicle license fees, import duties on vehicles and supplies, limits on the number of licenses issued, and the outright prohibition of motor vehicles in certain areas. All these measures were meant “to secure for the railway its proper share of the goods and passenger traffic.”⁸⁴ Of course, what was “proper” was determined by colonial officials with an interest in funneling traffic toward the railways. With inspiration from the British East African territories, the dominoes fell in West Africa. The Gold Coast passed its own ordinance in 1936, modeled on the Kenyan measure, and Sierra Leone followed in 1937.⁸⁵

Rather than allowing the market to determine the optimal solution to the transport question in British colonies, administrators elaborated increasingly labyrinthine and restrictive regulations. To enact policy, colonial administrations erected bureaucratic Road Transport Control Boards. In the process, they alienated colonial residents and local officials and hindered economic development. In the Gold Coast, cocoa farmers expressed their disapproval of the ordinance, which required them to first transport their crop by automobile *away* from the coast, before loading it onto the state-owned railway for delivery to Accra. Such requirements not only increased transport costs for each farmer but delayed the delivery of the crop because of poor and infrequent connections between the colonial interior and the port. What trucks once traveled in a day took many days via rail. The colonial administration dismissed their concerns, glibly stating that they “must not look a gift-horse in the mouth, or you lose it altogether.”⁸⁶ The British may have rejected automotive empire as a model in interwar Africa, but their obsessive attempts to manage the automotive threat to their railway empire made motor vehicles and roads just as central to British colonial efforts as they were to Latin Africa.

The Challenges of British Nyasaland

The landlocked protectorate of Nyasaland typified the tensions of land transport in the British empire. The small territory stretched over five hundred miles from north to south but measured only fifty to one hundred miles across from east to

west.⁸⁷ David Livingstone had explored the area in the 1860s, inspiring Anglican and Presbyterian missionaries to arrive in the 1860s and 1870s. The Church of Scotland Mission founded at Blantyre in 1876 became a center of European ventures. The Scottish African Lakes Corporation formed to serve the region in 1878 and set up trading posts in the following decade. In the late 1880s, Portuguese concessionaries operating in Mozambique began to infiltrate the British-affiliated lands west of Lake Malawi, and the British government intervened to protect the informal British commercial and missionary “bridgeheads.”⁸⁸ They dispatched the explorer Harry Johnston, first to Lisbon, then to Blantyre to block Portuguese advances. The British issued an ultimatum in 1890 that threatened war if the Portuguese did not relent on their claims in what would become Nyasaland, forcing them to accede.⁸⁹ Johnston then contravened the guidance of the Foreign Office when he declared the Nyasaland Districts Protectorate in 1891, but, recognizing the *fait accompli*, the British government endorsed his declaration, creating the Central Africa Protectorate that same year. Over the following fifteen years, the British deployed Indian troops and recruited mercenaries from Mozambique to violently suppress resistance to their rule.⁹⁰ In 1907, they renamed the protectorate Nyasaland. The geography of the protectorate reflects its birth from Anglo-Portuguese tensions, as Mozambique encircles the southern districts of the protectorate on three sides.

British Nyasaland was desperate for contact with the outside world. The protectorate had fewer than fifteen hundred European settlers in the early 1920s and remained an export economy dependent on small-scale agriculture.⁹¹ Nyasaland’s lifeline to regional and global trade was a short section of railway, barely 100 miles in length, completed in 1909. This railway connected Blantyre to the southern tip of the protectorate in Port Herald (modern Nsanje) and on to Portuguese ports on the Mozambique Channel (first Chinde, later Beira) via river transport.⁹² A rudimentary road system arrayed along a north-south axis covered the remainder of Nyasaland and fed the rail-river connection to the sea, allowing for the export of the protectorate’s main crops of tobacco, cotton, and tea. The high cost of transport drew the ire of settler farmers and led them to focus entirely on cash crops, leaving food crops (and labor on European plantations) to African peasants. For the historian Elias Coutinho Mandala, Nyasaland was an “economic basket case” and a “failed state” that could not meet the needs of any of its constituencies, including white settler farmers.⁹³

The Colonial Office in London took a panoptic approach to the region that benefited the empire but harmed the interests of Nyasaland. London saddled the protectorate with railway debt accrued to build lines through Mozambique, and according to the historian Leroy Vail, “the wrong railways were built in the wrong places for the wrong reasons.” Nyasaland became “the slum of the empire.”⁹⁴ It

was not until 1935 that Nyasaland Railways Limited extended the railway north to Salima, linking the seaport at Beira to a terminal on Lake Malawi, whereby the British could access southwestern Tanganyika. The northern half of the protectorate remained untouched by the rail line in this era. In a marked difference from the neighboring territories of Northern and Southern Rhodesia, which possessed significant mineral wealth, Nyasaland's specialization in low-cost agricultural products made attracting railway investors difficult.⁹⁵ This economic structure limited tax revenues, which were too small to allow for state-led economic development.⁹⁶ Nyasaland was bound to the railway financially but was functionally the British possession most dependent on roads, making it the ideal site to examine how automotive empire challenged Britain's railway model.

Porter paths served wheeled traffic beginning in the late nineteenth century.⁹⁷ During World War I, Nyasaland became an important base for British military operations in East Africa. This led to the rapid expansion and improvement of Nyasaland's roads, which funneled troops and supplies from the ports of Mozambique. After 1918, the British government sold off most of the vehicles it had imported to Nyasaland in the war effort, and retired military vehicles became the basis of commercial road transport in the 1920s. In 1920 the North Charterland Exploration Company purchased trucks to serve Nyasaland's tobacco planters. Whereas their crops once depended on ox carts to move tobacco from the northern half of the protectorate to the rail terminus at Blantyre, North Charterland moved the crop quickly, charging high freight rates to export the fragile crop with minimal handling or delay.⁹⁸

Thanks to the dynamic interaction of motor services and plantation agriculture, a symbiotic form of colonial capitalism emerged in the 1920s in Nyasaland. Improved roads and reliable motor transport services led to the development of new tobacco plantations in the Ntcheu, Dedza, and Lilongwe districts north of Blantyre, where the soil and climate could support tobacco but the previously weak road infrastructure could not. With more acreage dedicated to tobacco, the road transport industry expanded further.⁹⁹ By 1929, Nyasaland licensed 450 automobiles and 600 trucks.¹⁰⁰ In 1931, Nyasaland supplied more tobacco to the United Kingdom than any other British possession (approximately one-third of total colonial imports). The total volume and value of tobacco production increased steadily in the 1930s, allowing the protectorate to export to Denmark, the Dutch East Indies, and Egypt, as well as Britain's West African colonies.¹⁰¹ The combination of roads and tobacco buoyed the fortunes of Nyasaland in the 1920s, leading one prominent resident to argue that if only its connections to its British neighbors and the wider world could be strengthened, the protectorate "will combine the prosperity of the European plantations of Virginia with the prosperity of the Native industry of Uganda."¹⁰²

The dependence of tobacco exports on motorized transport inspired a greater focus on road construction than in other British possessions. The increasingly heavy traffic, in terms of both volume and weight, demanded maintenance and improvement of emergency roads constructed during the war. This rectification was accomplished by forced labor.¹⁰³ The first half of 1920s saw the British expand the road network with summary roads. They found the distinctive dimensions of the protectorate a boon because roads did not have to be particularly long to serve as feeders to the north-south railway.¹⁰⁴ Governor Charles Bowring (1923–1929) wrote that “on paper . . . we possess a quite satisfactory road system,” but that temporary culverts and bridgeworks in particular needed to be made permanent to reduce maintenance costs and assure the year-round operation of the road network.¹⁰⁵ Thus, in the latter half of the 1920s and in the 1930s, the Nyasaland administration repeatedly requested loan funds from the Colonial Office to hire “road brains.” From the perspective of the public works director B.R. Peters in 1929, “improvement of the existing road system is more important than its extension.”¹⁰⁶

Such improvement was not without its challenges, however. As the protectorate was landlocked, with a single lifeline to the coast—the railway to Beira, in Portuguese territory—officials in Nyasaland desperately pursued intercolonial connections with neighboring British territories. In 1927, Governor Bowring wrote to Colonial Secretary Amery to broach constructing a road that would connect northern Nyasaland with Northern Rhodesia and Tanganyika and on to the Kenyan capital of Nairobi, noting the “mutual economic and practical value” of the intercolonial connection. His successor, Shenton Thomas, continued to lobby the Colonial Office on the matter into the 1930s.¹⁰⁷ The political collaboration and shared financing that would be needed to forge an intercolonial infrastructure project collapsed owing to the weak enthusiasm of the governments of Northern Rhodesia and Tanganyika. Both saw the scheme as one that would offer greater benefits to Nyasaland while demanding expenditure from their own meager budgets. Nyasaland lobbied the Colonial Office for supplementary loans, but metropolitan officials, with their preference for rails over roads, proved skeptical. One London official expressed his annoyance while rebuffing the proposals, writing, “It is difficult to keep pace with the stream of road programs that reach us from Nyasaland.”¹⁰⁸ When the siloed administrative and financial structure of Britain’s African colonies collided with London’s skepticism of automotive empire, Nyasaland had few options to advance its interests.

Nor could British officials, even in compact, landlocked Nyasaland, count on roads to advance the empire’s interests in a straightforward fashion. As had been the case for the Germans in East Africa at the turn of the century, the loose territorial claims of Portuguese concessionary companies in Mozambique created

challenges for the British. In 1934, Governor Harold Kittermaster informed the Colonial Office of a problem. To soften the blow, the governor lauded the progress of the protectorate, proclaiming that “we have a magnificent road system in this Protectorate traversing the country from South to North.” Unfortunately, Kittermaster wrote, “at several points between Ntcheu and Dedza it runs frankly and unashamedly through Portuguese territory” (figure 5.2).¹⁰⁹ The situation

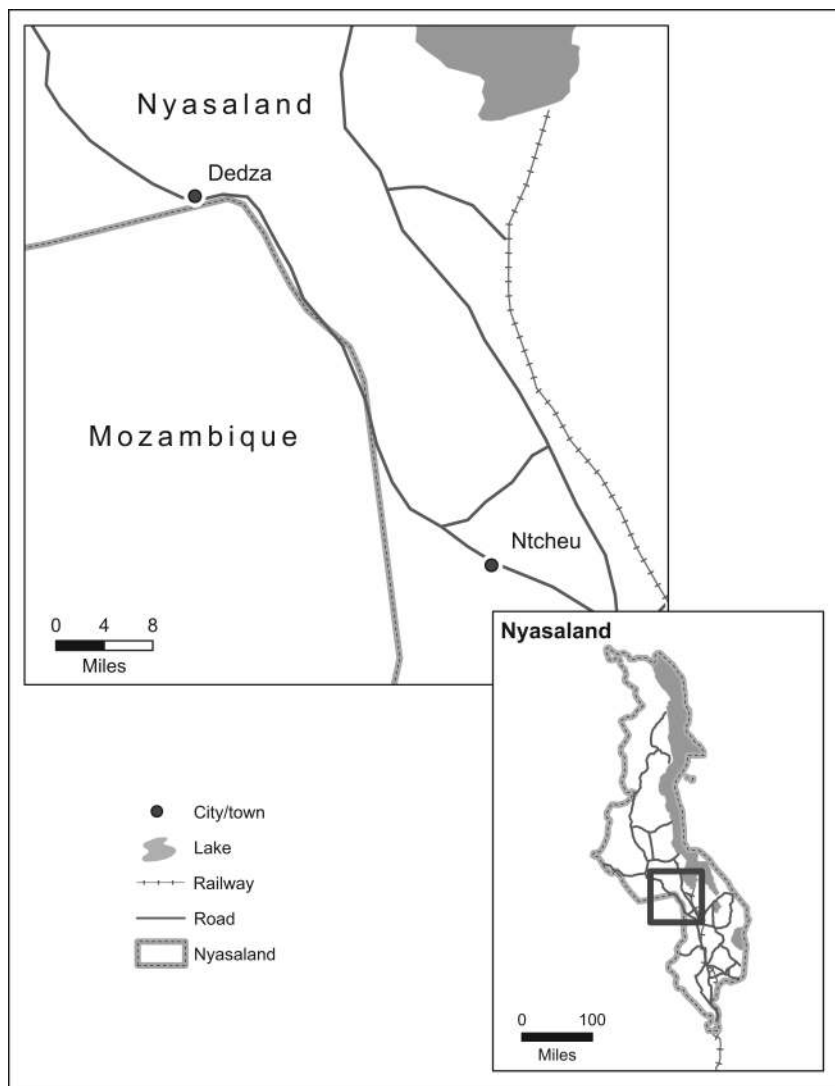


FIGURE 5.2. The Ntcheu–Dedza Road, Nyasaland, 1930s. Map by Di Shi.

emerged from overlapping decisions dating back to the 1890s. Then, as part of the scramble for Africa, the British and Portuguese had bickered over the boundaries between the Central Africa Protectorate and Mozambique, finally finding an agreement in the 1891 Anglo-Portuguese Treaty.

This agreement used the watershed in this steep, upland region to define the frontier, creating an irregular, sawtooth border and a sweeping S-curve that enveloped Nyasaland on three sides. Despite the agreement, the informal nature of Portuguese colonialism well into the interwar era meant that neither side closely monitored the border. Further, the customary lands of the Ngoni people straddled the Anglo-Portuguese border and extended into southern Tanganyika. The Ngoni moved freely between the territories, planting maize and grazing cattle in both Nyasaland and Mozambique.

When the British undertook road construction during and after World War I, the technical demands of roads clashed with the environmental definition of the territorial boundary. A London-based official, trying to make sense of the issue, wrote that “apparently the diversion of the road through the Portuguese territory was found necessary to avoid the range of hills which is situated on the Nyasaland side of the boundary,” which would have greatly increased costs and exposed the road to washouts and landslides.¹¹⁰ In response, given the Portuguese indifference to policing the boundary, the British officials followed sound technical principles and built the road through Portuguese territory in numerous sections. Luckily for the British, the Portuguese simply overlooked the matter for many years, and as Governor Kittermaster wrote in 1934, “so long as the Portuguese are quiescent it will be well to let sleeping dogs lie.”¹¹¹

Unfortunately for the governor, the Ngoni use of the road brought the issue to Portuguese attention. The Ntcheu–Dedza road was no deserted route that connected the tobacco-producing north to the railway at Blantyre. Instead, Ngoni economic life oriented around the roads. “It is not only the road,” wrote Kittermaster, that violated Portuguese territory. The increased action along the roadway led to the creation of “some large native villages with their gardens and grazing areas,” as well as “several Indian stores” created to serve road traffic and local residents.¹¹² The road thus shaped the economic and social geography of the area, and although the gardens were initially few in number, “in recent years the natural increase of population has impelled more and more natives to seek land for cultivation across the border, until a total of 281 gardens have now been made there.”¹¹³

This combined with a shift in Portuguese colonial policy under the finance minister (and future dictator / prime minister) António de Oliveira Salazar. Well into the 1920s, the Portuguese state leased massive estates known as *prazos* to private owners and concessionary companies. On the prazo, the owner acted as

sovereign over a fiefdom, compelling labor, raising armies, and collecting hut taxes directly in exchange for a fee paid to the state. In the late 1920s, Salazar edged the concessionary companies out of Mozambique and, through the 1930 Colonial Act, brought the long-decentralized governance and quasi-feudal “delegation of authority” in Mozambique under the centralized control of the Colonial Office in Lisbon.¹¹⁴

In short, Salazar oversaw the comparatively late transition of Portuguese colonies from an informal colonialism, in which private companies dominated the economy and governance, to a formal colonialism in which the Portuguese state administered Mozambique. The Portuguese colonial state took over former concessionary lands, and the Mozambique Geographical Commission traveled the colony to better understand its residents and resources. This combination, Governor Kittermaster noted, brought the frontier violations to the attention of the Portuguese authorities, and “an intimation has been received that the infringements can be tolerated no longer.” Whereas the concessionary companies cared little for the British road and Ngoni mobility, the nascent Portuguese colonial state did. In response, the British sought to entice the Ngoni along the border to resettle in the lowlands of Nyasaland east of the frontier, where “fertile tracts . . . have been opened up by the extension of the railway” from Blantyre to Salima. British officials hoped that the Ngoni would cultivate cotton, which grew well in the lowlands of the protectorate.¹¹⁵ Once again, the Ngoni hampered the simplistic plans of the British administration. The tsetse flies of the plain, which spread widely in the protectorate in connection with the movement of troops and supplies during World War I, exposed cattle to trypanosomiasis.¹¹⁶ In response, Ngoni men traveled to the lowlands to claim land, leaving their wives in the uplands to tend livestock along the border. Governor Kittermaster rued that “consequently there is no diminution of the need for gardens and grazing grounds in close proximity to their old habitations.”¹¹⁷ The British administration found itself no closer to a solution to the frontier problem created by roads.

British officials continued to work behind the scenes to craft a local *modus vivendi* between themselves, the Portuguese, and the Ngoni, but the damage was done.¹¹⁸ A road that promised a simple solution to a material problem—delivering tobacco from northern Nyasaland to the rail terminal at Blantyre—unleashed unforeseen political, social, and economic effects and refigured British-Portuguese-Ngoni relations in the region. While railways could produce similarly unintended effects, their operation by the colonial state, at the very least, provided officials some sense of control over economic development, settlement patterns, and administrative practice. The construction and use of roads, undertaken without oversight and direction from either the British capital in Zomba or the Colonial Office in London, appeared anarchic and chaotic

to a British officialdom steeped in railway doctrine. After tracing the beneficent cycle of the growing tobacco industry and expanding road transport companies in the interwar period, the protectorate's chief transport officer retrospectively concluded that "even in the case of tobacco, which is now probably the highest priced economic crop of this country, and most able to carry high freight rates, the commercial road industry may be considered as having been an incubus and an influence tending to reduce production."¹¹⁹ Even the ostensible successes of road transport caused deep consternation.

The Conforzi Affair

We return to the threat of Inaco Conforzi's colonial entrepreneurship. Because London forced Nyasaland to service the debts incurred to build railways in Mozambique, the administration, inspired by developments in Tanganyika and Kenya, drafted legislation in 1932 to define the proper relations between railways and motor transport. As the administration of Nyasaland sought to define the new railway regime, Conforzi traveled to Zomba to lobby British officials. After numerous discussions, the Italian received a letter in November 1932 from the acting chief secretary of Nyasaland, John Abraham, informing him "that as there was no obligation for him to use the railway that his apprehensions were groundless." The draft bill was eventually withdrawn, and Conforzi made further investments in his truck fleet.¹²⁰ Thus, when the protectorate followed the example of Kenya and Tanganyika and enacted its own motor traffic ordinance in 1934, effectively banning road transport for businesses moving their goods from central to southern Nyasaland, Conforzi benefited from an exception.¹²¹ Nevertheless, Conforzi's truck fleet continued to bedevil British officials, and the situation quickly devolved into a battle between the state-owned rail company and the Italian tobacco magnate. To officials in the protectorate, Conforzi's trucks, which plied public roads for private profit, epitomized the "uncontrolled individuality" of automotive empire. Conversely, the railway's coupling of infrastructure and vehicle brought all operations and profits under the aegis of the state, which claimed to orchestrate development for the protectorate as a whole. Obviously, these two models produced very different effects on business and created divergent relations between residents of the protectorate and the state. The transport question cut to the very core of the administration and the future development of the territory.

What transpired became a battle over whether private rights (limited to white settlers) or the public good should define the colonial system. The Conforzi carve-out was a thorn in the side of officials in Zomba and London alike. J. A.

Calder of the Colonial Office wrote to Governor Kittermaster in November 1935 that the fifteen hundred tons of tobacco transported using Conforzi's private trucks, most of which used roads running parallel to the railway, posed a problem. "Not only would that traffic make a great difference" to rail revenue, Calder wrote, but London was "apprehensive that other tobacco growers may wish to follow Conforzi's example." Calder admitted "how difficult these problems of road v. rail are" but noted that when Colonial Development Fund monies were assigned to extend the railway and improve feeder roads, "it was certainly not our intention . . . that motor transport should be allowed to use these roads to the detriment of the railway. Government has a very big financial stake in the Railway."¹²² Frederick Hammond of the Nyasaland Railway concurred, sharing his concern that if Conforzi enjoyed his exception indefinitely, it "would induce others to press for permission to do the same thing."¹²³

Governor Kittermaster, who had to ensure the harmonious operation of the protectorate, saw the question in less doctrinaire terms. In response to J. A. Calder, he expressed his sympathy for Conforzi, one of the richest and most influential residents of Nyasaland, writing that he did not think it fair "that he should be told he has got to scrap most of his fleet at a moment's notice" after he had invested in its development for over a decade. Forcing Conforzi to use the railway would not only be unfair but would ultimately harm the economic interests of the protectorate. Whereas Conforzi's existing operation loaded baskets with loose tobacco at Lilongwe and offloaded them at the factory in Cholo, "if he is forced to use the railway, it means that he must rough-bale at Lilongwe, load on his motors, off-load at Salima, put in train, offload at Limbe [Blantyre] on to lorries, transport to Cholo, and offload at his factory." Such a rigamarole, Kittermaster noted, would force Conforzi "to alter his whole organization in both Lilongwe and Cholo." Kittermaster sympathized with Conforzi, writing that "it will be unjust to compel him to shift his whole basis of operations at once to suit the investments which the government has made." As a compromise, Kittermaster had informed Conforzi "that he will be allowed to carry on for the next three years" but asked the Italian to halt importing new vehicles and to "adapt himself" to the new rail regime.¹²⁴ London begrudgingly accepted Kittermaster's proposal, but not without an official appending a note that "it is no less unfair that Mr. Conforzi should be allowed to occupy a special position as compared with the other primary producers."¹²⁵ While Nyasaland's governor was keen to massage relations with an important resident, the Colonial Office worried that the agreement with Conforzi was a slippery slope.

For his part, Conforzi recognized that even this compromise threatened his market advantages, and in late 1935 he once again lobbied the government on the matter. Conforzi attested that the motor traffic ordinance should not apply to

him, claiming "I am not a transport contractor," and "I have never had any intention of carrying for reward." Instead, "my transport organization was created as complementary to my tobacco buying activities and at a time when no transport facilities were available." Thus, he argued, "any inference that I am competing with the Railways is unfair."¹²⁶ The intended target of the ordinance was the race-to-the-bottom competition between small motor transport companies and the deleterious effects on railway freight, Conforzi argued. Further, Conforzi was surely aware of the protectorate's financial straits, which made transporting freight by rail two to five times more expensive in Nyasaland as over the same distance in neighboring Rhodesia.¹²⁷ The Conforzi carve-out posed a fundamental question about the economy and administration of the protectorate. With the Northern Extension complete, did the railway have a justifiable claim to all freight in the territory, regardless of preexisting private investments? Could the protectorate veer off its automotive path and return to the mold of British railway empire?

In London and Zomba, officials reassessed the terms of the agreement. In 1936, the attorney general of Nyasaland opined that because the administration made assurances to Conforzi in relation to the withdrawn draft bill of 1932 and *not* in reference to the 1934 motor traffic ordinance, the promise was not legally binding. A. S. O. Hodgson, writing to J. A. Calder on behalf of the governor, however, did express his discomfort that the implied permission would be revoked on such a legal technicality. Further, various figures in Nyasaland stressed that forcing Conforzi to use the rails not only clashed with rational principles of transport—faster, cheaper, more direct—but with the established science of tobacco and the demands of the market. Conforzi claimed that the "particularly delicate" nature of his proprietary, sun-cured tobacco made it impossible to transport by rail. Nyasaland's director of agriculture shared his opinion.¹²⁸ According to Conforzi, because sun-cured tobacco fermented easily in transit, the delays incurred traveling by rail would mean that "a good portion is bound to arrive at Cholo heated and useless." It would be unfortunate to force him to use the railway, Conforzi warned, because the collapse in tobacco prices during the Depression meant that "the only recourse for me would be to stop growing it entirely and to close down all the estates and dismiss my European staff and native labor," throwing thousands of workers into unemployment and robbing the state of crucial revenues as it ran regular deficits after 1928. Expressing his offense, Conforzi noted that he had worked in the territory since 1907 and reinvested his profits in further development, which benefited the protectorate as a whole, including the railways.¹²⁹

Conforzi's allies in the administration of the protectorate agreed, arguing that if forced to use the rail, he would "be compelled to erect fresh organization

at Limbe,” requiring “a complete duplication” of his factories. Hodgson cautioned that “it would certainly not be to the advantage of the country if he were forced out of business” and suggested a new solution: that Conforzi pay for licenses to operate his vehicles, allowing the administration to recoup costs for road maintenance, since “his lorries do a great deal of damage.”¹³⁰ In November 1936, the issue appeared solved when, following a meeting with Conforzi and his lawyers in London, Calder instructed Kittermaster that rather than creating a separate agreement, Conforzi should simply apply for a license with the Motor Traffic Licensing Board (MTLB), which could then determine if allowing Conforzi’s motor fleet to operate advanced the interests of the protectorate.¹³¹ A solution had been found within existing legal frameworks in the territory that considered Conforzi’s economic contributions to Nyasaland in a holistic sense and which refused to treat the territory’s transport question as a binary choice.

For a time, the Conforzi carve-out held. Nyasaland’s chief secretary wrote to Conforzi’s counsel in September 1936 that “if indeed it was a fact that air-cured [i.e., sun-cured] tobacco could not be transported satisfactorily by rail, Mr. Conforzi might assume that he would be allowed to use his lorries for this purpose, as it was desirable to encourage the development of new industries and markets.” For Governor Kittermaster, the development of Nyasaland’s economy clearly took precedence over strict legal textualism. The MTLB granted Conforzi a license to operate his trucks through April 1937, and then extended that right through the end of 1937. Conforzi was then shocked to learn that the MTLB rejected his application for licenses to continue operating his trucks as usual in March 1938, without soliciting statements from him or hearing any evidence. The MTLB recapitulated earlier arguments against Conforzi’s trucks, arguing that if they approved his license, they could not justifiably deny other applicants, and that his trucks “would be competing with the Railway and must be put a stop to regardless of the consequences.” Conforzi reprised his counterarguments, averring that “if he were forced to send his tobacco this year by rail, he might not send any at all” because it would be impossible to make a profit. He continued with a threat: the following year would see him refuse to plant any crop, throwing three to four thousand Indigenous farmers out of work, “exclusive of their families,” and pulling his 1.5 million pounds of export tobacco off the market.¹³² The roads-versus-rails debate, which had already absorbed significant attention in the protectorate for over a decade, became even more divisive in the late 1930s.

Issues came to a head in 1939, when Conforzi appealed the decision of the MTLB. One member of the board ventured that “the case under review was probably the most important case the Board had ever considered or were likely to

consider.” The case was about far more than Conforzi’s trucks. It had implications for the territorial organization of the protectorate, its economic system, its balance of public and private prerogatives, and the very nature of the British colonial state. When the MTLB denied Conforzi’s appeal in April 1939, he contested the decision, sending the case to the High Court of Nyasaland. There, the board immediately encountered problems. The MTLB met irregularly and had a poor habit of keeping minutes, making it difficult to reconstruct the reasoning behind their decisions. Further, as the MTLB was a “quasi-judicial body,” its right to retain legal counsel in the appeal was unclear, and the attorney general of Nyasaland declined to represent the board. In his place, the secretary of the MTLB, a district commissioner in the protectorate who was not trained as a lawyer, argued before the High Court. Members of the board were scandalized to learn that Conforzi and his lawyers had held several private meetings and exchanged correspondence with Governor Kittermaster and his successor, Donald McKenzie-Kennedy, who became governor in March 1939. In the words of one board member, these communications were “a most extraordinary state of affairs, and I imagine highly irregular.” At the core of the case, the MTLB argued, was ensuring the greatest good of the protectorate and its residents. In assessing Conforzi’s license application, they argued, “we were convinced and are still convinced that it is not a question of public interest, but Dr. Conforzi’s interests that are at stake.” Of much greater importance to the public, the board contended, was the lost railway revenue guaranteed to Nyasaland by the motor traffic ordinance.¹³³

In a dubious legal strategy, rather than litigating the question of what constituted the greatest benefit to the public—forcing Conforzi to use the railway or allowing him to continue to use his trucks—the board questioned Conforzi’s agricultural expertise, arguing that he shipped his tobacco at an unnecessarily high moisture content.¹³⁴ A witness called by Conforzi’s legal team quickly dismissed the claim. Mr. Ness, the Nyasaland manager of the Imperial Tobacco Company, confirmed that “the sooner this type of tobacco was got to the factory the better” and that an agent like Conforzi “must produce and treat his tobacco in accordance with the wishes of the manufacturer.” After hearing the argument on both sides, Judge Musgrave Thomas decided in favor of Conforzi, writing that the appellant had proved that transport by rail would damage his crop, and that “the damage it would suffer is such as to render almost certain its rejection by the manufacturer in England for whom the crop is expressly grown, with the consequent loss of employment of several thousand natives engaged in its production.”¹³⁵ In his post-trial correspondence, Governor McKenzie-Kennedy agreed, writing that he was convinced that forcing Conforzi to use the rail would harm his crop, and “in that event not only Dr. Conforzi, but his employees, his

hundreds of native tenants, the public revenues and the railway would suffer.”¹³⁶ Before the High Court, the board had ceded the ground of public interest to Conforzi, who successfully used the demands of metropolitan tobacco manufacturers and his own purchase of tobacco from Indigenous tenant farmers to argue that the economy of Nyasaland depended on his ability to transport tobacco by truck. Automotive empire, Conforzi’s legal team convinced the judge, was not an anarchic vehicle of “uncontrolled individuality” but instead served the public interest by allowing private businesses to pursue profit. In the terms offered by Lugard in the 1920s, it was automotive empire that advanced the principles of decentralization and indirect rule, not the railway.

The case had been decided in Conforzi’s favor, but it continued to reverberate in the protectorate. The quasi-judicial function of the MTLB meant that it could not appeal the decision. The entirety of the board resigned in protest.¹³⁷ Governor McKenzie-Kennedy and Judge Thomas both excoriated the board for its bias (most members were either employed by Nyasaland Railways or part of the pro-railway administration of the protectorate), its opaque meeting practices, and dubious authority. The governor wrote to London to complain that “the system whereby interested parties sit as members of the Board” did not function, and that when questioned, members of the board complained that they were “publicly pilloried.” McKenzie-Kennedy noted that “the danger of interested parties constituting themselves as judges in their own cause” made “a Motor Transport Licensing Board composed of representatives of transport interests . . . peculiarly liable to accusations of partiality.”¹³⁸ The protectorate’s war against automotive empire had absorbed the attention and energies of countless officials, lawyers, and private residents in Nyasaland for the better part of a decade, only to reaffirm the status quo in the British empire. The Colonial Office would begrudgingly allow motor services to operate, under heavy regulation, with little support from the colonial state, which functioned as a railway scheme as much as a collection of administrative institutions.

Inaco Conforzi’s misadventures in Nyasaland staged the tensions that defined interwar British Africa in a particularly dramatic fashion, but a wider lens shows similar developments elsewhere. Even though the sun never set on the interwar British empire, Britain’s skepticism of automotive empire symbolized the frailty of its vast imperium. In Tanganyika in 1925, the Frenchmen on the Citroën mission observed that “the routes traced formerly by the Germans have been abandoned.” Nearly twenty years after Paul Graetz’s first automotive foray in East Africa, no automotive road existed between the coastal capital of Dar es Salaam and inland Tabora. The French travelers found it “extremely interesting” that “the hinterland of the ports of the east coast of [British] Africa is entirely served by railways, to the exclusion of any system of roads.” As a result, “the work of

colonization is found grouped along the railways,” while “in the interior vast wild stretches are to be found where the natives still live in their primitive fashion.” The authors frowned upon the “complete lack of roads” and described the “bewildering sensation” of moving “without any transition from primitive conditions of life to Anglo-Saxon refinements. . . . We seem to make a bound of twenty centuries in one hour.”¹³⁹

The French visitors diagnosed an entirely different attitude toward automotive empire in British Africa. Tanganyika combined German and English attributes, with the “remarkable faculty for organization” of the Germans embellished by the English, who “have added their sense of what is comfortable.” Everywhere in eastern and southern Africa the French found “England transplanted to Africa,” creating “a new country in which there is nothing new, wherein, on the contrary, everything is organized so that the European may feel at home and wish to stay there.”¹⁴⁰ Although the members of the Citroën expedition eschewed nuance in favor of stark contrasts, as an assessment of the approach to automotive empire, the distinction was not far off. While the French elaborated detailed (if misguided) plans to transform their colonies through road construction and motorization, British officials and white settlers obsessed over automobiles as metropolitan artifacts of “what is comfortable” and symbols of colonial difference. Indeed, automobility and whiteness overlapped in the British colonies, as in Kenya, where a full 80 percent of the colony’s white residents registered as members of the Royal East African Automobile Association (REAAA) in 1928.¹⁴¹

The Germans, too, carefully monitored happenings in Tanganyika, using their former colony as leverage in international forums.¹⁴² Nazi officials planning for the future seizure of Tanganyika described a lamentable transport network, which would require the Germans to clean up the mess left by the British.¹⁴³ Konrad Schauer, a German resident of Mbeya Province, mocked British claims of an “all-weather road” in his district. As Schauer drove north, the flooding of the Ruaha River left the landscape inundated by three feet of water twenty miles from its banks. He could drive no farther, and the author and his African chauffeur waded onward. On the way, they encountered two other stranded cars. The traveling party gained another African chauffeur, a Briton, two Greeks, and an Indian man, while two European women perched on the shoulders of the African chauffeurs-cum-porters. They hiked for two miles before reaching higher land, menaced by mosquitoes all the while.¹⁴⁴

For critics of British methods in Africa, British failures were material and symbolic, systemic and profoundly intimate. The road failed to separate African nature from European civilization, producing a variety of degrading results in the racist framing of the author: the abandonment of the totemic automobile, the

trade of mechanical speed for the slowness of foot travel, and the direct physical contact of European women and African men. But as the next chapter will show, comprehensive French projects to transform African territories into an automotive empire, while certainly ambitious and offering the impression of vigor, managed to be far more disruptive of African societies, while proving no more effective in extending European interests on the continent.

THE FRENCH MODEL

The Socio-ecological Civilizing Mission

Route Nationale 1, created in the nineteenth century, wound through the Saharan Atlas Mountains of Algeria to connect Algiers to the commune of Laghouat some 250 miles south. The fluctuations of the Oued M'zi, a seasonal waterway located just outside Laghouat, bedeviled traffic, and French officials had discussed constructing a bridge since the 1890s. In early 1923, with attention trained on Saharan automobilism following the first Citroën crossing, the Municipal Commission of the mixed commune fielded complaints from Arab and Berber residents and European settlers about the "current miserable state" of the road. Local officials had laid wooden planks over the sand to create traction for cars and footholds for pedestrians and camels. Sand blew regularly over the planks, obscuring them, and groundwater periodically welled up from beneath the sand, leaving travelers to ford the swamp even in the dry season. Crossing during annual floods was "impossible or dangerous" and "a constant inconvenience," and mail trucks regularly became stranded and abandoned the crossing. The French secretary of the Municipal Commission declared improving the passage an urgent concern because its unreliability disrupted not only commerce and administration but also "the future of Laghouat as a tourism station," which the Citroën crossing convinced the commission was imminent.¹

The commission recommended a bridge to raise the road platform above the sand and water. That spring, a Ponts et Chaussées engineer from Djelfa traveled to Laghouat and observed that "extremely mobile" dunes prevented a lasting solution to the problem of sand blowing over the road. The administration could only act "when sand becomes a hindrance to circulation and wait until

the passage of a significant flood clears the too-sandy roadbed.” He concluded that while the administration regularly drained water from the passage, only the construction of a bridge would definitively solve the problem and allow Laghouat to realize its economic and touristic potential.² The following year, officials from Algiers traveled to Laghouat, and the head engineer of the Algiers Ponts et Chaussées declared that “the urgency of the works is no longer to be discussed.”³ The time had come to subdue the Oued M’zi.

To succeed, the administration had to overcome two antagonists: the Saharan environment and the Algerian laborer. Average temperatures in Laghouat during the summer soared past 100 degrees Fahrenheit, and violent storms menaced the commune in late spring and early autumn, transforming the dry riverbed into a torrent. Meanwhile, Laghouat’s water resources had to be used to make cement and hydrate workers without disrupting the irrigation that sustained date palms and goat herds.⁴ The French administration also carefully monitored the workers, claiming the right to inspect workshops and construction sites to ensure proper order and the quality of work.⁵ Further, the French sought to uphold racial hierarchy by reserving skilled labor for Europeans while dictating that European manual laborers would be paid twice as much as their Arab and Berber neighbors for the same work.⁶ This was more than a construction project; it was a performance of the envirotechnical and social order of European empire.

Meanwhile, engineers in Algiers drew up plans for a road bridge that could be retrofitted to serve as an eventual rail extension from the current terminus in Djelfa. For those who worried about the mix of (presumably European) mechanized traffic and (non-European) transport by foot and camel, one engineer argued that concerns about the use of the route by “still-primitive populations” were misplaced. Indeed, he argued that the bridge would be transformative: “There is no doubt that the development of mechanical traction on the road exerts a very effective instructive effect on users of the route, *even those whose degree of civilization is not advanced*” (emphasis added).⁷ French officials and technical experts believed that the mere encounter with modern mechanical transport, engineered infrastructure, and European traffic patterns would civilize Algerians, justifying French investment. Put more simply, recalling Rudyard Kipling’s aphorism, transportation *was* civilization.

The bridge over the Oued M’zi encapsulates the French model of automotive empire, which aimed at a dual transformation. Although the French empire is associated with its self-proclaimed “civilizing mission” abroad, interwar commentators cast that mission more broadly, as a shared European project.⁸ The former governor-general of Madagascar, Marcel Olivier, proclaimed in 1931 that “if the system and methods of colonization vary according to each nation, colonization itself is a collective work of a civilization to which all [colonizing] nations

lay claim.” Whatever their disparate methods, each sought to realize “the triumph of progress over barbarism, discipline over chaos, intelligence over instinct.”⁹ Similarly, the French Musée des Colonies, opened in 1931, communicated the common project of civilization as the pursuit of two related colonial projects: “to elevate and improve man” and “the development of the soil.”¹⁰ The historian Corey Ross has described this two-pronged program as the shared “socio-ecological project” of European imperialism that connected modern European schemes across regions and eras.¹¹

In interwar French Africa, roads wove the social and ecological threads of development into a single project. In social terms, colonial officials argued that building roads would “civilize” individual African workers through labor. Simultaneously, motorized mobility would triumph over the challenges posed by Africa’s geographical scale and low population density, promoting the circulation that would improve commerce, administration, and public health. In ecological terms, administrators and engineers sought to manage varied soils, master tropical hydrology, and overcome a dearth of construction materials to use infrastructure to “liberate latent necessary riches.”¹²

The idealization of imperialism as a utopian socio-ecological project paradoxically justified the use of forced labor in the name of progress and underlay the compulsory roadside resettlement of colonial subjects. Interwar road construction in French colonies aimed at nothing less than the replacement of the precolonial socio-ecological order with a European one that reshaped African space into European territory. Europeans sought to extirpate what they saw as the lamentable inheritances of precolonial Africa by creating entirely new roads along paths designed to serve developmental needs defined by Europeans. The wholesale spatial reorganization of the colonies, European officials believed, would allow capitalist economic and social relations to take root in Africa. This project was at once ubiquitous and mundane, utopian and chronically underfunded, making roads the site of immense efforts and endless frustrations. For the millions of Africans who built automotive empire, roads were sites of coercive violence. Thus, road construction built not only transport infrastructure, but the social and spatial relations of empire in the interwar era.

In the process, road boosters defined common theories of Europeanness. As the previous chapter showed, many observed a common road politics in “Latin” Africa in the 1920s and 1930s that connected French colonies to practices in Belgian Congo and the Portuguese colonies of Angola and Mozambique. When Fascist Italy turned its attention to colonial development in the 1930s, it, too, fit the model. Whereas the British subsumed road development to colonial rail politics, Latin African colonies shared common traits. Some of these were ecological; outside of North Africa, the colonies of Latin Africa lay largely in the tropics, both in

terms of their latitudinal position and their climatic and environmental features, real and imagined. Wet climates fed massive river systems such as the Congo and Niger and sustained tropical forests that, to Europeans, appeared impenetrable. In social terms, outside Algeria, Latin African colonies had small white settler populations, meager outside investment, and low population density. As a result, French, Belgian, Portuguese, and Italian officials believed that motor vehicles could overcome the scale of their large, sparsely populated colonies and would spur the development of capitalist agriculture and extractive industries. And most importantly, in marked contrast to British official pronouncements, each Latin African administration rationalized forced labor as necessary to accomplish its goals.¹³

The sprawling federations of French West Africa (*Afrique Occidentale Française*, AOF) and French Equatorial Africa (*Afrique Équatoriale Française*, AEF), as well as the French Cameroon Mandate that abutted AEF, reveal the socio-ecological dynamics of Latin Africa. The French framed road construction as a manifestation of their self-proclaimed civilizing mission. While sharing a family resemblance as automotive empires, the other Latin powers did not pursue automotive empire as aggressively as the French in the interwar decades. In Portuguese Africa, the reasons were political and economic. A surge of railway development by concessionary companies in Angola and Mozambique before and after World War I and close infrastructural and economic connections to neighboring British colonies made roads a secondary infrastructure, not an all-encompassing program for development.¹⁴ In the Belgian Congo, the reasons were ecological. The Belgians built roads but focused on filling the blank spaces between the various arms and tributaries of the mighty Congo River, the colony's transport "spine."¹⁵ Thus, neither the Belgians nor the Portuguese accorded roads the foundational role and transformative potential with which the French endowed them. As we will see in the following chapters, when the Italians turned to colonial development, they built a Fascist empire from French blueprints. It was the French who had promulgated the idea of a civilizing mission in the nineteenth century. In the tropics, which epitomized the "Dark Continent" in the European imaginary, the French placed roads at the center of their self-proclaimed mission to civilize lands and peoples.

The Colonial Road in the Tropics before World War I

To understand how roads encapsulated the interwar civilizing mission, we must first grapple with the colonial regime they replaced. The French claimed African

equatorial territories in the last two decades of the nineteenth century. The Italian-born Frenchman Pierre Savorgnan de Brazza undertook exploratory missions in the Congo Basin and signed treaties of dubious legality with Indigenous chiefs, claiming the colonies for France.¹⁶ At the turn of the century the French attempted to develop the colonies on the cheap by granting vast timber and rubber concessions to private companies.¹⁷ The French colonial government hardly existed in equatorial Africa before 1910, and kidnapping, torture, rape, and murder defined the capricious concessionary system. An international scandal erupted in response to revelations about concessionary abuses in the first years of the century, leading to an investigatory mission spearheaded by Brazza himself in 1905. Although the French government buried the embarrassing results of the report, by 1910 they had committed to replacing the concessionary system and reorganized the separate colonies into the AEF federation.¹⁸

The ranks of colonial administrators quintupled from fewer than one hundred to over five hundred, but their task was a difficult one. At almost one million square miles, the federation was nearly five times the size of metropolitan France. AEF sprawled northward from the equatorial colonies of Gabon and Middle Congo (now Congo-Brazzaville) past the Tropic of Cancer to Chad, where woodlands gave way to savanna and, finally, the Sahara. In the middle of the federation was Ubangi-Shari (now Central African Republic), a landlocked colony that lay between the tropical southern colonies and arid Chad. The colony's two eponymous rivers defined it and pulled it in separate directions. The Ubangi River and its headwaters formed its southern border with the Belgian Congo and flowed southward into the Congo River, orienting the southern part of the colony toward the equator and the Atlantic Ocean. The tributaries of the Shari River, to contrast, gathered in the northern portion of the colony and converged to stream northward into Lake Chad (figure 6.1). The vastness of the federation, and the hydrological divide in Ubangi-Shari in particular, plagued French efforts to rule AEF effectively.

In the years before World War I, French officials decided to build a road to bridge the two hydrological regions. Fort Sibut was the colony's northernmost point of the Ubangi River Basin navigable by boat, while Fort Crampel was the southernmost location in the Shari River Basin. Between them lay a ninety-five-mile section of relatively flat terrain that, if connected by road, would link the two river basins and allow the French to traverse the federation from Lake Chad to the Atlantic Ocean. Thus, before World War I the French designed roads in AEF to complement and extend the vast fluvial network of their equatorial territories. In April 1910 the administration of AEF approved 2.7 million francs to construct the Shari Road (*route du Chari*), with another 450,000 francs allocated to construct permanent metal bridgeworks where necessary.¹⁹ Building the road

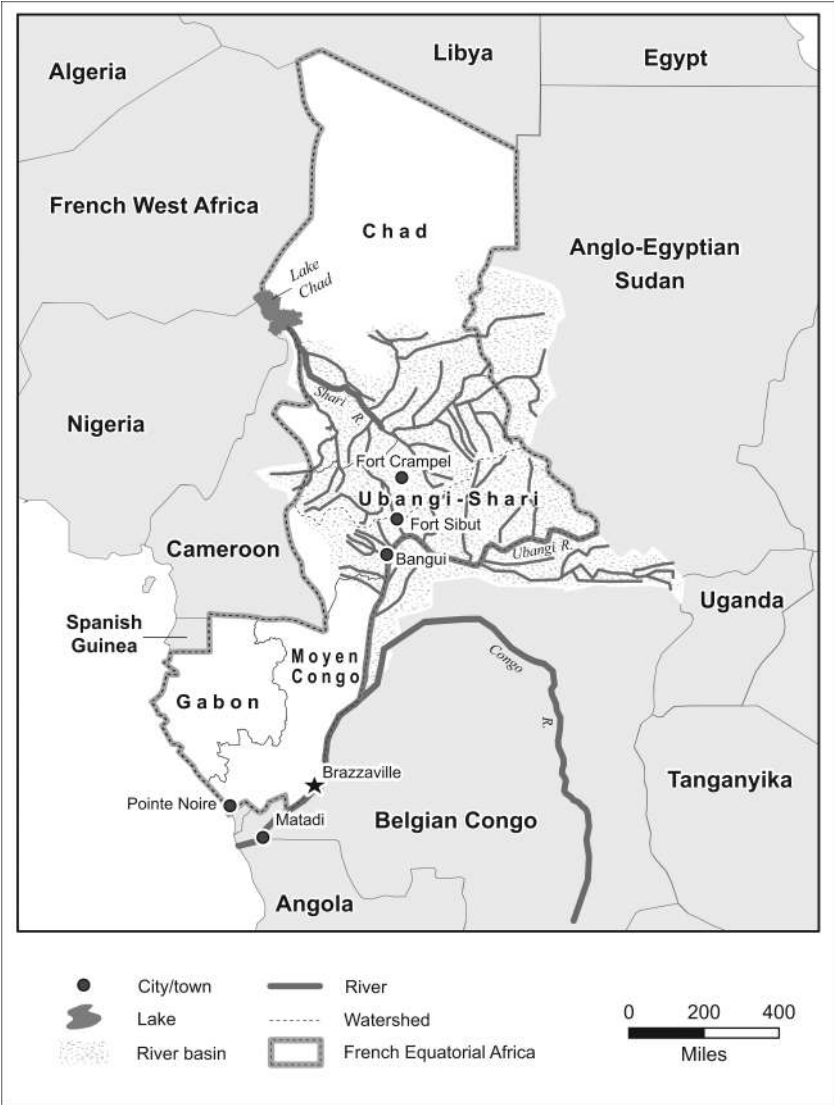


FIGURE 6.1. French Equatorial Africa, 1910. Map by Di Shi.

was among the first acts undertaken by the government of the newly formed federation, a signal of its perceived importance to improving governance in the colony. The French were not the first to recognize the potential economic benefits of connecting the Ubangi and Shari Basins. The Shari Road project retrofitted existing porter paths used by the Gbaya and Banda peoples of the region between the rivers. The administration entrusted the construction of the road to Artillery

unified narrative of progress. The assessment of the Shari Road was anything but routine, the back-and-forth correspondence producing a fractured and contested narrative. Tixier's report documents not only Veyrier's poor stewardship of the vital road project but also the threadbare nature of the prewar French administration and the lack of common vision for the place of roads in the colony's future.

The road project was poorly run from the beginning. Shortly after Veyrier took responsibility for construction, he stayed for a month in the capital of Brazzaville and instructed an officer named Dagand to prepare studies for the road. Inspector Tixier described Dagand's plans as "insufficient from a topographical point of view" and produced "from feeling [*au sentiment*]," rather than onsite observation. Inspector Tixier questioned Veyrier's illogical approach to the entire project. Veyrier directed the planning from Brazzaville, eleven hundred miles from Fort Sibut, having only traveled the planned path once while journeying from Chad to Brazzaville. Nor was this the first time that Veyrier had failed to produce requested preliminary studies for a road project. Lieutenant Governor Estèbe weighed in, informing his colleagues that Veyrier had been subject to "severe reproach and even disciplinary sanctions" by various officials. Veyrier repeatedly failed to follow written instruction and obey the chain of command, and Estèbe opined that despite Veyrier's talents as an engineer, he should not be "placed at the head of an important enterprise."²⁰ Veyrier's improvisational approach to his tasks simply would not suffice as the French sought to replace the chaotic concessionary model with a modern colonial state.

Veyrier's failures were glaringly obvious when construction began. The work commenced in February 1911 even though preliminary studies were still incomplete. Tixier criticized not only Veyrier's disregard for planning but his lack of coherent vision for the project. Whereas AEF's leaders had indicated a strong preference for replacing porters with wheeled traffic, Veyrier was convinced that the road would be made redundant shortly by the construction of a railroad. He thus laid out the road with porter traffic in mind, with an eye to reliable water resources that porters required to slake their thirst. While Veyrier's path worked for porters who could ford standing water, for the automotive traffic imagined by administrators the route multiplied manyfold the number of bridgeworks required, while exposing the road to runoff and erosion.²¹ Veyrier's impertinence exposed a French administration caught between transformative visions and hard realities. Administrators imagined a quick and efficient transition to motorized traffic to connect the two river basins, whereas Veyrier was convinced that porters would suffice until the railway could be built in the coming years.

To build the road, Veyrier recruited residents of the region through *prestations*, as Joseph Gallieni had done in Madagascar. This dreaded "sweat tax," accurately described by Tixier as forced labor, compelled able-bodied Gbaya and Banda

men to build the road.²² The French soothed their own humanitarian concerns by framing forced labor both as classically French—an echo of the early modern *corvée*, which a later author assured his readers “also exists in the metropole”—and a continuation of African customary obligations.²³ Tixier admitted that the laborers who reported to the worksites did so only because they considered it unavoidable. But Tixier also rationalized the coercion, writing, “There was no choice: it was necessary to force the natives to work, or it was necessary to resign oneself to not build the road.” He approvingly quoted the French administrator responsible for the Fort Sibut subdivision, who opined that “the natives prefer working on the road to portage,” a common refrain used to justify labor obligations.²⁴ For the workers who performed manual labor removing stones and stumps from the path, forced labor in service of transport formed a continuity between precolonial chiefdoms and the colonial state: whether as porters or road builders, whether used to advance trade or political power. In fact, colonial officials depended on those chiefs as “central brokers” to fill recruitment quotas, making road labor recruitment a lever of interethnic African politics that operated under the umbrella of the colonial administration.²⁵

On his inspection tour, Tixier found that the problems of the road and the weaknesses of the prewar automobile compounded one another. The inspector undertook the round-trip drive with Veyrier between Fort Sibut and Fort Crampel in a Dion-Bouton automobile. On their first attempt, a tire punctured and the car careened into a ditch, injuring Veyrier and an aide. After conducting repairs, the traveling party attempted the journey another time. They left Fort Sibut at 6:45 a.m. and had an uneventful drive before encountering mechanical troubles at 5:30 p.m., nine miles from Fort Crampel. Although tantalizingly close to their destination, they stopped to eat and “to recruit natives,” who pushed the car to its destination, arriving at 1:40 a.m. the next day. With the automobile inoperable, Tixier and Veyrier abandoned it and returned to Fort Sibut by horse.²⁶

Tixier described the road as generally good, if incomplete, a subtle swipe at Veyrier’s stewardship. A massive stump some two feet in diameter created a hazard directly in the middle of the road, large termite hills alongside the road undercut the path and endangered drivers, and for lengthy sections the ditches that drained water from the road simply disappeared. The lack of a rock roadbed placed drivers at the mercy of the rains and seasonal soil fluctuations. Most of the road was composed of clayey lateritic soils, which were of sufficient density to support the weight of the automobile when dry but which became dangerously slippery when wet. The sections composed of sand and clay were “serious obstacles to the exploitation of the road,” as cars sunk in the sands during the dry season while the lateritic sections became “quagmires” in the rainy season. Tixier concluded that if the road were to ever serve automotive traffic, it would

have to be laid with a rock bed for its entire length. Without such improvement, both the automobiles and the road itself would deteriorate rapidly. Regardless, Tixier wrote, “the maintenance of the road will be quite expensive.” The tropical climate would require diligent, regular clearance of vegetation from the road, while the administration would also have to undertake ad hoc repairs to address landslides and rutting caused by heavy rains, as well as maintaining dozens of wooden bridges that deteriorated owing to traffic, weather, and termites.²⁷

Despite these critiques, with the completion of the road in sight, Tixier lingered on potential users of the road. He questioned the wisdom of teaching residents of the colony to operate handcars, both “because they are not very intelligent” and because the intense slopes of the French road would make pulling a cart just as taxing as portage, and significantly more dangerous. Although horses had been deployed in the construction of the road, they had been brought from Chad and were vulnerable to nagana, the animal form of trypanosomiasis endemic to Ubangi-Shari. And whereas the administration had great hopes for an automotive service, the fleet counted only three vehicles in 1913. The two Dion-Bouton automobiles suffered ruptured motor bearings, leading Tixier to diagnose a fatal defect in the model, while the third, a Panhard & Levassor truck, was stranded in the colonial capital of Bangui. Given the shortcomings of the road and the deficiencies of the vehicles, Tixier noted it was nearly impossible to evaluate the possible effects of an expanded automotive service or its cost, while still believing that “the automobile is the most reliable solution” to displace portage.

In short, Tixier recognized that the federation found itself at a crossroads. The French could build upon the automotive service and its road network, or, alternatively, could pour its efforts into railway construction. With the federation already planning to pursue the construction of a railroad in Middle Congo (the infamous Congo-Océan completed in 1934), the chief inspector in Brazzaville concluded that the construction of rails in Ubangi-Shari was a distant solution, implying that it would be a colony of automobiles.²⁸ The construction and inspection of the Shari Road demonstrated, however, that immense challenges remained to be solved: recruiting African laborers, overcoming tropical environments, and managing automotive empire with competent administrators and technical experts.

From Railway Imperialism to Automotive Empire in Latin Africa

If the French administration failed to integrate the discrete aspects of automotive empire when constructing the Shari Road, the situation changed after World War

I when officials explicitly linked social and ecological projects and positioned roads as a solution to the challenges of tropical governance and economic exploitation. European administrators and experts elaborated a shared narrative that linked mobility, infrastructure development, and the concomitant modernization of African lands and peoples. Charles Maitre-Devallon, that theorist of the “transport problem,” explicitly linked technical development with the civilizing mission in the interwar era. The French, he wrote, aimed to elevate their African subjects, but of course “moral progress presupposes, in my opinion, material progress. . . . Misery and savagery are often synonymous.” Only creating “a certain prosperity, a certain ease” would do the trick, and for the infrastructural evangelist Maitre-Devallon, “good communications of sufficient economy to admit native groups in the global economy” were the necessary solution.²⁹

The comprehensive challenge of creating material and moral progress led Europeans to theorize Africa’s perceived problems and their potential solutions on a macro scale. Colonial administrators cooperated with experts in agronomy, engineering, forestry, geography, public hygiene, and tropical medicine to produce totalizing frameworks for interwar development. This collaborative process highlighted a shared European faith in science and rational administration to guide African development.

European experts examined human-environment relations in particular. One Italian official framed Africa’s shortcomings as an insufficient ratio of production to space, calculated as output per square kilometer. This was a socio-ecological measure if ever there was one. Densely populated, highly industrialized Europe’s ratio was nearly nine times the global average, while Africa’s ratio was barely one-tenth the global average; in short, Africa’s ratio of production to space was 1.3 percent that of Europe.³⁰ Measured by the rubric of capitalist production, Africa came up short. Low population density exacerbated Africa’s challenges, according to these experts. For interwar commentators, “the inadequacy of the supply of labor to the demand” defined the history of Africa, fueling both the creation and preservation of slavery and European violence used to compel Africans to work during the colonial era.³¹ As analyzed by the historian Frederick Cooper, experts interpreted Africa “as space, not people, and certainly not as society.”³²

Remarkably, in a period of nationalist tensions and division, the challenges of African development created a consensus about what defined Europe.³³ For the German transport geographer Karl Krüger, the unifying feature of Western culture was “mastering nature with the machine through our knowledge and skill.”³⁴ European experts flattered themselves by equating technology and infrastructure with civilization and progress. They argued that Africans lacked basic material prosperity and security, while ignoring the role of European conquest and colonial rule in producing social tumult and material insecurity. The African

“problem” needed the European “solution,” and as stated in the *African Survey*, a prominent British report of the interwar era, colonial development, “whether from the point of view of the raising of native standards of life, or from that of European colonization, or again from the creation of raw material supplies, can only be solved if cheap transport facilities are first provided.”³⁵

European experts shared their diagnosis of Africa’s ills and the solution in the abstract, but their solutions diverged. Whereas the British preferred rails, in Latin Africa the interwar period saw a definitive turn to roads. Some critics dismissed railroads for economic reasons. On the eve of the war, commentators were already worrying about the difference in cost. In AOF in 1914, road construction was “ten times cheaper” and “twice as fast” as building railways; another author estimated colonial rail construction as somewhere between seven and twenty-eight times more expensive than roads, depending on the location of the project.³⁶ The French commissioner of the Cameroon Mandate, Théodore Marchand, encapsulated the antirail argument. As he wrote in 1927, “In tropical colonies where human *matériel* is extremely rare, where consequently agricultural development is fragmentary, there is a lack of proportion between the means brought to bear to create a railway and the economic results to be expected.” Constructing railways, the commissioner argued, was a gamble that required “risking the considerable investment of capital for railways of no guaranteed return.”³⁷

If the skepticism of colonial administrators restricted the demand for railroad construction between the wars, evaporating private investment choked off supply. The decades before World War I saw European investors and concessionary companies fund African railroads in anticipation of future profits, and they rapidly constructed railways from select inland resource basins to navigable rivers and ocean ports.³⁸ Railway construction slowed markedly after World War I, partially because the most lucrative and desirable routes had already been built. However, Europeans also soured on the prospects of making Africa into a railway empire, preferring targeted railway projects such as the 318-mile Congo-Océan, a line planned before World War I but delayed by the conflict.³⁹ By the interwar period, it had become clear that African railways, “however wise in the light of long-run considerations, cannot be expected to bring an early return to the private investor,” and thus “capital was less easily attracted.”⁴⁰ One French engineer described railways as a “difficult tool to wield” for colonial states, due to their long and costly development cycle and massive capital needs, the effects of which led builders to cut corners (sometimes literally, producing extreme slopes and narrow paths that endangered trains) and kept rail freight prices high.⁴¹ European debts accrued during the war—alongside metropolitan mandates that colonies pay their own way—made railways prohibitively expensive for colonial

administrations in most cases during the 1920s, while colonial states blanched at significant financial commitments in the 1930s as they grappled with the effects of the Great Depression.⁴²

The disadvantages of railways extended beyond their finances. French colonial officials came to believe that railways did not effectively emanate development. Félix Chautemps, the delegate for Guinea (AOF) on the Conseil Supérieur des Colonies, argued that “if life clusters, if transactions are stimulated, and if civilization installs itself in the immediate environs of the train stations, the lands left unserved by the rail remain, on the contrary, plunged in a lamentable social and economic lethargy.”⁴³ For Chautemps, railways fueled colonial inequality, leading to intense, localized development while allowing vast sectors of the colony to atrophy. They exacerbated the already stark divide between rich coastal areas of colonial development and their underdeveloped hinterlands. This imbalanced economic geography had provided the impetus to fuse various colonies into the federations of AOF and AEF in the decade before World War I, allowing the French to redistribute wealth inland in hopes that infrastructure development would integrate hinterlands into Atlantic-facing global economies.⁴⁴ It fell to the colonial state to plan these infrastructures and orchestrate the interactions among various parts of the colonial federations.⁴⁵ Increasingly, officials came to believe that railways both created and aggravated the territorial imbalances that defined Europe’s African colonies.

While colonial officials and private investors soured on African railways, roads and automobiles became more attractive. As automotive technology improved, colonial officials imagined that “the automobile, circulating on newly traced paths,” could legitimately “supplant the declining locomotive.”⁴⁶ Roads also fulfilled the demands of colonial administrators in ways that railways could not. Whereas railways largely moved personnel and goods in and out of the colony, roads were the infrastructure for moving people and commodities within the colony, making them vital to the civilizing mission. Further, for anxious colonial officials with their eyes on paltry budgets, roads appeared nearly costless, requiring no pay for workers (who could be recruited through the “sweat tax”) and little machinery. And because they were inexpensive to produce, colonial roads were “no object of speculation like railroad construction,” making them anchors of a stable, predictable colonial economy.⁴⁷ As interwar dreams of infrastructural transformation crashed into the hard realities of strained finances and flagging parliamentary support for colonial development projects, roads could provide *mise en valeur* on the cheap.⁴⁸ In the interwar era, roads were economical to build and created desirable territorial and political effects while stimulating economic development. In the ebullient words of one French commentator, “In equatorial Africa, the road is life! It is civilization that arrives across the forest, the swamps,

the impenetrable brush, the desiccated bleds [fields].” As a tool of administration, public health, and commerce, “the road is the opening to the light! The Colony without roads is a body without arteries: it is death.”⁴⁹ Although the colonial reality was never as stark as the binary framing of roads-versus-rails suggests, roads were clearly ascendant in the 1920s and 1930s as a fix for what Europeans (British policy excepted) perceived as Africa’s interconnected social and environmental challenges.

Road Construction as an Ecological Problem

The continental European consensus on the importance of roads to development and the civilizing mission in Africa—projects that became difficult to disentangle in interwar French colonies—meant that the shambolic process that produced the Shari Road before World War I would have to be professionalized. Rather than improvisational projects, the ideal road amalgamated the expertise of geologists, surveyors, economists, technicians, engineers, and bureaucrats.⁵⁰ Of course, this idealized vision presupposed infinite funding and sufficient scientific experts deployed across colonies many times the size of the metropole. The scarcity of European technicians and the poverty of European colonies meant that most roads built in interwar Africa continued to be designed by untrained local officials and built by African laborers coerced through *prestations*.

As a result, at the macro-level of the colonial administration, road construction left an uneven archival record. Pronouncements about how automotive empire would or should work are plentiful, but the documentation of specific projects in the colonial archive is spotty at best. Much of the documentation of roads occurred only *after* they were built, when administrators or public works officials undertook inspection tours known as *tournées*. The *tournee* reflects the European sense that roads were means to civilizing ends and that the finished products mattered more than the methods used to create them. *Tournée* reports illuminate European obsessions and blind spots, while revealing that their socio-ecological civilizing mission failed for both social and ecological reasons.

A 1933 inspection mission undertaken by the head engineer Verdun of AOF demonstrates the interdependence of the social and ecological aspects of road development. Verdun traveled for nearly four months from April to July, driving seventy-five hundred miles in a grand loop across Senegal, Soudan (Mali), Guinea, Côte d’Ivoire, Dahomey (Benin), Togo, and Niger (figure 6.3).⁵¹

Verdun encountered varied climates and terrain, from the sands of northern Senegal to humid, mountainous Guinea, and from the dense tropical forests of Côte d’Ivoire to the dry savannas of Soudan. A pamphlet touting the road

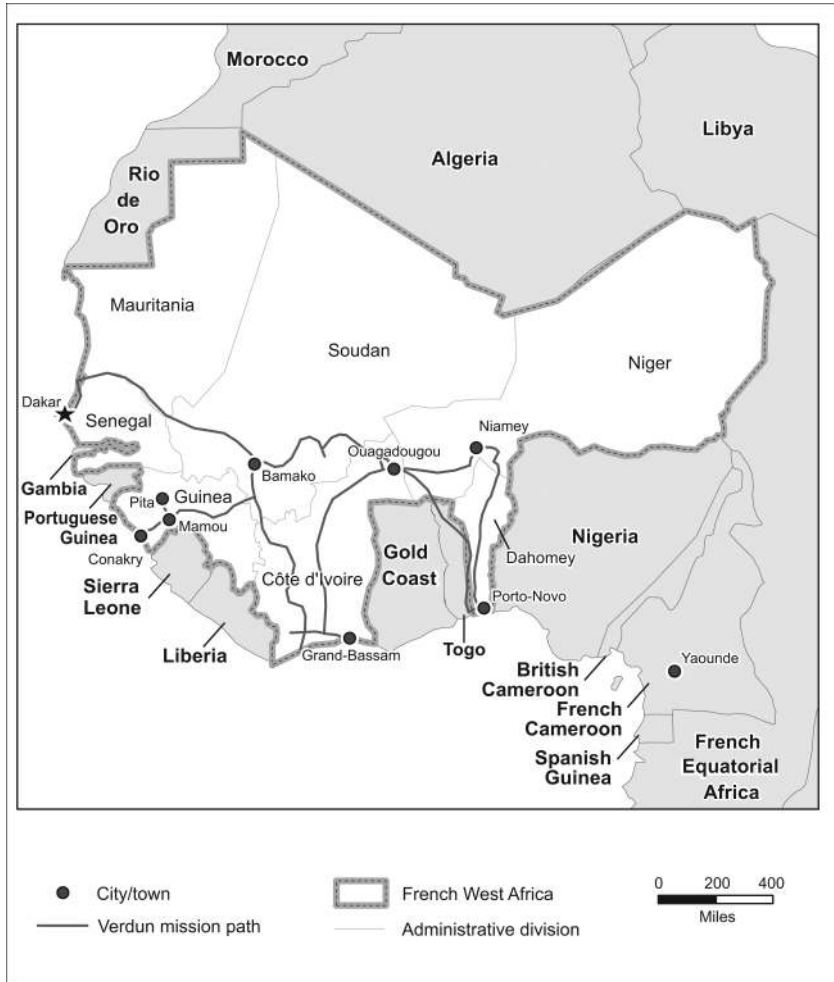


FIGURE 6.3. Verdun's inspection mission, 1933. Map by Di Shi.

network in AOF began by stating, "It is a fact: in 1914 the AOF road network was more or less nonexistent." By 1930 the French-manufactured network counted nearly 29,000 miles and would grow to 43,500 miles by the end of 1937.⁵² The rapid development of roads in AOF demonstrated the network's importance to French colonial efforts in the interwar period, but in 1930, less than 20 percent of the roads were "definitive," all-weather routes that could be used year-round. The remainder were pistes, subject to seasonal closures.⁵³ In the sprawling federation, eight times the size of France, some areas (the deserts of northern Soudan and Niger) saw little disruption outside a short, two-month rainy season, while in

others (most of Guinea, Côte d'Ivoire, and Dahomey), rainy seasons lasting four to six months or longer menaced roads.⁵⁴ Verdun thus traveled an evolving network. Significant work had been done, but new paths still had to be constructed, while seasonal pistes needed improvement.

Verdun spent much of his report ruminating on the relationship between the technical specifications of roads and the varied terrain and climates of AOF, a topic that prompted much discussion among European experts and administrators in the interwar era. Western road science had been developed in temperate Europe and North America. In tropical Africa, heat and moisture made road building and maintenance a thornier technical problem than in northern climes.⁵⁵ Colonial reports and published travel guides alike carefully charted seasonal rainfall.⁵⁶ Experts identified flowing water as "the greatest danger for a road in tropical Africa," and as a result, constructing proper drainage was the prime directive of tropical road development.⁵⁷

The desire to build technically sound roads revealed how meager colonial officials' knowledge of their jurisdictions remained. Whenever planning a new road, those officials stressed the need for "long and serious preliminary studies" that logged observations during the rainy season. In French Cameroon, administering the mountainous Adamawa region north of the capital of Yaoundé required the establishment of permanent roads. Seasonal torrential floods in the region would require longitudinal study across many years to understand where to place necessary bridgeworks. Lacking historical data and with no permanent engineers assigned to the northern region of the territory, French officials canvassed residents to undertake "a thorough inquiry on exceptional floods" before designing and building the roads.⁵⁸ For all the European claims to bring science and rationality to their colonies, their civilizing mission depended on the environmental knowledge and historical memory of their colonial subjects.

Various commentators and officials had proclaimed that colonial roads, as vectors of European modernity, would be worthless if Europeans merely widened porter paths and declared them roads.⁵⁹ The reality of constructing nearly thirty thousand miles of roads in just over a decade, however, militated against comprehensive redesign. Regardless of European pretensions of abandoning the African path, the reality was that precolonial African paths contained generations of social practice and environmental knowledge. Traffic, whether human or animal, tended "to follow the law of the least effort."⁶⁰ Thus, Verdun noted with some chagrin that given the lack of central funding and paucity of technical experts in AOF, the starting point of the colonial road was the porter path. This "more or less tortuous path had its *raison d'être*" and placed a premium on personal safety: from bandits, predators such as lions and leopards, and dangerous river crossings.⁶¹

European roadbuilders were caught in a bind. On the one hand, paths responded to the precolonial socio-ecological regime and did not accord with European visions of the modern, whether in their technical specifications or their political and economic principles. On the other hand, in AOF, as in most European colonies, road construction was overseen by local administrators (the *commandants de cercle* in French colonies) who were invariably stretched thin, serving as the sole European administrator of sprawling jurisdictions. With no budget for road development, the local commandant depended on *prestations*, while “the technical service is almost always absent.” As a result, rather than a network built to common standards, “the aggregate of the road network is very dissimilar: each *cercle*, having a conception of the road, uses different methods, varying equally with each change in command.” Although colonial public works officials elaborated common standards, the porter-path-cum-colonial-road varied widely in almost every detail: width; profile (i.e., laying of roadbed and sloping of the road to pull water to the roadside); existence of shoulders; roadside ditches; tightness of turns; maximum slopes; and marking of the road.⁶² European officials and experts defined their project as implementing modern standards and overcoming African environments with technological expertise, but rather than a smooth, standard network, the roads of AOF were inconsistent and disjunctive.

Nevertheless, Verdun perceived progress on his *tournée*. He described roads that benefited from the repeated layering of European expertise and African labor on porter paths, creating “successive improvements” that modernized the network “step by step.”⁶³ The automobile led the way. The danger posed to the automobile by steep, wet roads and tight turns demanded improvement. This implied that the colonial state would become an infrastructure state, oriented toward the repeated application of labor and expertise to the road network, allowing for its constant expansion, improvement, and maintenance. This was not the simple transfer of mechanical traction to the colonies to immediately install European standards of civilization, but instead a serious, ongoing program of construction, investment, and development. As Charles Maître-Devallon described it, this was not reducible to a single construction project or even the tenure of a single administrator, but an “immense” task of *generations*.⁶⁴

The ideal road responded to, and mastered, the challenges of African environments, making each section of road a unique challenge. In Guinea, mountainous terrain had long plagued French construction of roads. The colony’s development lagged the rest of AOF because whereas other colonies built upon existing paths, Guinea’s had to be planned from scratch and built to modern standards.⁶⁵ It thus required expensive and time-consuming technical input, but also embodied the ideal process of colonial road construction. Verdun lauded

the sixty-seven-mile Mamou–Pita road, which wove through mountainous terrain. Engineers kept slopes below 4 percent to minimize wear and tear on the vehicles and to ensure the driver's safety. The width held at a steady six meters to allow for two-way traffic. The roadbed itself was clear-cut and well defined, and road graders created a perfectly flat road that eliminated natural undulations. To minimize maintenance and improve drainage—a requirement given the heavy rains that pummeled the region for much of the year—the French built an elevated roadbed of stones and gravel that was then overlaid with lateritic soil to create a uniform natural surface. From a transverse perspective, the road had a slight parabolic shape to pull away water, and engineers built culverts underneath the road to channel water down the mountainside.⁶⁶ The perfect road was deceptively simple, echoing the natural features of the terrain whenever possible. Success demanded significant engineering expertise applied to increase speed and safety and to decrease the amount of work needed to maintain both the road and the vehicles that used it.

However ideal, the Mamou–Pita road was the exception, not the rule. Roads were often too steep, making them dangerous to descend and impossible to ascend when wet; but without access to explosives or steam shovels, local administrators were unable to reduce the slope. Constructing ditches and culverts remained beyond the expertise of most administrators, leading to pooling, flooding, and accelerated degradation of the roadway. This combination of varied roads and inept construction by French commandants required intensive maintenance. Verdun recommended that the federation cease construction of all new roads until his office could retrofit the existing paths to a uniform, modern standard. Their task was made more difficult by a lack of reliable information. Engineers across the empire lamented the patchwork state of French colonial maps and land surveys, which prevented them from making precise judgments from their offices in Dakar and Brazzaville. Instead, French experts either had to delegate authority to local officials or travel throughout the massive territories to assess projects in person, as Verdun did. When combined with the dearth of administrative manpower and financial shortfalls, French roadbuilding was usually local and reactive, rather than allowing planners to create long-term, forward-looking plans on a wider colonial scale. Overall, the haphazard road network led administrators to complain repeatedly about the waste of money, labor, and time.⁶⁷

Nevertheless, colonial officials convinced themselves that examples such as the Mamou–Pita road provided the model for the rest of AOF, if only administrative attention and metropolitan finances could be trained upon the roads. The region of Upper Volta (modern Burkina Faso) exemplified the promise of automotive empire, if properly pursued. On his inspection mission, Verdun elaborated a socio-ecological explanation for successful road development in Upper Volta. He

observed that areas with higher population density, such as the savanna zones that comprised Upper Volta, showed the most dramatic progress.⁶⁸ Of course, the savannas were also drier than the coastal tropics and flatter than the mountainous areas of Guinea and Cameroon that menaced road construction; the advance of automotive empire was determined by social and ecological factors alike.

The improvement of the automobile and the French commitment to creating the road network after World War I buoyed the fortunes of Upper Volta. As the French automotive adventurer Frédéric Loiseau wrote, "Upper Volta exists only thanks to the automobile; it is our colony in AOF that is the furthest from any railway or port," some four hundred miles from the port at Grand-Bassam, Côte d'Ivoire. The road network, with its "multitude of bridges" and "excellent" roads, led Loiseau to gush, "I am nearly always driving 100 kilometers per hour" and that the road network was "the glory of our colonial administration."⁶⁹ As a 1930 map of the network in Upper Volta illustrates, the French road network served the political needs of that administration by producing rational, direct connections out of imagined dead space (figure 6.4).

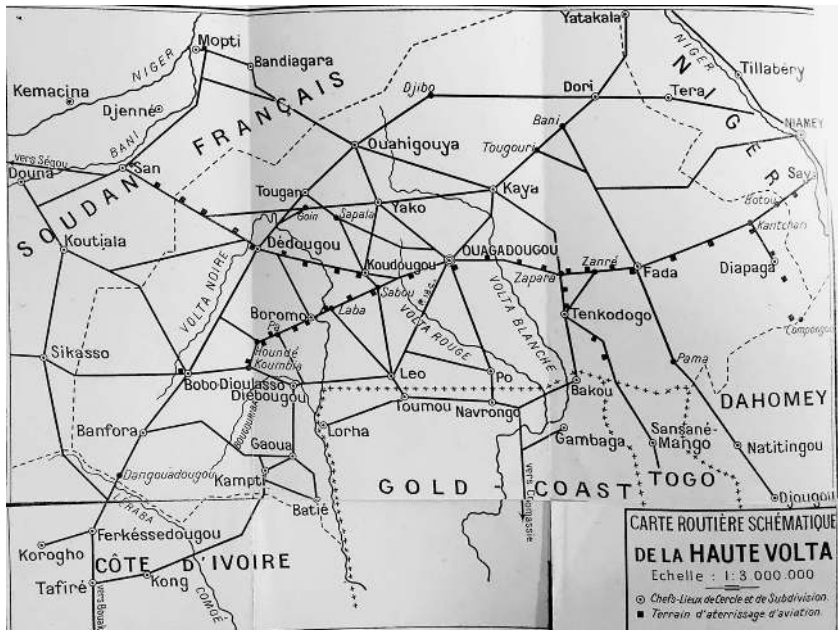


FIGURE 6.4. Schematic map of the Upper Volta (AOF) road network, 1930. Source: Archives Nationales d'Outre-Mer, Aix-en-Provence, France, BIB AOM B3271, *Guide routier comprenant nomenclature, classement et kilométrage des routes de la Haute-Volta, au 1^{er} janvier 1930. Carte routière. Code de la route. Renseignements divers* (Ouagadougou: Imprimerie du Gouvernement, 1930).

Although the actual roads were significantly more serpentine, the schematic map depicts a spiderweb of straight lines radiating out from the then-capital of Ouagadougou, an east–west axis cutting across the colony to connect it to Niger and Soudan, and an arcing road that links the agricultural riches of the inland colony to French ports in Côte d’Ivoire. For the purposes of colonial administration, roads segmented and rationalized space, reassuring administrators that their infrastructure had turned isolated regions into productive, networked zones.

Officials convinced themselves that this transformation of African space into colonial territory stimulated social and economic progress. In 1920s Senegal, Murid peanut farmers and Lebanese transport entrepreneurs increasingly settled along rural roadways.⁷⁰ A photo pasted into Verdun’s report, unremarked upon by the author, presents the idealized outcome of automotive empire in Upper Volta, and in the French empire more generally (figure 6.5).



FIGURE 6.5. A couple poses on the road in Upper Volta, 1933. Source: Archives Nationales d’Outre-Mer, Aix-en-Provence, France, 1TP/34/8, “Rapport de mission effectuée sur les routes de l’A.O.F. du 26 avril au 12 juillet 1933.”

The immaculately constructed road cuts a straight line through the landscape, with a flat, lateritic roadbed set off by stones to mark the edge. Trees line the rural road every eight to ten meters, just as in Europe. A well-dressed African couple, owners of a roadside kapok plantation, stand facing the photographer. The road connects hinterlands to African and European markets, allowing for the growth of specialized, commercial agriculture. The image implies that definitive French roads organize space to fulfill the socio-ecological civilizing mission. The plantations arrayed along the road allow for the mix of circulation and rooted settlement that Europeans of this era identified with civilization, while stimulating the development of an African middle class.

Roads and the Colonial Labor Problem

As a documentary genre, administrative reports such as Verdun's wove a panoptic narrative in which hundreds of discrete construction projects pursued over many years cohered into a network that organized the federation. Whatever the technical shortcomings of sections of the road, Verdun was impressed that this "substantial" work had been realized. He noted, cryptically, that the creation of the roads had been made possible by "a considerable human capital" that numbered millions of days of unpaid labor provided through the "sweat tax."⁷¹ The sparse documentation of such labor recruitments made them an "invisible" form of revenue that Verdun could only estimate, but what concerned him was the finished product.⁷² To calculate a work rate, we turn to the Congo, where Belgian officials conducted elaborate calculations to determine that each mile of road required eight thousand worker days to construct from beginning to end (including clearing the path, laying foundation, applying the road surface, and constructing bridgeworks, as necessary).⁷³ Of course, this figure would vary widely according to terrain and season, but if it were applied to only the seventy-five hundred miles of roads driven by engineer Verdun on his *tournée*, initial construction alone would have required a staggering sixty million worker days. Even if we reduce the estimate significantly to account for roads that were retrofitted and not built from scratch, or those built in the brush of the savannas rather than dense tropical forests, the labor demands were immense.

The French quickly learned that satisfying these demands was impossible in a free labor market. The civilizing mission, although presented as an uncomplicated, progressive program to bring French material and cultural achievements to their colonial subjects, required the French to compromise their stated values. Slavery had been outlawed in the French empire in both 1794 and 1848 in moments of revolutionary idealism, but colonial officials overlooked slave

trafficking and household slavery in their West African territories for decades. The French consolidated control over West Africa in the late nineteenth century, and in a decree of December 1905 officially abolished the slave trade.⁷⁴ It quickly became apparent that the government of AOF did not have the capacity to recruit voluntary workers to fulfill the demands of either public projects or private employers in the federation, impeding necessary economic valorization.⁷⁵ Although slavery had been outlawed, the French appropriated their subjects' labor through requisitions, leading to outcry from the metropolitan public and objections from the Ministry of Colonies. In response, the French created a work-around. In 1912, AOF's governor William Merlaud-Ponty, who had forcefully advocated for suppressing the slave trade in his previous role as chief administrator in Soudan, legalized *prestations*, requiring every able-bodied African man over the age of fifteen to provide twelve days of service annually on small-scale, local public works projects within a day's walk of his domicile.⁷⁶ Ponty identified a lack of infrastructure and labor as hindrances to his own, pre-World War I program of *mise en valeur* in Soudan, justifying the *prestations* across the entire federation. Without establishing a stable, cheap labor pool, Ponty recognized, the French would be unable to realize their civilizing mission. Guaranteeing cost-free labor would allow the French to build the infrastructures to overcome sprawling colonial territories and extreme African environments. *Prestations* explicitly linked West Africa's social and ecological problems and solutions.

In the interwar decades, the localized project of *mise en valeur* became an empire-wide obsession, and organizing *prestations* absorbed significant administrative attention. After World War I, when the government of AOF raised the minimum qualified age to eighteen, approximately 3.7 million men were liable for *prestations* out of a total population of 14 million.⁷⁷ The French assessed different rates in each colony, indexed to their level of economic development (and thus the colonial administration's ability to levy direct taxes and import duties). In 1926, annual levies required eight days of work for residents of more-developed Senegal, ten for Guinea, and twelve for less-developed Soudan and Mauritania.⁷⁸ The French also set legal limits for total number of days worked, length of work-days (eight hours), and working conditions (two hours of rest at midday, provision of food and water, maximum distance from one's domicile). Unlike taxes collected in cash or agricultural commodities, the "embodied" nature of labor taxes made them impossible to store up for future use or to allocate elsewhere, frustrating colonial authorities.⁷⁹ As a result, French administrators and their African agents frequently flouted legal guidelines. The prodigious recruitment of taxed labor and the lax regulation of the worksites were part of the larger French colonial legal order that used ostensible respect for African customary

law to justify abuse. Roads thus contributed significantly to what Gregory Mann describes as the “entrenched arbitrariness” of the colonial order.⁸⁰

Colonial road labor policies were paradoxical. On the one hand, this era coincided with intense scrutiny of forced labor practices by international institutions such as the International Labour Organization (ILO) of the League of Nations and nongovernmental organizations such as the Anti-Slavery Society. On the other hand, colonial states justified their rule partially through their project of economic valorization, which they connected directly to the replacement of “primitive” African economies with “modern” capitalist ones. As the historian Kwabena Akurang-Parry has written, capitalist exchange required roads, and roads required workers, facts that “enabled the colonial state to exploit forced labor while apparently championing free labor.”⁸¹

These years were the “golden age” of forced labor not only in AOF but more generally in the French empire and throughout Latin Africa.⁸² Indeed, in this era, as Susan Pedersen writes, European imperialism “was to justify itself through ‘development.’”⁸³ As a result, international regulations of forced labor multiplied, and the use of coerced labor on African roads increased simultaneously in these years. The September 1926 League of Nations Slavery Convention sought to abolish slavery globally, but the convention created an explicit carve-out for “compulsory or forced labor . . . exacted for public purposes.”⁸⁴ The French permitted the use of prisoners and military laborers to expand the labor pool in AOF, each of which group could be assigned beyond the ten-mile limit prescribed by *prestation* regulations.⁸⁵ June 1930’s Forced Labour Convention of the ILO condemned forced labor in private enterprises while also allowing for its continuation for public ends for an undefined transitional period. The French nevertheless refused to sign, deeming the restrictions too stringent.⁸⁶ They promulgated their own text in August 1930 to offer legal cover while allowing *prestations* to continue. French officials justified coerced road labor as the only available means to recruit the workers necessary to build roads, a project that represented the only imaginable way to advance their civilizing mission in Africa.

The French, along with other European powers, elaborated such justifications because they believed that no large-scale transportation system could be built and maintained in Africa without recourse to some form of coerced labor. Partially, this harked back to Africa’s low population density, which led French officials to opine, “The main obstacle to the extension of the road system lies in the inadequate supply of labor for all activities that require it.”⁸⁷ More specifically, however, with railways too expensive to construct in the interwar period, colonial powers described the African transport regime as a binary choice between portage and motor vehicles. Europeans deemed portage inhumane and backward. As the authors of a British report framed the issue, “whatever the strength

of arguments against the use of forced labor for public purposes,” if “portage was to be ended, roads must first be constructed, and they could not in every case be made without the use of forced labor.”⁸⁸ The interrelationship of the labor question and the transport question formed the Gordian knot of African colonialism in the interwar period.

French officials therefore viewed their dependence on forced labor an unfortunate irony but a nonetheless justifiable remedy because it would eliminate portage obligations, which the French described as “the most feared burden” of their colonial subjects.⁸⁹ Road construction, in this framework, would be the final, but most necessary, form of forced labor that would set Africa on the path to modernity. In his report on Guinea before World War I, delegate Félix Chautemps wrote that without motor vehicles on French-built roads, “the native vegetates and shies away from the benefits of a civilization that he glimpses poorly through the brush where he hides to escape the portage *corvée*.” Only drivable roads could make this “antihuman, antieconomical, antipolitical” practice disappear.⁹⁰ French administrators in AEF noted that residents of their jurisdictions willingly provided taxed labor in the early 1920s when it appeared that roads would reduce portage obligations. But once the cruelty of conditions on colonial roadbuilding projects became apparent, the French found their subjects less willing to report.⁹¹

Europeans considered roads preferable to portage for humanitarian reasons, but the economics of portage cemented their opinion. Experts across Europe studied the cost and labor requirements of portage. One French trade publication offered general guidelines, declaring that porters should not carry more than 25 kilograms (55 pounds) or travel more than 25 kilometers (15.5 miles) in a day. By this calculation, 258 “porter days” would be required to move one ton of goods 100 miles. The entire portage regime, the author declared, was “difficult to organize, onerous, and slow.”⁹² The greater speed of a motor vehicle meant that for moving one ton of goods, one hour driving in a truck replaced four hundred porter hours *per kilometer*. Not only would this move more freight, faster, but it would free up innumerable laborers to work in agricultural and mining industries in a beneficent economic cycle.⁹³ According to one French commentator, replacing portage in Côte d’Ivoire would liberate “considerable manual labor . . . in a country where it is often already far too rare.”⁹⁴

Thus, ending portage would advance the civilizing mission on multiple fronts. It would eliminate a practice deemed primitive, while transforming wasted toil of porters into productive labor. Colonial officials believed that this would edify individual Africans while creating the material foundations upon which moral development depended.

By replacing the portage regime with a motorized one, automotive empire would be a panacea for Africa’s perceived ills. Little wonder that European

administrators went to great lengths and justified both isolated atrocities and systemic cruelty to realize its promise. Yan Slobodkin has shown how violence was at once legally forbidden and omnipresent in interwar AOF, describing assertions of brute force as “necessary to maintain the dominance of a weak colonial state.”⁹⁵ Given the omnipresence of road construction projects and their imagined importance to the interwar civilizing mission, mustering road laborers through *prestations* provoked significant violence. Once workers decided that building roads was no better than serving as porters, the colonial state had little beyond violence to compel Africans to work. As J. P. Daughton has argued of interwar AEF, functionally there was no colonial state outside of cities and towns that served as seats of colonial power; there was only localized despotism and disorder.⁹⁶ Where colonial economies were less developed, as in the hinterlands of AOF and AEF, the state depended on labor taxes, and “the colonial government’s desperate scramble for revenue made it resort to outright repression.”⁹⁷ And finally, with the French government fending off international oversight through the ILO with work-arounds and obfuscations, the *commandants de cercle* responsible for recruiting laborers to construct and maintain roads quickly discerned the underlying logic of automotive empire. According to Frederick Cooper, “the Commandant de cercle understood that if roads were bad he would not be promoted, but if prestatory labor were abused, no one would know the difference.”⁹⁸

The importance of roads to the interwar colonial project thus made them central to the formation of colonial politics, inventing, cementing, and reasserting the relations between colonial subjects and the state.⁹⁹ As the historian Erdmute Alber has argued, road construction imposed on the entirety of colonial society the costs of automotive empire, which in a federation like AOF benefited only a few thousand administrators, European businessmen, and African elites.¹⁰⁰ Automotive empire not only constructed the material infrastructure that undergirded the colonial project, but by laying claim to African labor and appropriating millions of bodies for tens of millions of working days annually, also oriented colonial societies to its needs. As sites of violence and coercion, deemed necessary by European officials to develop colonial economies and deliver the material and cultural benefits of their civilization to the African interior, roads were the colonial landscape par excellence.¹⁰¹

New Spaces, New Societies

The thick forests of AOF and AEF appeared impenetrable to the French colonial administrations and European enterprises alike. As Christopher Gray has written of colonial Gabon, the tropical forest “presented an acute challenge to the

appropriating gaze” of Europeans, “who sought to bring order to its perceived chaos.”¹⁰² Europeans built roads to tame the forests, but these vectors of colonial power required constant vigilance. When André Gide traveled through AEF in 1926–27 he observed, “as soon as a road is not maintained, the vegetation that overruns it makes it nearly impassable.”¹⁰³ Upon taking possession of Cameroon from Germany after World War I, the French found that the war effort had prevented the Germans from maintaining the roads, which deteriorated to such a point that they required not maintenance but “complete reconstruction.”¹⁰⁴ Europeans constructed roads to overcome the oppressive “jungle” in equatorial Africa, but as the historian Jan Vansina notes, this image of the “green wall” was in fact *produced* by roads. Because roadbuilders cleared strips of the forest canopy and removed groundcover, the intense tropical sun reached the forest floor, allowing for the rapid growth of “a riot of groundcover.” Had they ventured away from the road, Europeans would have found that this “green wall” was a European creation, extending perhaps ten feet off the road, before encountering “sparse groundcover” where “people circulate more easily.”¹⁰⁵ Automotive empire created the very problems—impenetrable environments, illegible societies—it sought to solve.

As the embodiment of the colonial socio-ecological project, the road demanded not only Africans’ labor but also the transformation of African societies to accord with the colonial vision of modernity. Wide roads scything through forests and marshes, savannas and deserts, sought to homogenize African spaces and render them (and their residents) governable. Colonial officials quickly connected the idealized territorial effects of roads with their demands for a large labor pool to construct and maintain them. For all their valorization of mobility, Europeans had long associated civilization with settlement, and as Tony Ballantyne has shown, a key task of modern empire was to “fix” colonial subjects to the land and transform them into “sedentary agriculturists.”¹⁰⁶ Of course, this was the stated goal of eliminating portage, which created large, itinerant populations that Europeans found difficult to govern and tax. In the interwar era, the development of colonial ports and cities spurred migration from the hinterlands, leading to a European obsession with African “deracination” and the need to reverse rural flight.¹⁰⁷ Roads were to be both the site of environmental control and anchors of rural social transformation.

Simply constructing roads did not suffice to “civilize” Africa. As Charles Maitre-Devallon declared, a finished road was merely the first stage of a process that had to be extended with “an action of ‘colonization’” that installed African communities alongside the road. Such settlements would transform seemingly invisible, mobile communities into settled societies legible to the colonial state. Europeans, Maitre-Devallon argued, must induce African communities to

relocate along newly built roads “without violence, but with tenacious persuasion.” The Frenchman and his colleagues were convinced that colonial subjects “dispersed in the brush or the forest” would relocate willingly. Colonial officials believed that Africans already moved frequently and thus had little emotional or economic attachment to the land. Maître-Devallon encapsulated the colonial project plainly: “Tropical Africa is to be reconstructed nearly entirely from a human point of view and one must not hesitate before this task.”¹⁰⁸ Colonial roads would be the axes of a new, modern African society, rationally organized by European planners and experts.

Roads had historically responded to population geography and the location of existing settlements, which formed a “magnetic field in which all lines of communication orient themselves.”¹⁰⁹ Colonial powers in interwar Africa sought to reverse this process. Having decided that African society simply did not exist, Europeans built roads that would serve as the “magnetic field” for a modernized African economy and society. In interwar Cameroon, French officials noted their difficulty recruiting laborers to work the Bertoua Road, the responsibility for which had been assigned to the residents of nearby hamlets. The official responsible for the region noted that in the future, villages would need to be relocated to the road, but confidently asserted that the natural gravity of the road was such that they would choose to move there anyhow. Indeed, the official lauded the initiative of the residents of the village of Borongo (population 515), who had “spontaneously” established a new village, Dipo. The official reported that brushfires set to clear vegetation reached the roadside, indicating that the residents of the region were already beginning to develop agricultural plantations in accordance with the French vision.¹¹⁰ When these plantations did develop, they were more often owned by European businessmen than African planters. In Côte d’Ivoire, French settlers owned roadside plantations and demanded that the state extend the road network to suit their needs.¹¹¹

Elective relocations such as the creation of Dipo in Cameroon were the exception rather than the rule. Africans rightly saw the roads as sites of control and surveillance. Throughout their tropical territories, the French forcibly relocated communities to make labor recruitment easier and more reliable. In Côte d’Ivoire, the French moved Idoo people from their traditional settlements on the Nzo River, where they possessed customary land rights and had developed a highly specialized ecological and social niche fishing in the river, to an upland location along the road between Guiglo and Taï, where they were forced to perform construction and maintenance tasks while cultivating coffee as a cash crop.¹¹² With a paternalist notion of what was best for the Idoo, the French resettled hundreds of men, women, and children with no regard for local ecologies or Idoo society. In the Congo, the Belgians similarly resettled entire communities to

ease recruitment for road construction and maintenance.¹¹³ In the process, they created new hierarchies of movement. Belgian administrators and businessmen were hyper-mobile, traveling widely on newly built roads, whereas Congolese found themselves first resettled along the new roads (sometimes forced to move multiple times as the planned path changed), then had their movements increasingly restricted.¹¹⁴

The labor requisitions and forced resettlements undertaken in service of the colonial road, as axis of the European civilizing project, made it into a site of coercion and fear. The violence of this process and the opacity of the panoptic socio-ecological project to African peoples made roads and motor vehicles the subject of myths and legends. As Luise White has shown in interwar British East Africa, the use of windowless vans running on red fuel in public health campaigns that involved drawing blood and administering vaccines gave the impression that the vehicles and their drivers were vampires.¹¹⁵ In AOF, the Ohori of Dahomey rightly perceived road projects as threats to their independence and came to equate colonial roadwork, often done by press gangs, with slavery. In response, many simply refused to report to the road site.¹¹⁶ The social and economic disruption of road construction created famine in interwar Gabon, as men dug ditches and removed roots from road sites rather than tending crops.¹¹⁷ And in Ubangi-Shari, the refusal of Bofi communities to relocate their settlement to the roadside led a French official to deputize his African sergeant to terrorize them.¹¹⁸ The French put so much stock in the transformative, civilizing potential of roads that they justified all manner of barbarity in pursuit of progress.

Unsurprisingly, African peoples responded to the projects of labor recruitment and forced resettlement with weapons of the weak. Wherever the *prestations* regime was in effect, district officials lamented the “extensive exodus” of workers. In many districts in interwar French Madagascar, 50 percent of registered residents required to perform *prestations* could not be located, having migrated to the cities, found other work, or simply fled.¹¹⁹ At the very moment that colonial officials determined that the hinterlands needed roads and thus a reliable labor pool for construction and maintenance, they found persistent rural flight and abandoned villages, often in direct response to the despotism that built automotive empire. Although those officials could have ameliorated working conditions and compensated laborers, they instead became *more* abusive in their quest. Across the continent, France’s African subjects took advantage of weak colonial states and porous territorial boundaries to simply flee their tax obligations. In equatorial Africa, rural populations moved freely between French Middle Congo, Belgian Congo, and Portuguese Angola to evade road recruitment, returning to their home villages after colonial officials had moved on.¹²⁰ Similarly, in AOF, labor taxes and forced relocations led residents of Upper Volta

and Côte d'Ivoire to flee to the British Gold Coast (Ghana), where indirect taxation and a comparative lack of roads created fewer odious obligations to the colonial state.¹²¹ In French Africa, the comprehensive pursuit of automotive empire and the unswerving commitment to building roads using taxed labor created misery and disorder. The French created a colonial state in which seemingly every aspect of colonial policy—taxation, settlement, legal codes, economic development—revolved around roads.

With a better understanding of the nature of road construction, Verdun's *tournee* can be viewed in a different light, particularly his casual estimate that the roads had absorbed "millions" of days of African labor. In weaving a narrative about the road network in AOF, Verdun left much unsaid because of a lack of documentation, indifference, and outright obfuscation. His ninety-three-page written report says next to nothing about labor. Verdun and others complained that public works expertise was routinely ignored by the *commandants de cercle*, leading to "wasted" African labor, a shame because it was cost-free. More technical input, he argued, would transform the road regime from reactive repair to proactive planning, leading to "a more rational utilization of manpower."¹²² When Verdun advocated for improved working conditions, it was only in the interest of producing better roads. In an echo of Frederick Cooper's observation that colonial officials considered Africa "space" and not a "society," African subjects were not discrete individuals but abstract "manpower." As Verdun suggested, only a rational alignment of socio-ecological principles—that is, labor recruitment and road engineering—would allow the French to enact their civilizing mission.

But Verdun's report was more than the dry written appraisals of an engineer. It was also a photo album: some sixty images embellish the margins of the report. We have already seen one of these pictures, depicting the kapok planters of Upper Volta. Although little is written about the work performed by France's colonial subjects, photographs of African laborers, juxtaposed with images of immaculate finished roads, presented readers in Dakar and Paris with a clear socio-ecological narrative: French will and expertise organized African workers to transform forbidding African environments through modern roads. But a close examination of photographs of African workers in AOF, coupled with knowledge of the coercion and violence that so often delivered them to road worksites, tells a different story.

Roadwork was grueling. In the interwar era, because any mechanical tools such as road graders or steamrollers would have to be purchased using the paltry tax revenues of the colony, most road construction and maintenance was done by hand. Photographs of the construction of the Sassandra Road in Côte d'Ivoire show men using shovels to move earth and dig ditches along the roadside. The

same page depicts road construction in Dahomey, 750 miles to the east and separated by the French mandate of Togo and the British Gold Coast colony, effacing the environmental and sociocultural differences between the two French colonies. Instead, they are unified by the French project of automotive empire, with men in Dahomey carrying large baskets of soil on their heads, pouring it on the road, and then spreading the soil and compacting it using long metal tampers (figure 6.6).

Images of punishing manual labor demonstrate not only the scale of the French undertaking in a federation many times the size of France but also the role of road labor as a tool of politics and discipline. Verdun's comments on the laborers betray no appreciation for their work. Instead, he offers only short asides, complaining that "the native does not know how to shovel." Verdun lamented that the general quality of forced labor was "far from being brilliant."¹²³



FIGURE 6.6. Road construction in Dahomey, 1933. Source: Archives Nationales d'Outre-Mer, Aix-en-Provence, France, 1TP/34/8, "Rapport de mission effectuée sur les routes de l'A.O.F. du 26 avril au 12 juillet 1933."

Central to Verdun's complaints was the fact that many of the workers were old men, women, and children. Although able-bodied men of working age were subject to the French tax, the tax levy simply counted heads, and the laborers who arrived at the worksites were not necessarily those subject to the tax. Indigenous chiefs who mustered laborers to fill quotas often targeted women and children, who lacked social capital and whose labor they deemed less valuable. As a result, the burdens of performing "civilizing" labor fell to the most vulnerable residents of the colonies, and the labor tax was a prime example of both the "entrenched arbitrariness" of French rule and how the French violated international labor regulations in the interwar period.¹²⁴ In Ouagadougou, Upper Volta (absorbed administratively into Côte d'Ivoire in 1932), Verdun described the construction of a road, lauding its technical qualities and the organization of the labor on site, where four teams of fifty men each built ditches and moved rock, earning two francs daily. But a photograph reveals that they were complemented by teams of women, bent at the waist, who spread lateritic soil over the surface and tamped it down using paddles (figure 6.7). Verdun, obviously aware of colonial and international labor regulations, took pains to note that this was the only place where women conducted such work. Later, Verdun blamed women for creating a roadbed that was not entirely homogeneous, allowing the dry, hot climate to pull apart the laterite, which the wind blew away, requiring significant, ongoing maintenance.¹²⁵

In AEF in the previous decade, André Gide chronicled similar abuses, writing of his horror when in Ubangi-Shari "we came across a group of women in the process of repairing the road. . . . These poor cattle were dripping with sweat in the downpour. Many among them nursed [babies] while working." In violation of regulations, the women were stationed too far from their homes to return at night. They stayed in makeshift huts that did little to protect them from the elements, and Gide learned that "the soldier who oversees them had made them work all night to repair the damage from a recent storm and to enable our passage."¹²⁶

Such stories survive in the historical record only in anecdotes and glimpses. But make no mistake: workers across Africa built automotive empire using their bare hands and simple tools, laboring for billions of days in the heat and the rain (recall a continental road network of 350,000 miles and an estimate of eight thousand worker-days to construct one mile of road) to create colonial development on the cheap. Finished African roads, most of which were earthen in the interwar period, were deceptively simple, and photographs of immaculate African roads obscure the toil and misery that produced them.

The cruelty of colonial road labor was not an unfortunate accident or tangential to the project of colonial development. It was the point. Recognizing this



FIGURE 6.7. Women flattening the road surface by hand near Ouagadougou, 1933. Source: Archives Nationales d’Outre-Mer, Aix-en-Provence, France, 1TP/34/8, “Rapport de mission effectuée sur les routes de l’A.O.F. du 26 avril au 12 juillet 1933.”

fact frames photographs such as one taken along the prized Mamou–Pita road in Guinea on Verdun’s inspection tour in a different light (figure 6.8).

In it, a French member of the *tournée*, perhaps Verdun himself, stands in khakis and a white short-sleeve shirt, with one hand in his pocket, a cigarette jutting insouciantly from his lip and his face shrouded in shadow by the ubiquitous pith helmet of the colonial official. He stands at the edge of the road, which extends, straight as an arrow, into the distance behind him. The photo’s caption lauds this “definitive” road constructed according to “technical methods.”¹²⁷ To realize such roads, colonial states constructed a barbarous regime in the name of civilization.

The French were obviously willing to use deplorable means to pursue civilizing ends. What kind of automotive empire did they create? Roads, of course, serve users, and the ideal colonial user was the motorist. The interwar state constructed roads, but French automotive empire was a bust. Turning our attention back to



FIGURE 6.8. A French official poses by the road in West Africa, 1933. Source: Archives Nationales d’Outre-Mer, Aix-en-Provence, France, 1TP/34/8, “Rapport de mission effectuée sur les routes de l’A.O.F. du 26 avril au 12 juillet 1933.”

AEF, we encounter an automotive division beset by “chronic financial difficulties” and shortages of matériel and personnel alike. In 1929, the automotive service in AEF counted nineteen trucks and four automobiles of varied make and model, many of which were out of commission for want of spare parts. Seven of the nineteen trucks were Panhards, which a colonial inspector deemed useless because their low ground clearance made it impossible to ford rivers. Rather than improving administrative efficiency, the automotive service ferried workers to construct the Congo-Océan railroad in Mayombe, transported fuel and parts for the automotive division itself, and delivered colonial officials across the federation to summon road workers. The persistence of poor roads meant that in the rainy season workers walked and porters carried gasoline and spare parts deep into the interior.¹²⁸ The automotive service existed only to sustain and perpetuate itself, and most of the actions undertaken by the automotive division merely maintained the status quo. They certainly did not transform the federation as proponents of automotive empire claimed.

The motor service in AEF not only failed to advance colonial goals but was marred by corruption and waste. Governor-General Raphaël Antonetti castigated Chad's lieutenant governor, Marcel de Coppet, for the "unbelievable disorder" of the colony's automotive service, which ignored the basic rules of bookkeeping. Antonetti was apoplectic: two thousand liters of gasoline had simply gone missing; Coppet persistently underestimated the cost of drivers, fuel, and oil; and the lieutenant governor did not budget for inevitable breakdowns, repairs, and accidents. As a result, the automotive service ran up a deficit of one million francs in only six years. Coppet, desperate for a quick fix, informed Antonetti that gasified charcoal would solve the financial problems, which Antonetti derided as "in the realm of pure fantasy. First, there is not much wood in Chad, then this wood needs to be cut, transported, transformed into charcoal. . . . So all this will be done for free?"¹²⁹ Both Coppet and Antonetti were desperate to see the promise of automotive empire fulfilled. The former cooked the books to make the automotive service appear effective, while the latter thundered at his subordinate's failure to harness the advantages of cars and roads.

Automotive empire dramatically transformed African colonies in the interwar era, but not in the manner its champions expected. French colonial officials preferred roads and vehicles over railways because the former were "better adapted to the needs of our colonies." Railways required trained technicians, significant capital, and "a complicated organization," which African territories, viewed with metropolitan "indifference" and accorded "meager resources," simply could not bear. Roads "compensated for these deficiencies," fundamentally, by being cheap.¹³⁰ Automotive empire became the infrastructure of *mise en valeur* and the civilizing mission not because European empires were strong, but because they were poor and weak. Colonial states were powerful enough to disrupt African societies and ecologies in the pursuit of automotive empire but not committed enough in terms of finances, manpower, and attention to see the project through. As the following chapters will show, a Latin African empire that *was* willing to commit to automotive empire, but without any pretensions of a humanitarian civilizing mission, brought the model to its climax.

THE ITALIAN MODEL

Violence, Warfare, Propaganda

The previous chapter showed how roads were sites of mundane, chronic violence visited upon African workers. But the symbolism of the road occasionally made the African road the target of spectacular, acute violence. In the early hours of February 13, 1936, amid the war between Italy and Ethiopia that had begun the previous October when Italian troops invaded from their East African colony of Eritrea, a detachment of Italian soldiers responded to a distress call. Troops rushed to the roadbuilders' labor camp of the Italian transport firm Gondrand outside Mai Lala (now Rama), Ethiopia. The camp was far from the battlefield, in a zone thought to be controlled by Italian troops. Captain Baldassare Damiani described his arrival at the camp, where "the signs of pillage and destruction were manifest." As Damiani navigated around mortally wounded Italian laborers and white-collar employees, he arrived at the barracks where the head engineers of the camp, Roberto di Colloredo Mels and Cesare Rocca, as well as Rocca's wife, Lidia, resided. Damiani described a grisly scene and grimly observed that his countrymen had died fighting.¹ The following month, the director of Gondrand's Eritrean office reported that seventy-six Italians died and four were missing and presumed dead.² What came to be known as the Mai Lala massacre was calculated to wound the Italians both materially and symbolically. The Ethiopian attack inspired terror among Italian workers, crippling construction operations in the frontier district for a time. Road laborers feared for their safety, and foremen complained of their "consequent negligence."³

In a colonial war marked by Italian atrocities—including the illegal deployment of mustard gas, massacres, and the creation of concentration camps, which

together killed over three hundred thousand Ethiopian civilians—the deaths at the Gondrand road labor camp afforded the Fascist regime an opportunity to justify its war of colonial aggression in the court of international opinion.⁴ On March 9, 1936, Italian representatives at the League of Nations filed a report on “Abyssinian Atrocities.”⁵ The Italians had blatantly flouted the authority of the League of Nations by invading Ethiopia, a fellow member. But the Fascist regime seized on the surprise attack to frame its war of aggression as a battle against barbarism. Roads were central to this claim, as Italian officials described the heroic sacrifices of humble Italian laborers to bring civilizing roads to East Africa.

The Italian protest in Geneva affected a solemn tone, with a note stating that “the Italian Government very much regret that they should be obliged to make public such revolting documents,” which, “however, give the measure of Abyssinian barbarity.” The short report described an attack by some six hundred Ethiopian soldiers that left the camp “overwhelmed, pillaged, and destroyed.” The Italians admitted that war was brutal, but characterized the attack as plainly “*not one of military operations*” (emphasis in original). Instead, the Italians described a case “of savage and bloodthirsty aggression against noncombatant workmen.” In contrast to the hundreds of thousands of nameless Ethiopian civilians who fell victim to Italian aggression, the report memorialized Italian victims by name, listing their place of birth and parentage. It went on to denounce not only the killing of the Italian workers but the use of exploding dum dum bullets, outlawed by the 1899 Hague Convention, and “bestial attacks on wounded men and corpses,” including castration and evisceration. The Italians curated and published twenty-seven photographs documenting gruesome injuries inflicted upon Italian workers. “Even workmen engaged on work of benefit to the community” suffered “a series of systematic and barbarous crimes which not only arouse irrepressible horror, but bear witness to the uncivilized condition of Ethiopia.”⁶ The Italians referenced the incident as post facto legitimization of their invasion and to justify their own war crimes.

But the massacre’s occurrence at a road construction yard was far from incidental. It reveals the motor of the Italian war effort and capped dramatic road projects in Italy’s colonies of Libya, Eritrea, and Somalia. The Italian model of automotive empire shared much with that of the French, with whom many Italian officials and commentators felt a cultural and ethnic kinship and whose longer-lasting modern empire the Italians sought to emulate. Within this self-proclaimed “Latin” framework (*latinità*), Italian officials claimed a common imperial heritage centered on the Mediterranean, stretching from ancient Rome to the twentieth century.⁷ Italy shared with France a doctrine of state-directed colonial development, a preference for roads and motor vehicles over railways, a strong automotive industry (led by Fiat, but including Alfa Romeo and Lancia),

and a metropolitan interest in the spectacle of colonial automobility. As we will see, these factors led the Italians to develop colonial road projects that appeared quite like contemporary French ones, fitting Italy within the framework of Latin Africa.

While sharing a family resemblance, Fascism distinguished Italian automotive empire from the French iteration. Upon Benito Mussolini's taking power in 1922, the colonial policy of his Fascist regime was ill-defined.⁸ In the first decade of Fascist rule, any changes from the previous era of colonialism, marked by paltry private investment and described by some historians as a "ragamuffin" or "beggar's" empire (*impero straccione*), were relatively minor.⁹ But when Mussolini turned to colonial development and imperial expansion in the 1930s to woo domestic audiences and overawe international ones, automotive empire held great appeal.¹⁰ The Fascists had already used the construction of metropolitan highways (*autostrade*) to build support for the regime in the 1920s, bolstering the party's claim as modernizers who initiated a new era of Italian glory.¹¹ In Africa, like the French, they connected roads and civilization. But the Italians did so only to position themselves as the rightful heirs to the Roman Empire. To the Fascists, roads were an emblem of *European* civilization and proof of Italian greatness, not a tool meant to catalyze a civilizing process that would improve the lives of their African subjects. Thus, although the Italians elaborated on a common model of automotive empire, they were far from derivative. The Fascists made many of the subtexts of automotive empire—technophilia, propaganda, dominance, violence—unapologetic and explicit.

The Shape of Italian Colonialism

Italy, unified only in 1870, was a relative latecomer, first as a Western European nation-state, then as an imperial power. As a response to chronic poverty and population pressures, thirteen million Italians emigrated between 1880 and 1915, the vast majority to the United States and Argentina. A significant number (some 170,000 by 1911) crossed the Mediterranean to settle in North Africa, with sizable communities in Tunisia, Egypt, and Algeria. When Francesco Crispi became prime minister in 1887, he pitched colonialism to address the problems that fueled the Italian exodus.¹² Like Germany, Italy arrived late to the colonial game, with the sense that the promising territories had already been claimed, particularly in North Africa, which the Italians imagined as their natural sphere of influence. Nevertheless, Italy was determined to emulate Britain and France by creating an empire. Italy claimed Eritrea (occupied the ports of Assab in 1882 and Massawa in 1885, colony proclaimed in 1890) and Somaliland (1889) before

suffering a stunning military defeat to Ethiopia in 1896. In the following years, Italy industrialized rapidly, and its colonial lobby strengthened, such that in 1911, the Italian government seized the opportunity to claim territory from the Ottoman Empire, the “sick man of Europe,” in North Africa.¹³ The war in what is now Libya rapidly devolved to atrocity and reprisal on both sides and ended in 1912 with Italian possession of the provinces of Tripolitania and Cyrenaica as separate colonies (figure 7.1).¹⁴



FIGURE 7.1. Libya, 1937. Map by Di Shi.

Unlike the geographically distant and economically burdensome East African colonies, Tripolitania and Cyrenaica were promoted by colonial boosters as the peninsula's "fourth shore": an integral part of Italy that would absorb settlers. Nevertheless, the contiguity of Tripolitania and Cyrenaica betrayed their administrative separation and division by the Sirte Desert. The Saharan province of Fezzan, the Italian neighbor to Algeria's Southern Territories and known in Italy as "the Siberia of the sun," remained restive for decades.¹⁵ Plans to develop Italy's North African territories were spotty and underfunded, as evidenced by the inadequacy of road infrastructure. Italian officials mocked Ottoman efforts, claiming that there were "no roads worthy of the name" because "roads in the proper sense had no reason to exist in these semi-savage regions."¹⁶ The Italians lamented the fact that the separate administration of the two territories from Tripoli and Benghazi prevented coordinated infrastructure development.¹⁷ After 1911, given the low population of the colonies and the geographical distance between settlements, Italian officials focused on adapting existing caravan paths and laying rock foundations to create a network of pistes around Tripoli and Benghazi.¹⁸

Following the Fascist accession to power after the March on Rome in October 1922, the Italians accelerated their roadbuilding efforts in North Africa. The Fascist regime developed a program for the construction of gravel roads in Tripolitania to connect Tripoli to key locations along the coast. From 1922 to 1929, Italy spent nearly five times as much on road construction as it had between 1911 and 1922.¹⁹ Nevertheless, like the French in the Sahara, the Italians recognized that sporadic traffic and budget limitations made dirt paths preferable wherever conditions allowed. According to one colonial official, Tripolitania and Cyrenaica offered large expanses of land that provided a solid base for all-season pistes, allowing the Italians to create a network that "would greatly facilitate the circulation of the entire colony" with minimal investment.²⁰ Artificial road surfacing was to be reserved for areas "of the greatest importance" where dedicated automotive traffic could be assured, mostly in urban settings.²¹

Road construction took off from 1930 when colonial officials connected infrastructure development with the suppression of the Senussi, a politico-religious order that opposed European colonialism in North Africa. After defeating the Ottomans in 1912, the Italians sought to crush the anticolonial Senussi for the next two decades. The Fascist regime redoubled efforts in the mid-1920s to strengthen Italy's still-tenuous hold on power in the colonies during and immediately following the war.²² The Fascists framed the struggle as the *riconquista* of Libya, an explicit reference to the centuries-long effort by Christian kingdoms to expel Muslim rulers from the Iberian Peninsula in the Middle Ages. The so-called pacification of Italy's North African possessions was a brutal campaign.

The mobility of the Senussi and their ability to take refuge among civilians frustrated the Italians, who deported tens of thousands of people to concentration camps in response. Between 1922 and 1930, the Italians seized nearly two hundred thousand hectares of land (mostly in Tripolitania), poisoned wells, and slaughtered livestock to strip people of their means of existence. The population of Cyrenaica collapsed from 225,000 in the early 1920s to 142,000 by 1931, with twenty thousand residents fleeing to Egypt and a further sixty thousand killed through starvation or disease. This was, plainly, genocide.²³

Colonial officials explicitly linked anti-Senussi operations and road development. In 1929, the minister of colonies Emilio De Bono, who had served as governor of Tripolitania from 1925 to 1929, requested government authorization to build roads. “The lack of roads” was “one of the principal reasons why the rebellion in Cyrenaica has been able to sustain itself so far and has assumed so stubborn and audacious a form of brigandage.”²⁴ The intensification of the anti-Senussi campaign in the late 1920s increased Italian automotive traffic, making maintenance of gravel paths uneconomical and inspiring projects to widen and asphalt high-traffic coastal roads.²⁵ Rodolfo Graziani, who served as vice-governor of Cyrenaica from 1930 to 1934, had participated in the genocidal *ricognista*, first in Tripolitania (as colonel, 1922–1924), then in Cyrenaica (as general, 1928–1932). In March 1932, with the Senussi rebellion crushed, Graziani wrote to De Bono that the expulsion of civilians from the fertile Jebel Akhdar uplands east of Benghazi to the punishing Sirte allowed the colonial administration to make rapid progress on a 175-mile stretch of road from Benghazi to Al Uqaylah. The military campaign not only permitted the administration to turn its attention to road construction, but it also necessitated the road itself. As Graziani wrote, “The works must continue without pause to assure means of sustenance to the populations of the encampments concerned.” Having deported tens of thousands to remote concentration camps, the Italians had to construct roads to supply them. Graziani boasted that the lasting result of the *ricognista* was the rapid construction of “remarkable road patrimony” in Cyrenaica.²⁶ Genocide and road infrastructure in Italy’s North African colonies were inextricably linked.²⁷

Italy’s East African Challenge

Whereas Libya became Italy’s theoretical fourth shore, the distant and impoverished East African colonies of Eritrea and Somaliland remained secondary in Italy’s colonial calculations until the 1930s. Eritrea counted only 161 colonists in 1932. The Italian civilian population in Mogadishu, the capital of Somaliland, numbered 250 in 1936; by contrast, 94,000 Italians lived in French Tunis.²⁸

Meanwhile, the political fragmentation of East Africa proved vexing. The isolated colony of French Somaliland (Djibouti) dominated East African trade thanks to its port facilities and a railway that connected to Ethiopia's capital, Addis Ababa. A checkerboard of British possessions in East Africa—Kenya, British Somaliland, and the condominium of Anglo-Egyptian Sudan—made it difficult to justify large investments in the Italian colonies (figure 7.2).

Italian officials sought to improve the finances of the Italian colonies by developing regional trade with British and French colonies, but especially independent Ethiopia.²⁹ As Africa's largest remaining independent state, Ethiopia was viewed by the Italians as crucial to the economic health of its East African colonies. While the French railway provided the landlocked country with a lifeline to the Red Sea and global trade, Italy and Britain jockeyed to exploit its market of fifteen million potential consumers.³⁰

Italian attitudes toward Ethiopia were ambivalent. Italy's defeat at the hands of Emperor Menelik II in 1896 continued to sting and symbolized Italian weakness. Italian officials and technocrats kept a close eye on Ethiopia, viewing it as a land blessed with fertile soils, abundant water resources, and favorable climates, a marked contrast with barren Eritrea and Somalia.³¹ They accused the Ethiopian government of mismanaging the productive potential of the territory, lamenting an "irrational and primitive" approach to agriculture. The Italians condemned the improper stewardship of "zootechnical patrimony" that numbered some forty million livestock and mineral resources left untapped owing to the "inexperience, unsuitability, and inertia" of Ethiopian authorities.³² The reality, as in so many other African colonies, was that Ethiopian agriculture and animal husbandry were well attuned to the landscape and climate of the territory, while Italian officials greatly overestimated latent mineral riches.³³ Nevertheless, the perception that Italian know-how would stimulate the rapid modernization of the Ethiopian economy drove interwar Italian policy.

Into the early 1930s, Italian officials in the Ministry of Colonies pursued policies of accommodation and cooperation with Ethiopia and its emperor, Haile Selassie I. Eritrea played the role of middleman in the trade between northern Ethiopia and the Arabian Peninsula, and Italian officials sought to increase economic connections.³⁴ De Bono appealed to Mussolini in 1931, writing that the poverty of Eritrea harmed Italian prestige in the eyes of the Ethiopian government. The lack of capital to drive colonial initiatives, De Bono opined, limited Italian options to increase their influence in Ethiopia. De Bono believed that almost fifty years after seizing Eritrea, the time had come "*to develop truly and finally our first-born colony*" (emphasis in original).³⁵

The environment challenged Italian modernization initiatives. The northern extension of the Ethiopian Highlands into Eritrea formed a major obstacle. The

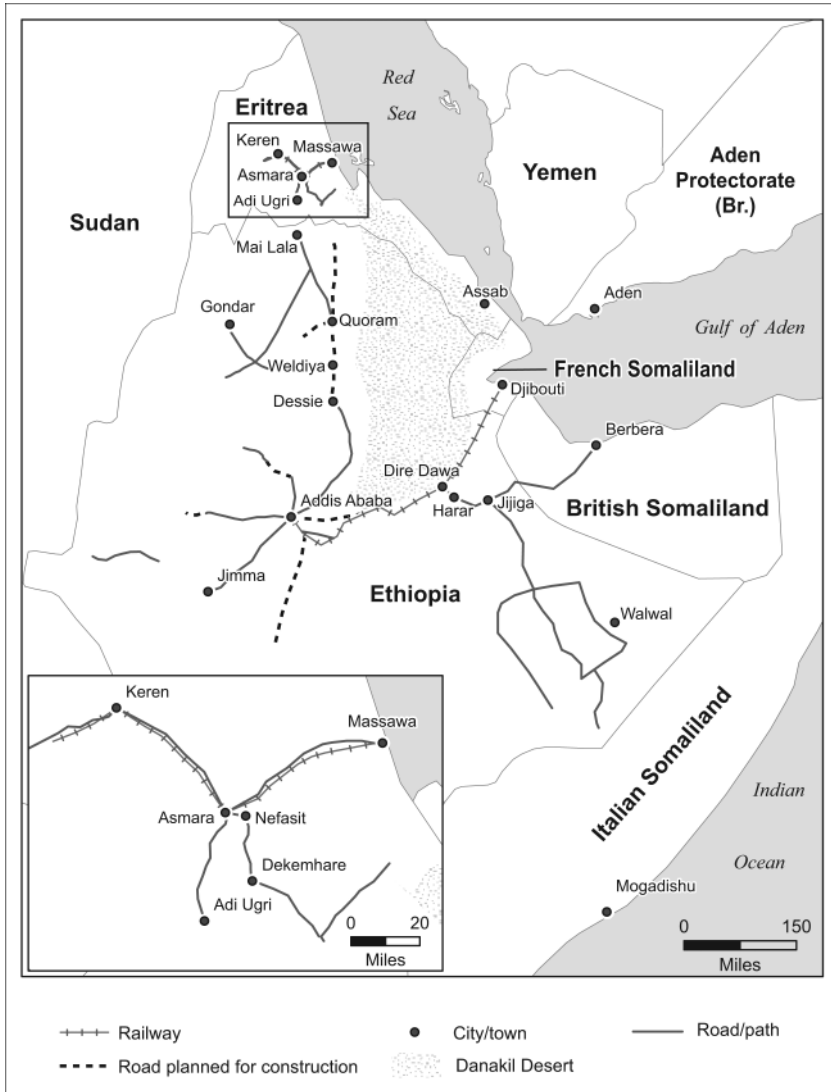


FIGURE 7.2. East Africa, 1935. Map by Di Shi.

capital of Asmara, only forty miles from the sea as the crow flies, sits at 7,628 feet of elevation. As a result, the road between the Red Sea port of Massawa and Asmara was essentially a narrow “caravan path” that “climb[ed] tortuously steep mountainsides,” while tight turns overlooked thousand-foot cliffs. The road’s steep slopes and hairpin switchbacks made it difficult to travel safely in a motor vehicle. Meanwhile, the Italian-built railway, which reached Asmara in 1911, had

an exceedingly narrow gauge to traverse the near-constant slope of 35 percent and could serve only a “negligible fraction” of the traffic and commerce projected by colonial boosters. Further, the climate of the Eritrean lowlands menaced Italian efforts. The Danakil Desert that sprawls across southern Eritrea, northern Ethiopia, and much of Djibouti is among the hottest places on earth. The Italians described terrain below three thousand feet of elevation as menaced by “infernal heat” with “nearly unbreathable air.”³⁶

Considering these challenges, the Italians began to study new road construction in Eritrea as early as 1925. Marshal Pietro Badoglio lamented the state of Eritrea’s roads and advocated “the construction *ex novo* of the network,” rather than its rectification.³⁷ In a sign of the accommodationist Italian attitude toward Ethiopia, the initial plans elaborated in 1931 called for roads that would connect western Eritrea to northwestern Ethiopia to allow Italian access to incipient mining and agricultural industries, while exploiting internal political dissension within Haile Selassie’s empire. The Ethiopian empire had long housed powerful regional leaders known as Ras, whose selective independence from the emperor challenged centralizing initiatives emanating from Addis Ababa.³⁸ Ras Hailu Tekle Haymanot (Hailu II) of the northwestern province of Gojjam, whose realm the Italians recognized as one of the richest in Ethiopia, was, according to De Bono, particularly well-disposed to the Italians. Thus, De Bono recommended that the Italians construct a four-hundred-mile road from Eritrea to Gojjam.³⁹ Meanwhile, in August 1928, Italy and Ethiopia signed a twenty-year “Treaty of Friendship and Arbitration,” which permitted the Italians to construct a road from the north-central Ethiopian town of Dessie to Eritrea, allowing landlocked Ethiopia a road outlet to the sea and providing Italy with access to Ethiopian commerce.⁴⁰ As late as 1932, the Italian government permitted Fiat and other Italian manufacturers to sell weapons and vehicles to Ethiopia.⁴¹ Taken together, Italian road projects and automotive contracts demonstrate that Italy pursued peaceful economic connections with Ethiopia, not war, into the early 1930s.

Simultaneously, however, Haile Selassie recognized that mobility was power and sought to keep the Italians at arm’s length. While the Italians pursued a disruptive divide-and-rule strategy by flattering the Ras along the Eritrea-Ethiopia frontier, Haile Selassie moved to strengthen his rule over the provinces.⁴² Before he became Emperor Haile Selassie in 1930, Ras Tafari had undertaken a road-building campaign in the 1920s to advance his project of state centralization from the capital of Addis Ababa.⁴³ Other developments in East Africa troubled Italian officials, as it appeared the emperor had his own plans to transform Ethiopia into an automotive empire, one troublingly independent from Italian influence. Until the 1930s, Italian officials viewed Ethiopian roads as disconnected branches of only local importance. According to Italian observers, Ethiopian roads were

“rudimentary and primordial,” lacking in modern engineering principles and constituting little more than seasonal “mule tracks.”⁴⁴ But in 1933, the Italian legation in Addis Ababa reported “numerous signs of road activity” in pursuit of the emperor’s plan to connect the capital with the most important provinces of the country. Haile Selassie purposefully avoided building roads that could be perceived as paths to invade neighboring territories (or which invading European powers might use to attack the capital).⁴⁵ The Ethiopian government did not have the wherewithal to finance construction itself and recruited European engineers to design roads. European companies and colonial officials jumped at the opportunity: the Italians wished to connect Ethiopian markets with their ports in Massawa and Mogadishu (Somalia); the French projected roads converging on Addis Ababa to feed their railway to Djibouti; and the British proposed a road from the Ethiopian capital to their Somali port at Berbera.

The savvy emperor was open to foreign initiative and investment but anxious to avoid falling under the sway of neighboring European powers. Haile Selassie thus sought out neutral parties without political interests in East Africa. And who was more neutral than the Swiss? In 1935, Ethiopia signed a contract with the Syndicat Suisse d’Études des Routes et Transports en Ethiopie (SERET).⁴⁶ The expertise and technology that underlay automotive empire went beyond public officials to the private sector and even drew in capital and personnel from non-colonial powers, making it a shared European project and an important vector of informal quasi-colonialism.⁴⁷ In road development as in international politics, Ethiopia’s rulers skillfully played European powers against one another in the early 1930s. Haile Selassie’s project of strategic connectivity saw Ethiopia develop a road network of over twenty-five hundred miles by the mid-1930s.⁴⁸ Having been outfoxed, Italian officials would have to solve their East African conundrum with different methods.

Roads as a Measure of Fascist Vigor in North Africa

Meanwhile, with the suppression of the Senussi largely complete by 1932, the Fascists redoubled their efforts in North Africa. At a speech delivered in Benghazi in February 1934, Cyrenaica’s vice-governor Graziani asked, “What is a country, gentlemen, without ports and roads?” He answered, “It can only resemble a body without a heart and without arteries—that is, a cadaver.” He reminded his audience that the Senussi found succor precisely in areas without road connections. The “agonizing” immobility, he claimed, made Italy’s North African territories “an isolated body, upon which Senussi parasitism and Levantine *profittismo* were

so well rooted.”⁴⁹ Graziani tied the lack of roads to Italy’s administrative and military struggles in North Africa. In his racist assessment, Bedouins and Jews, as peoples defined by their mobility either explicitly or implicitly, exploited the failures of the colonial state and frustrated Italian ambitions.

The Italians launched their North African development project by reorganizing the administration of the territories. In November 1933, Mussolini appointed Air Marshal Italo Balbo to the newly created position of governor-general of Libya, uniting the territories of Tripolitania, Cyrenaica, and Fezzan. Balbo had joined Mussolini’s Fascist Party in 1921, quickly rose to the party position of Ras of Ferrara (the Fascist honorific drawn from the Italian fascination with Ethiopia), and helped organize the March on Rome in 1922. Balbo had developed his own cult of personality, born of his status as an early Ras and his cultivation of spectacle as air marshal from 1926 forward. In July 1933, Balbo directed two dozen seaplanes across the Atlantic before landing on Lake Michigan as part of the Chicago World’s Fair (Balbo Drive bisects Chicago’s Grant Park to this day). Publicly, Mussolini declared Balbo’s appointment as governor-general as a signal of the importance of modernizing Libya’s administration to make it Italy’s fourth shore. Mussolini and Balbo agreed that Libya should pursue a modernizing agenda that would culminate in significant Italian settlement. Balbo’s appointment and the administrative unification of Libya certainly signaled a new stage in the colony’s development, but it was also a forced exile: Mussolini had grown leery of Balbo as a competing object of public adulation.⁵⁰

Balbo sought to make his mark in Libya with a spectacular road project, the *strada litoranea* (coastal road), also known as the “via Balbia,” that would simultaneously capture public attention and integrate the separate regions of the colony.⁵¹ Roads were a particularly useful tool in the Fascist program to position their regime as the rightful heirs of ancient Rome.⁵² Recall that Mussolini himself professed “a kind of Roman passion for roads.”⁵³ According to the historian Paul Baxa, “road building was fascism’s art par excellence,” which at once linked modern Italy to the colonial roads of ancient Rome, served as a *lieu de mémoire* for the Fascist rise to power in the streets, and promised a future society defined by mobility and speed.⁵⁴ As both a symbol and a tool, road building “held a central position in fascist thinking on empire.”⁵⁵ For Balbo, it was also a chance to distinguish himself as a modern administrator. Road construction in Cyrenaica had been marred by exorbitant costs because De Bono had accepted “completely arbitrary bids” from Italian construction firms, made without knowledge of the territory or consultation with public works officials. “Great masses of work” ensued, and costs ballooned before 1934.⁵⁶

Upon taking the reins in Libya, Balbo reflected that he arrived in a colony “now mature” and unified into “a single administrative, military, and civil organism.”

He undertook a tour of the colony by automobile in the first months of 1934 and became convinced that a road was needed to speed up traffic and “shorten the distance” between the areas of the colony. On February 12, 1934, he convened a meeting of administrators and technicians to formulate a plan. Mussolini issued a decree on March 14, 1934, quickly approving construction.⁵⁷ Officially, as was so often the case in Italy, Mussolini claimed paternity for the proposal, pledging “to solve the problem of Libyan coastal communications with an unparalleled great artery.”⁵⁸ The littoral road would stretch 1,133 miles from the Tunisian frontier in the west to the border with Egypt in the east, requiring just over five hundred miles of new construction and the retrofitting of the remaining distance. The colonial administration broke the project into sixteen sections, contracting the work to ten Italian companies at a total cost of 103 million lire. Work commenced in October 1935, and the road was completed in February 1937.⁵⁹

The regime carefully tallied numbers to document construction. In eighteen months, laborers worked 4.51 million ten-hour days (only 330,000 of which were completed by Italian workers).⁶⁰ They lauded the Libyan as “an exemplary worker” who “resists all the excesses of African climates,” including temperatures fueled by the ghibli winds that brought Saharan heat from the Libyan interior, which could exceed 120 degrees Fahrenheit.⁶¹ Photographs printed in the Italian media and official publications celebrating the road highlighted the scale of the work in the Libyan desert. One photograph, a wide-angle shot of the construction of the roadbed, shows dozens of Libyans in the distance moving rock with wheelbarrows and spreading sand across the road to make a smooth, flat surface (figure 7.3).

Each working group comprised fifteen to thirty Libyan workers and an Italian foreman, divided into four squads who specialized in different tasks.⁶² In the photograph, Libyan labor is necessary but distant and faceless; the road itself is the subject of the photograph. It juts toward the viewer at an angle, rising above the desert floor, a product of the Italian organization of Libyan labor and their audacity to construct a road in this perceived wasteland. The eye follows the vector of the roadbed to the left of the frame, where it stops abruptly, allowing the viewer to see the layers of material (and labor) that produced the finished roadbed. Such photographs narrativized Italy’s development of the *Litoranea* for metropolitan consumption, documenting the scale and scope of Fascist progress.

The Italians celebrated not only the heroic labor of Italian supervisors and colonial subjects but also the complex logistical organization. Supplying the workers, one publication exclaimed, was a “hard, terrible, immense enterprise!”⁶³ The sixteen sections of the project averaged two thousand workers each, some situated as far as 90 miles from the nearest supply of potable water and over 150 miles from the nearest population center. Solving these challenges required organizing logistics as “a war undertaking.” The construction of the roads became an



FIGURE 7.3. Preparation of the roadbed in Libya, 1937. Source: *La strada litoranea della Libia* (Verona: Mondadori, 1937). The Wolfsonian–Florida International University, Miami Beach, Florida, the Mitchell Wolfson Jr. Collection, 84.2.427. Photo: Lynton Gardiner.

extension of the Fascist militarization of everyday life and, the regime averred, attested to the common spirit of the Italian people. According to one anecdote, a truck filled with four thousand gallons of water traveled fifty-five miles to quench workers with “throats scratched by the scorching heat.” Ghibli winds “blew very violently” and covered the road with sand over two feet deep. Workers heroically cleared a path for the truck, and when blowing sand infiltrated its motor and it could advance no further, they improvised and attached the cistern to a steamroller, which delivered the water to the stranded workers after midnight.⁶⁴ In a published retelling of the episode, “seminude workers” transporting rocks on their backs greeted the arrival of water rapturously, creating truly “biblical images.”⁶⁵ These passages demonstrate how the Libyan road was not only a project to extend the reach of the colonial administration in North Africa but also a metropolitan showcase of Italian vision and will.

Rising Tensions in East Africa

The perception of hegemony in Libya by 1932, where the elimination of the Senussi gave way to territorial unification and road construction, contrasted

greatly with Italian weakness in East Africa. The Italians needed Ethiopia far more than Ethiopia needed the Italians, and Haile Selassie simply worked around Italy to spur economic development through infrastructure in the early 1930s. Fascist leaders increasingly despaired of Italy's geopolitical position in the early 1930s. Italy's impoverished, underdeveloped colonies could not support it in a world of global empires. In the Fascists' social Darwinist rendering of international politics, feeble Italy would be swallowed up by larger states. The straitened economic circumstances of the Great Depression and rising political tensions led Fascist officials to envision imperial autarky as the only means for Italy to escape geopolitical "suffocation."⁶⁶

Within this political framework, Italy interpreted Ethiopia's refusal of its advances in East Africa—that is, Ethiopia's sovereign pursuit of its own self-interest—as a form of sublimated aggression. Meanwhile, the successes of Haile Selassie's modernization program left the impression that Italy was falling behind in East Africa.⁶⁷ While Italian businesses sold technology and weaponry to Ethiopia in 1932, officials in the Ministry of Foreign Affairs began to advocate a more confrontational policy. By the end of the year, Emilio De Bono secretly drew up a "half plan" for a limited colonial conflict against Ethiopia.⁶⁸ Because Fascist officials viewed any delay in closing the gap between themselves and the Great Powers as exacerbating Italy's disadvantages, Italian colonial officials and military officers began to view Ethiopia as a hostile neighbor.⁶⁹ Marshal Badoglio wrote that Ethiopia's lukewarm stance toward Italy posed a great danger because the non-existent "territorial integrity" of Eritrea placed it in great "jeopardy" of collapse should Ethiopia invade. Frontier fortifications were insufficient, while "the road network was very poor, unsuited to even modest automotive traffic."⁷⁰ A military report filed in May 1934 observed that the upland Eritrean villages of Adi Ugri and Tucul, through which the Italians imagined Ethiopia's main lines of attack, were yet unserved by roads to Asmara and Massawa. Internal reports warned that "the path of invasion from Abyssinia is now completely open." The existing roads in Eritrea responded to local economic and administrative needs and were simply "inadequate" to military needs. All traffic flowed to the narrow, vertiginous path between Massawa and Asmara, which would be overwhelmed by the demands of deploying all Italian troops and supplies across the 650-mile border with Ethiopia, a task it could support only partially and at a "slow rhythm." Further, military planners lamented that all roads led to the capital at Asmara, an "artificial concept" that ignored strategic directives of logistical decentralization.⁷¹

Beginning in 1934, the Italians undertook the comprehensive development of the Eritrean road network to connect Massawa to Asmara and on to the border zone, a project contemporaneous with Libya's *strada litoranea*.⁷² The colonial government first reappropriated funds from the underperforming railway

to road construction, then Italian legislators allocated funds on January 25, 1934, to provide for the “newly definitive systemization of the Asmara–Massawa road, principal artery of Eritrean traffic.”⁷³ In particular, they focused on diverting traffic from Asmara by building a new section of road from Nefasit (along the preexisting Massawa–Asmara road) to Dekemhare to support a frontier sector endangered by its lack of road connections (see inset, figure 7.2). In a demonstration of the close relationship between the Fascist colonial regime and the construction industry, the Ministry of Colonies signed a contract with the Società Italiana Costruzioni e Lavori Pubblici (SICELP), a company with offices in Rome, Asmara, Tripoli, and Benghazi that constructed colonial infrastructures in the 1930s.⁷⁴ The lucrative contract gave SICELP a monopoly on the proposed Nefasit–Dekemhare road. Monopolistic infrastructure projects in Africa, with little state oversight of labor conditions or costs, made for easy profits and set the template for Fascist Italy’s imperial gambit. SICELP and its proprietor Salvatore Scalera were notorious in Rome for corruption and graft.⁷⁵

As in Libya, road construction in Eritrea posed environmental and human obstacles. The rock was too light and compressible to use in cement and bridge-works, while the lack of groundwater in much of Eritrea made it difficult to make cement. The administration imported most cement from the metropole, creating higher costs for the state and greater profits for Italian companies. When it was mixed, the “hostility of the climate . . . accelerates to the highest degree the setting of concrete” and forced the Italians to lay concrete at night, when it was cooler.⁷⁶ Steep terrain and high temperatures menaced laborers, and the Italians struggled to recruit and retain workers; one worker recalled that the heat was so oppressive that shifts lasted only three hours, from 6:30 to 9:30 a.m.⁷⁷ Construction on the Nefasit–Dekemhare road began in April 1935 using fifty-five hundred Italian and forty-four hundred Eritrean laborers, the latter of whom the Italians considered “a lazy and listless mass.” Meanwhile, the initial returns from Italian workers were poor. SICELP complained that the workers who arrived were “chronically unemployed . . . men of poor performance.” Many died of heatstroke and fevers shortly after arriving, creating a crisis of morale. In response, the Italians instituted a “semi-military structure,” with Eritrean and Somali Askari as well as Italian non-commissioned officers tasked with “works of persuasion” through threatened and enacted violence. Constructing roads some twenty-five hundred miles from Italy, “in a region deprived of every resource and every form of progress, served by an insufficient port,” thus encountered immense challenges.⁷⁸ Gradually, the Italians decided that Eritreans were physically and morally incapable of the grueling work and turned elsewhere.

Desperate Italian authorities sought to import workers into Eritrea. Drawing on their concurrent project in Libya, the Italians believed Arabs and Berbers to

be more industrious and physically hardy than Eritreans. They reached agreements with Imam Yahya of Yemen to sign hundreds of Yemenis to work contracts, while over eight hundred Libyan workers traveled to Eritrea to build roads. Italian envoys in British African territories requested permission to recruit laborers and transport them to Eritrea. In Khartoum, the Italians sought to hire five thousand Sudanese to work for ten months, having decided that Yemenis “were unable to continue owing to the rigors of the climate.”⁷⁹ They reached out to officials in British Somaliland and the Aden Protectorate and as far east as India and Ceylon, but encountered a blanket policy of refusal to allow recruitment of British subjects for Italian labor or military service.⁸⁰ Meanwhile, SICELP refined its metropolitan recruiting, and Italian workers poured into the colony beginning in May 1935. Construction sites averaged between nine thousand and eleven thousand Italian workers each month from May through October 1935, when the road was completed. From June to September, Eritrean workers hovered around two thousand, while the combination of Libyan, Sudanese, and Yemeni laborers ranged from one thousand to five thousand.⁸¹ In short, after the first month of operations, Italians made up 70 to 80 percent of the workforce employed along Eritrean roads, a novelty in the era of automotive empire.

A focus on construction logistics linked the Eritrean and Libyan projects. The “grandiosity of the endeavor” demanded that Italy approach Eritrean road construction as a military campaign, “a difficult and harsh battle that had to be won at any cost.” The needs of Eritrea bound the long-ignored colony to the metropole, as “machinery, work and transportation vehicles, technical and support personnel, [and] specialized workers flowed from Italy and Libya” into East Africa. Engineers and laborers launched “a coordinated attack from various points,” work accelerated at “an incessant rhythm,” and “all the immense difficulties presented by nature were confronted and overcome one by one.” The mass of thirty thousand laborers served as “a true army corps operating on a front of 150 kilometers.” Along this front, the Italians outfitted thirty construction yards with barracks and cafeterias and organized lodging, water, food, medicine, and nocturnal defense against hyenas and jackals. As in Libya, the project provided ample opportunity for the Fascist regime to catalog its successes. Between May and October 1935, Italian officials tallied 2,000,000 cubic meters of earth excavated, 802,000 square meters of paved surface, 15,700 tons of concrete laid, 110 tons of explosives detonated, and 23,000,000 man-hours worked. Taken together, the presence of thousands of Italian workers allowed the Fascist regime to portray the construction of the road as a “miracle of will, patriotism, and self-sacrifice.”⁸²

Road construction not only brought Fascism’s ambitious, well-funded model of colonial development to Eritrean shores but, as suggested by the language and numbers above, inspired reverential propaganda about Italian glories. The

connection to the Roman Empire through roads created opportunities for what the historian Roger Griffin has called the “mythic legitimization” of the Fascist regime through “technocratic, Promethean” projects.⁸³ Road construction signaled a new era in the histories of Fascist Italy and the Horn of Africa alike. An artist’s rendition of the project graced an illustrated Sunday supplement to the *Corriere della Sera*, Italy’s highest-circulation newspaper, in June 1935 (figure 7.4).

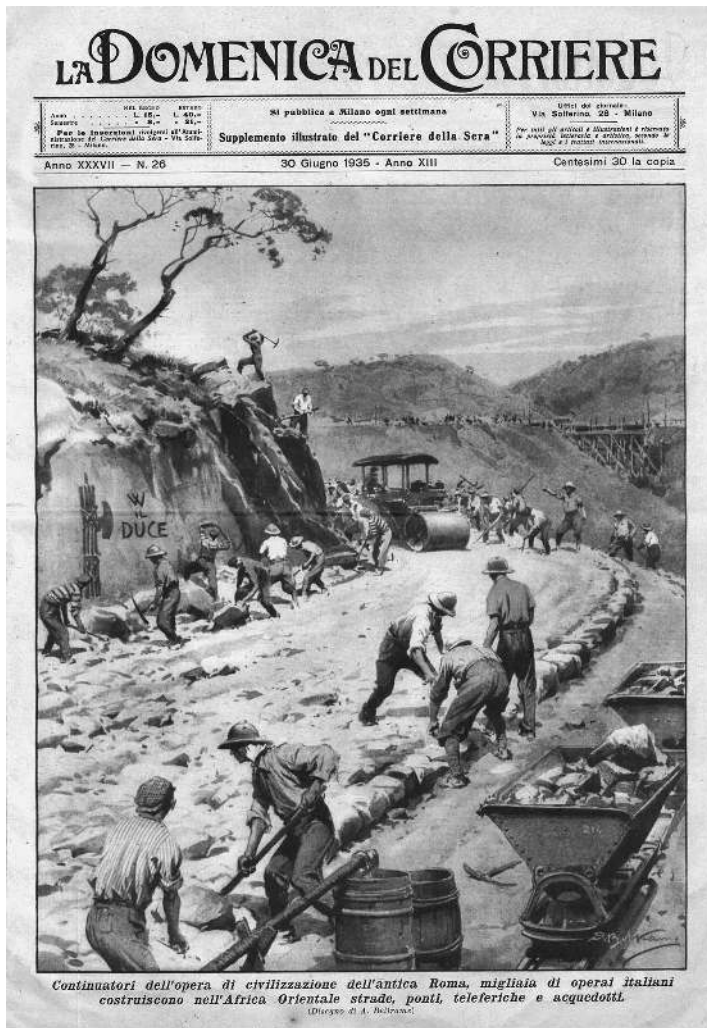


FIGURE 7.4. Painting depicting roadworks in Eritrea, 1935. Source: Author’s collection.

The painting shows Italian workers sporting pith helmets and flat caps at work in many planes of activity. In the far distance, they construct a bridge over a small ravine. A steamroller rounds a corner at the center of the frame, while dozens of workers use pickaxes to chip away at the hillside, lay the roadbed, and mark the limits of the path. Inscribed on exposed rock is the symbolic fasces and “VV Il Duce” (long live the Duce), an example of the ubiquitous pro-Mussolini graffiti that marked the road projects.⁸⁴ The caption, meanwhile, explicitly claims the workers, and the Fascists more generally, as heirs to “the civilizing work of ancient Rome” by constructing roads at the edges of empire. Propagandists were careful to highlight the roads as a triumph for Italy on the global stage, while also alluding to the benefits that they delivered to the metropole. The project cost 105 million lire, of which 80 million lire paid workers’ wages, and a full 30 million of which returned to Italy in the form of remittances.⁸⁵ Even as Fascist officials and Italian citizens complained of SICELP’s waste and corruption, they agreed that Eritrean road construction brought material and symbolic benefits to Italy.⁸⁶

But constructing roads in Eritrea was more than an infrastructure program described in martial terms for propaganda value. Convinced that Italy’s weak position in East Africa doomed plans for autarky and great power aspirations alike, Mussolini had by the end of 1934 privately settled on plans to invade Ethiopia.⁸⁷ Meanwhile, the limited plans drawn up in 1932 were superseded by designs for a far more comprehensive, rapid conflict that required hundreds of thousands of men.⁸⁸ The militarized construction campaign thus served as a precursor to Italy’s invasion in October 1935. Road construction was a precondition for military action in the region and, in its logistical complexity, a test run for the Fascist state.

In another, far-less-celebrated effort, the Italian government simultaneously constructed roads and imported vehicles in Somalia, which shared a 560-mile border with Ethiopia and a 700-mile border with British Somaliland and Kenya.⁸⁹ Indeed, the Italians challenged Ethiopian sovereignty along the Somali border repeatedly from 1925 onward, staking claim to strategic water holes and conducting regular patrols in Ethiopian territory while refusing to delimit the boundary in writing. These incursions informed Haile Selassie’s skeptical policy vis-à-vis Italy in the early 1930s and culminated in the late 1934 Walwal incident, a skirmish between Italian and Ethiopian troops in southwestern Ethiopia that made war appear increasingly inevitable. The manufactured international crisis informed the breakneck pace of road construction in Eritrea in 1934 and 1935. In 1935, Italy and Ethiopia maneuvered in international forums: Italy to justify aggression, Ethiopia to forestall it. With France and Britain spooked by the specter of German rearmament, Italy negotiated a free hand in East Africa at the

Stresa Conference of April 1935 in exchange for a short-lived and ill-fated alliance (the Stresa Front) meant to neutralize German aggression.⁹⁰

In the wake of the Walwal incident, Italy and Ethiopia prepared for war. Roads and motor vehicles were central to the planning of each. Ethiopian logistics remained nearly entirely dependent on animals, with Italian officials estimating only perhaps one hundred trucks available and no dedicated military logistical service. Rodolfo Graziani, in his capacity as governor of Somaliland and fresh from his repressive campaign in Cyrenaica, wrote that in case of a conflict, “it would not take long for a logistical crisis to manifest itself among the Abyssinian forces due to their size.” At peace, the Ethiopian army counted 360,000 men; mass mobilization would push the number of Ethiopian soldiers beyond 800,000.⁹¹ Ethiopia purchased Mercedes, Ford, and Chevrolet trucks from suppliers in Africa and the Middle East and signed fuel contracts with Texaco (US) and Besse (French-owned, Aden-based). Simultaneously, Addis Ababa approved the retrofitting and construction of roads between the capital and their borders with Eritrea and Somalia, respectively, to prepare for a modern, highly mobile conflict with Italy.⁹²

With tensions on the rise, the Italians took measure of their adversary. Emilio De Bono, who would lead the initial invasion from Eritrea, dismissed Ethiopia as “a semi-barbarous country,” while Rodolfo Graziani, who led the invasion from Somaliland, mocked a people crushed beneath “the enormous weight of customs, traditions, absurd beliefs, and superstitions.” Nevertheless, Italian officials cautioned that the alleged primitivity of Ethiopia was a military asset, as “the Abyssinian soldier knows the terrain, marches twice as fast as ours, has much less need to eat . . . [and] to drink.” As Graziani warned, when combined with the “intelligent and astute guidance of their emperor,” training by Western military advisers, and the recent influx of modern automotive equipment and support infrastructure, Ethiopia was a formidable opponent.⁹³ Pietro Badoglio, advising Mussolini in the spring of 1935, wrote that the size of the Ethiopian army and the rapid improvement in their equipment and logistics meant that East African Askari—55,000 in Eritrea and 20,000 in Somalia—could not sustain an Italian offensive alone. Italy would need to send at least six metropolitan divisions totaling 160,000 men to supplement them. Because the road network in Eritrea was far more developed than that in Somalia, where “a few drops of rain render the movement of any vehicle absolutely impossible,” Eritrea would be the offensive front and Somalia the defensive one.⁹⁴ Meanwhile, the Italian automotive industry took on a more activist role. In response to “the provocative politics of the Negus” (Haile Selassie’s title was *Negusa Nagast*, “King of Kings”), Fiat leaned into jingoism and mobilized “its finances, its men, [and] its organization in service of the country,” coordinating with military officials to transport vehicles of

all types to East Africa.⁹⁵ The prospect of warfare integrated the Italian colonial-industrial complex for the first time, binding road construction companies and the automotive industry to the belligerent designs of the state. War, it seemed, would advance the interests of the Italian empire and Italian industry alike.

Automotive Warfare

As road construction peaked in Eritrea in the summer of 1935, Italy placed its colonies on war footing. Mussolini mobilized the Italian military at the end of July.⁹⁶ Haile Selassie sought to rally international support, while Britain and France worked to mollify Italy. With most of the work on the Nefasit–Dekemhare road complete by the end of September (the Italians inaugurated the completed road on October 28, 1935), the Italians massed 200,000 men in Eritrea and Somalia, and another 140,000 prepared to make the journey from Italy.⁹⁷ The Fascist regime synchronized roadbuilding and war making, clarifying their obsession with labor recruitment and rapid construction progress in the spring and summer of 1935. Italy invaded without an official declaration of war on October 3, 1935, when General De Bono entered Ethiopia with one hundred thousand troops.

A new type of colonial war was born. Given its scale and speed, Mussolini observed that it required “a logistical effort of nearly unimaginable proportions.” He demanded that Italy transform the conflict from a limited colonial war to a comprehensive, transcontinental one, with the might of the metropole thrown behind the effort. Following the declaration of victory in May 1936, Mussolini labeled the war “Fascist” because “it was conducted and won with the soul of Fascism: speed, resolve, spirit of sacrifice, courage, and resistance beyond human limits.”⁹⁸ By the time Italy declared victory in May 1936, 330,000 Italian soldiers, 87,000 Askari, and 100,000 militarized Italian laborers had participated in the conflict.⁹⁹ For the historian Matteo Dominioni, this was a war both “of” and “for” Fascism: the conflict mobilized the discrete political, military, economic, and intellectual sectors of the state while also serving “to celebrate the maturity of the regime.”¹⁰⁰

Roads and motor vehicles aided the advance and symbolized the Fascist spirit of the war, conveniently obscuring the reality that illegal aerial raids of poison gas often cleared the path. Italian officials claimed to invent “a new *form* of colonial war” (emphasis in original) with their use of massive Italian and Askari units across wide-ranging battlefronts, but in particular, “for the magnificence of the logistical services thousands of kilometers from the national territory.”¹⁰¹ The Italian archival record and contemporary media coverage alike are remarkable

for their relative lack of interest in the heroism of Italian soldiers or the brilliance of military strategists on the battlefield. Instead, machinery, infrastructure, and logistics, expertly orchestrated by the Fascist state and personified in the Duce, took center stage. A sixty-seven-minute propaganda film released in 1936, *Il cammino degli eroi* (The path of heroes), epitomizes this framing in its title and content alike.¹⁰²

As Italy's submission to—and the winner of—the competition for best political documentary at the 1936 Venice Biennale, the film constructed the official Fascist historical record.¹⁰³ The narrator opens the film by reminding viewers that more than weapons win a war. There exists an invisible “enormous machine” to mobilize and support them. Scenes depicting industrial production in Italian factories demonstrated that the metropole supported the war effort from thousands of miles away, and the Fascist war depended on massive exports of everything from trucks and tractors to canned food and shoes. The camera shows ships loading in Genoa before alighting on aerial shots of Massawa and Mogadishu, where dozens of ships queue offshore. Port workers unload massive war vehicles, trucks, and streetcars, while an unfathomable number of oil drums are lowered to the dock and rolled away for storage. The narrator draws the viewer's attention to “motorized columns advancing on a newly constructed road” from Massawa to the highlands, followed by long convoys of trucks hauling supplies. Roads served as a veritable umbilical cord that connected Italian soldiers in East Africa to the nourishment of industrial Italy.

Although Italian troops initially advanced quickly when Ethiopian troops fell back, the invasion slowed as the Italians strained their supply lines and encountered stiff resistance. In December 1935, a frustrated Mussolini replaced De Bono with Pietro Badoglio, who had whispered criticisms of De Bono long before the invasion.¹⁰⁴ Unwilling to give credit to Ethiopian leadership or soldiers, the Italians blamed infrastructure, but not their own. The failure of Ethiopia's roads to support the advance of thousands of heavy vehicles was an affront to Fascist principles of speed and aggression. The main road connecting Addis Ababa to northern Ethiopia, named the Imperial Road or the Negus Road, proved particularly frustrating to the Italians, who described it as “in effect no more than a passable path,” usable only in dry weather “by columns of a few light vehicles.” According to two Italian officers, “for long stretches across valleys and plains, the road is nothing more than a simple track in natural terrain, identifiable by two lines of stones,” with no bridgeworks of any consequence. Steep slopes and muddy ruts overtaxed engines, and fuel consumption was prodigious.¹⁰⁵ After Badoglio assumed command, he observed with frustration, “So-called imperial roads were in reality bad paths as poor as our cart tracks.” Ethiopian roads became a marker of difference. Badoglio wrote, “If in the mind of the Negus” these roads “were to



FIGURE 7.5. Italian trucks on the “so-called Imperial Road” constructed before the Italian conquest, ca. 1938. Source: Giuseppe Cobolli Gigli, *Strade imperiali* (Milan: A. Mondadori, 1938). The Wolfsonian–Florida International University, Miami Beach, Florida, the Mitchell Wolfson Jr. Collection, TD1990.92.2. Photo: Lynton Gardiner.

have represented the mark of civilization,” they were “the sure indication of [its] puerility.”¹⁰⁶ Ethiopia’s poor roads alone, it seemed, justified the Italian conquest.

Published and archived photographs document the state of Ethiopian roads and, with them, Italian frustrations. One, published in a popular book on the roads of empire for metropolitan readers, depicted the “so-called Negus Road” shortly after Italy’s victory in May 1936 (figure 7.5). The epithet “so-called” regularly modified Italian descriptions of Ethiopian roads in both official correspondence and the popular media, reminding readers of the chasm between Italy and Ethiopia.

Framed by a stark, rock-strewn landscape, a column of trucks advances toward the photographer. The sheer number of Italian motor vehicles used in the war overwhelmed the dirt road, and the softening of the earth by rains resulted in ruts that became so deep that rain pooled in the track, stranding vehicles. The road deteriorated to the point that the Italian trucks barely had enough clearance to avoid scraping the bottom of the vehicle. If this was only the first stage of rains in northern Ethiopia, then certainly the height of the rainy season would leave Italian vehicles mired on the roads, diminishing Italians’ technological advantages



FIGURE 7.6. The frustrations of automotive warfare in Ethiopia, ca. 1936.
Source: Luce Historical Archive, Rome.

over their Ethiopian subjects as they sought to stamp out resistance and administer their new colony.

Countless official photographs registered Italian immobility. One image, a photographic still taken by the state film bureau, Istituto Luce, depicts how Ethiopian roads frustrated Italian plans (figure 7.6). In it, a Fiat automobile ascends a muddy slope and has become stranded. All forward motion is halted, and a few soldiers push the vehicle from behind. Another two dozen soldiers stand by the roadside, watching, while older Italian officers observe the action uphill of their efforts. In such photographs, Fascist speed fails not owing to the lack of Italian verve but rather because of the shortcomings of Ethiopian roads. What was meant to be a rapid advance to Addis Ababa often became a process of standing, watching, and waiting as Italian soldiers and African Askari worked to extricate vehicles and retrofit roads.

Although frustrating in the moment, the challenges did not come as a surprise to Italian officials. Prewar reports predicted that rains would create “grave difficulties” for advance in Ethiopia, while “the absolute lack of resources” in much of the region, and particularly in the mountains and deserts of Eritrea and Somaliland, would hamper a “rapid and conclusive war.” The “enormous

distances” between East African ports and the battle lines would create logistical challenges given “the enormous needs of the troops (armed and equipped according to modern criteria).” In response, the Italians expected to construct supply depots every one hundred miles as they advanced, while simultaneously undertaking “road renovations” in conquered areas to advance farther.¹⁰⁷ Put simply, road construction and military conquest were simultaneous, mutually dependent processes during the Italo-Ethiopian War.

Given these logistical demands, the central protagonist of the war effort was not the Italian soldier, but trucks and tractor-trailers. While the Italians built roads in Eritrea in 1934 and 1935, they also scrambled to purchase and transport thousands of trucks. Italy’s largest manufacturer, Fiat, had only been able to provide 2,500 vehicles for the war effort by September 1935.¹⁰⁸ Italian officials scurried to procure vehicles elsewhere, and in 1935 alone, an Italian dealer in Mogadishu purchased 4,767 trucks from Ford-Egypt. When war began in October 1935, The *New York Times* reported that thanks to this Egyptian purchase, Ford’s Dearborn plant had supplied 2,200 half-ton trucks to the Italian colonies (the rest came from Ford’s plant in Dagenham, England). A scandal erupted in the US and shipments stopped, with Rodolfo Graziani claiming that the isolationist Henry Ford had instituted “personal sanctions” against Italy.¹⁰⁹ Meanwhile, Fiat put fourteen thousand laborers to work and ramped up production, sending an additional 4,500 vehicles to Italian Africa by the end of the year.

The Italian state poured funding into Fiat and related industrial companies. Automotive warfare in the Horn of Africa further solidified the integration of Italian big business and the Fascist regime. With an influx of capital and guaranteed military buyers, Fiat began mass production of the 634N model truck, which would come to be known as “the truck of victory.”¹¹⁰ Advertising materials described “the rumble of the motor” as “a friendly voice to the combatant,” and the 634N became both “a symbol and the means to victory.”¹¹¹

The Italian war, brutal in its methods, both depended on and gave birth to an ad hoc road construction campaign in Ethiopia. *Il cammino degli eroi* extolled Italian efforts: “Like by a miracle, the roads seemed to be born, hour by hour, under the wheels of the advancing vehicles.” One hundred thousand Italian workers worked for seven months under military discipline, performing “incessant labor . . . with an entirely Roman energy.”¹¹² Indeed, in many cases, Italian Blackshirt paramilitary divisions built the roads while African Askari fought battles, an indication of the relative skill and importance Italian commanders assigned to each task.¹¹³ The film depicts the delicate pas de deux between Italian workers and military trucks, with stunning images in depth of workers toiling in the foreground of a shot with trucks coming up behind them, showing how the Italians literally made the road just in advance of the motorized military column.

Little wonder that Ethiopian troops attacked the Italian workers at the Gondrand Camp outside Mai Lala in February 1936. What the Italian delegation in Geneva portrayed as a peaceful act of civilizing infrastructure was in fact the nervous system of the advancing Italian army.

Although the interconnected projects of roadbuilding and war making advanced in tandem from the beginning of the conflict in October 1935, they reached their climax in the spring of 1936. The Italian southward advance reached Dessie, approximately halfway between the Eritrean border and Addis Ababa, in early April. General Badoglio began to assemble supplies in Asmara, while Italian roadbuilders worked feverishly to improve the roadway to Dessie. As Badoglio himself wrote, the focus of this effort was “the collection, requisition, arrangement, and mobilization [*avviamento*] of 1,300 trucks.”¹¹⁴ They departed Asmara on April 18, 1936, and converged on Dessie on April 22, their advance made possible, in Badoglio’s words, by the “goodwill and spirit of sacrifice of the soldiers and civilian drivers,” whose trucks became mobile propaganda billboards adorned with graffiti acclaiming “the homeland, the King, the Duce.”¹¹⁵ In Dessie, a combined force of 1,725 motor vehicles and twenty thousand troops (ten thousand Italians and ten thousand Askari) rallied for the advance on the Ethiopian capital.¹¹⁶

On the 250-mile march on Addis Ababa that began on April 25, motor vehicles and logistics took center stage. According to General Quirino Armellini, the advance won the war from an operational point of view and was made possible only by “our perfect organization” and “our absolutely decisive will to reach the goal.”¹¹⁷ Badoglio reported that the troops were “always constructing the roads necessary for their lives.” Armored columns stopped every few hundred meters “to intensify roadworks that were forcibly slowed during the battle,” work that Italian troops undertook “tirelessly and with great momentum.” In this formulation, firefights with Ethiopian soldiers were a frustrating distraction from the core objective of road construction. The Fascist interrelations between war, motorization, and Italian civilization found their expression in the march on Addis Ababa, as when Badoglio recounted, “Everywhere new roads opened or were improved, services were perfected, thousands of natives placed themselves in our service.”¹¹⁸ For Italian officers and the media alike, the advance had its emblematic incident at Termaber Pass north of Addis Ababa. There, at 10,500 feet of elevation, the march stalled out on May 2 because heavy rains made steep roads slippery and impassable. Italian troops dropped their weapons and picked up their shovels, working alongside Eritrean and Ethiopian laborers in “36 hours of continuous, intensive work” to clear the roadbed of obstacles and build retaining walls one hundred feet long by one hundred feet high. Badoglio described the “moving” scene, and Italian troops crossed Termaber on May 4.¹¹⁹ At 4:00 p.m. on May 5,

Badoglio entered Addis Ababa an automotive conqueror, at the head of a parade of motor vehicles. He marveled at how this “mass of 1,600 reckless vehicles on an unknown path reached their destination.”¹²⁰ Badoglio declared that “this march had no precedent in military history” and dubbed it the “March of the Iron Will,” the term immortalized in Fascist propaganda thereafter.¹²¹ Although some 80 percent of Ethiopia remained unoccupied by Italian troops, Italy declared victory. Having made no formal declaration of war, the Italians saw no need for a signed surrender.¹²²

Propagandizing Automotive War and Victory

From May 1936, the parallel but previously discrete projects of colonialism in East Africa and Libya became inextricably linked as a unified imperial endeavor. Ruth Ben-Ghiat and Mia Fuller describe colonialism as central to the Fascist project of unifying Italy.¹²³ The national war that mobilized soldiers, workers, and industry provided the regime with a platform to pronounce the termination of Italy’s second-class status. Mussolini proclaimed the birth of a new Italian empire in Rome on May 9, and on June 1, 1936, Italy merged Ethiopia with Somalia and Eritrea to create Italian East Africa (Africa Orientale Italiana, AOI). Italians and outside observers, such as the Briton Edward Polson Newman, agreed that motorization had made “the conquest and development of Abyssinia possible for the first time in history.”¹²⁴ Given the centrality of roadbuilding and motorization to colonial efforts in both East Africa and Libya, propaganda of automotive empire cultivated a Fascist imperial culture.¹²⁵ The motorized conquest of Ethiopia and the construction of the *strada litoranea* alike heralded the arrival of the Italian empire.

The initial metropolitan impact of the Ethiopian victory occurred in the public sphere, where state propagandists and private advertisers alike seized on the symbolic capital of automotive empire to sell Fascism and all manner of products to Italian consumers. Surprisingly, the mediation of the Fascist project created advertisements more focused on discrete Italian businesses than the *Croisière noire* had done for their French counterparts in liberal-capitalist France. Colonial motor vehicles forged new links and strengthened existing ones in the Italian colonial-industrial complex. *Il cammino degli eroi* was only the most celebrated of many films and newsreels produced by Istituto Luce to glorify Italian vehicles and road construction projects.¹²⁶ Still photographs from the war effort, which circulated widely in the media, depict the tight connection between conquest, the automotive industry, and state propaganda. The repetition of common motifs gives them a generic nature, producing what the historian Patricia Hayes dubs

“empty photographs.”¹²⁷ Soldiers pushing cars. Men reading maps. Cars fording rivers. Truck columns advancing. Lines of vehicles at Italian bases. Taken together, the photographs chronicle the scale of the war but depict no fighting or damage, rendering it as a war of logistics rather than one of massacres, poison gas, and concentration camps. For Italians back home, automotive warfare appeared morally clean; any frictions were environmental and infrastructural, not human.

Businesses involved in the war effort were particularly enthusiastic purveyors of the imagery of automotive empire.¹²⁸ From the perspective of the Fascist regime, the “national” war in Ethiopia unified Italy. Motorized warfare knit together varied sectors of the metropolitan economy, institutions of the Italian state, and the distinct regions of Italy. Propagandistic volumes celebrated Italy’s conquest. *Italia imperiale*, edited by Manlio Morgagni, the head of the state press agency (Agenzia Stefani), epitomizes this coordination.¹²⁹ The sumptuously illustrated volume included short essays on industrial support for the war effort. The heads of famed Italian companies composed chapters: the Milanese construction magnate (and senator) Piero Puricelli wrote on communications (especially roads) in Ethiopia; the Turinese president of Fiat (and senator) Giovanni Agnelli described the involvement of the mechanical industry; and Piero Pirelli, the Milanese president of the eponymous tire company, recounted the rubber industry’s contribution to the war.

Elsewhere in the volume, advertisers traded on their importance to automotive victory. The Rome-based oil company AGIP purchased a full-page advertisement (figure 7.7). An automobile with an Italian driver and an Askari soldier manning a machine gun in the passenger seat points toward the viewer, superimposed over a map of East Africa, with the text reminding the viewer that “AGIP provided the fuel for the conquest of the empire.” Beyond profits produced for industrial and financial centers in Turin, Milan, and Rome, port cities such as Genoa, Naples, and Syracuse benefited from the deployment of personnel and matériel to the East African front. A 1937 volume trumpeted the importance of the connections between Naples and Addis Ababa.¹³⁰

While the text engaged in Neapolitan boosterism, advertisements celebrated national automotive victory. A Pirelli advertisement for its “Sigillo Verde” (Green seal) tire mirrors that of AGIP (figure 7.8). Atop a map of Italian East Africa, a tire track runs in an arc from the Somali port at Mogadishu to the heart of empire in Addis Ababa, where the tire that is making the track is suspended in motion at the center of the frame, casting a shadow over the region. The text, reminding the viewer of the importance of trucks to the victory, declares the Pirelli tire as the ideal choice for “modern trucks.” In these publications and advertisements, motor vehicles, maps, and



FIGURE 7.7. Advertisement for the Italian oil company AGIP, 1936. Source: Manlio Morgagni, ed. *Italia imperiale: Edizione speciale della rivista illustrata del popolo d'Italia* (Milan: Popolo d'Italia, 1936). The Wolfsonian–Florida International University, Miami Beach, Florida, the Mitchell Wolfson Jr. Collection, 83.2.2146. Photo: Lynton Gardiner.

movement between Italy and East Africa served to enrich and unite Italy under the banner of Fascism.

Fiat, more than any other company, profited symbolically and financially from Italy's motorized conquest of Ethiopia. The 1936 Milan Fair, held in April



FIGURE 7.8. Advertisement for the tire company Pirelli, 1937. Source: *Napoli-Addis Abeba: Albo di ferro della passione di Napoli per la fondazione dell'impero* (Naples: A. Caldarola, 1937). The Wolfsonian-Florida International University, Miami Beach, Florida, the Mitchell Wolfson Jr. Collection, 85.2.21. Photo: Lynton Gardiner.

as the war in Ethiopia raged, saw Fiat create a massive exhibit in support of the war and the company's role therein (figure 7.9). A massive edifice, some eighty to one hundred feet high, dominates the outdoor display. The Fiat logo, in its iconic modernist font, perches atop the edifice. The viewer's eye moves down the edifice, alighting on the map of the Horn of Africa, cut into the display in



FIGURE 7.9. Fiat display at the Milan Fair, 1936. Source: Archivio Storico Fondazione Fiera Milano.

negative space. The map shows gains made by Italian troops at that point in the conflict, with arrows indicating Italian assaults from Eritrea and Somalia on the remaining rump of the Ethiopian empire. At the base of the edifice, the letters “A.O.” remind the visitor of the conflict in Africa Orientale. At ground level, a tank positioned on a large wedge gives the impression of summing a steep hill, and a selection of trucks and armored cars are arrayed behind it. To the side, at an angle meant to catch the viewer’s eye, is a phrase—PRESTO PROSEGUIRÀ—“we will advance rapidly.” The exhibit, which took months to prepare, suggests the close integration of metropolitan and colonial, public and private initiatives.

Postwar Fiat advertisements sought to capitalize directly on the war effort by connecting the industrial production of motors and vehicles at the Lingotto factory in Turin to the war effort in East Africa, highlighting the journey “from the fire” of metropolitan industrial production “to the fire” of the Ethiopian front.¹³¹ One ad traced the journey from Lingotto “to the African paths,” stating “the Fiat 634N has been termed the truck of victory. Thousands of these gigantic vehicles have been used by the glorious Italian troops in the Ethiopian campaign.” Beyond filling Fiat’s coffers by providing guaranteed government purchases, the wartime colonial-industrial complex allowed the automobile manufacturer to leverage its military involvement to appeal to Italian consumers’ patriotism.

A belligerent, Fascist automotive empire came to infuse even metropolitan car culture. A 1937 Fiat advertising pamphlet posed the rhetorical question, “Do you want to become a motorist?”¹³² Upon opening the pamphlet, the heading on the first page declares “This is the era of the motor,” before chronicling the service of Fiat trucks to the March of the Iron Will. Fiat describes the creation of the empire as “a miracle of technology.” Having served the needs of the military, the pamphlet declares, Fiat desires to provide a new option to Italian consumers. A stunning composition greets the reader on the second page, with the caption “The Empire: From the Roman Legions to the Motorized Army of Fascist Italy” (figure 7.10). The foreground depicts a motorized victory parade in which Fiat 634N trucks take pride of place, while soldiers stand alongside the road, serving as an audience for the trucks. Luce propaganda films and photographic stills from May 1936 made such motorized parades iconic images of the Italian conquest of Ethiopia, immediately recognizable to the metropolitan audience.¹³³ Framing the painting is a composite Ethiopian landscape marked by the distinctive silhouettes of mountains in the Ethiopian Highlands, palm trees, and the cactus-like, candelabra-shaped *Euphorbia abyssinica*. Spectral Roman legions on the march loom in the sky, connecting the glory of the Roman Empire and its penchant for roadbuilding to Fascism’s modern update, fueled by Fiat trucks.

Asking Italian consumers if they wished to become motorists invited them to confirm themselves as the heirs to the great Roman tradition of conquest and civilization. Following the March of the Iron Will, with Italy’s status as an empire vindicated and its global role cemented, selling motorized conquest to eager metropolitan consumers was good business.

Promoting the *Strada Litoranea*

The metropolitan mediation of the *strada litoranea* offered a separate but complementary vision of automotive empire when it was completed in 1937. The Italo-Ethiopian War created a cacophony of publications, films, and advertisements. The audacious yet ordinary road along the Libyan coastline offered fewer opportunities for metropolitan businesses to trumpet their involvement in imperial glory. Whereas the metropolitan presentation of the war stressed all of Italy unified in pursuit of victory, the *strada litoranea* was a monument to the Fascist state. The coastal road served as material proof of the territorial unification of Libya, but its presentation to the metropolitan public rendered it as a heroic Fascist campaign that would finally allow Libya to realize its destiny as Italy’s fourth shore. Given the association of roads with ancient Rome and the scale and speed of construction, Fascist propaganda cast the *strada litoranea* as a pivot in both

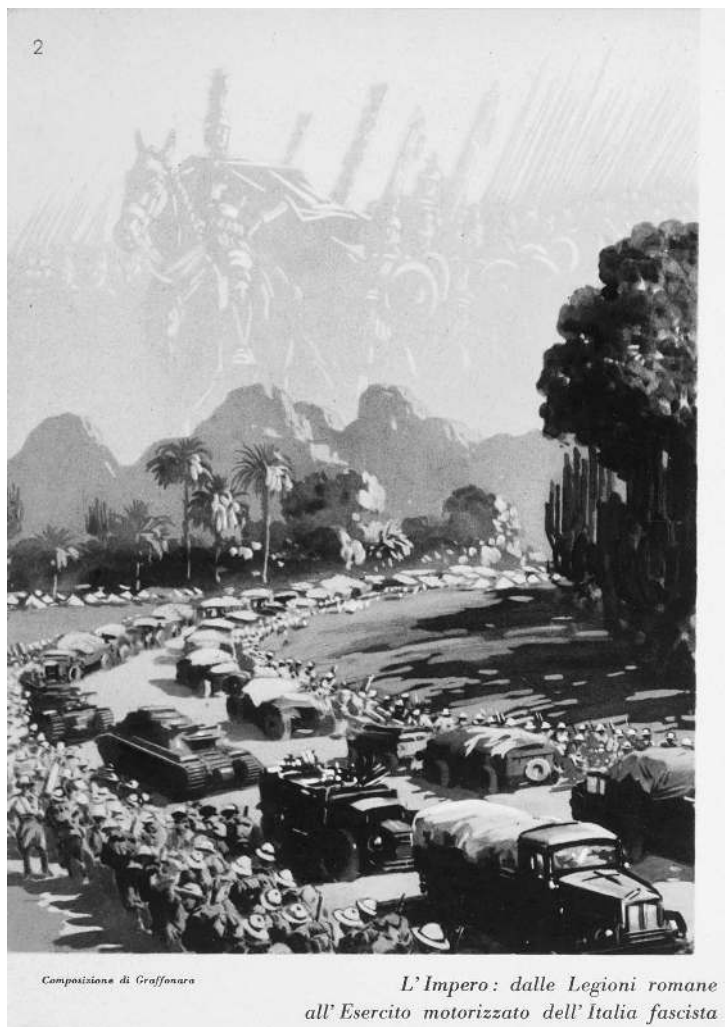


FIGURE 7.10. Artist's rendering of an Italian victory parade in Ethiopia, 1937. Source: *Volete diventare automobilisti?* (Turin: Fiat, 1937). The Wolfsonian–Florida International University, Miami Beach, Florida, the Mitchell Wolfson Jr. Collection, XB1991.385. Photo: Lynton Gardiner.

Italian and African history. Press coverage explicitly connected historical eras, describing the completed road as a “great Italian and Roman road in Mediterranean Africa,” a true “miracle of will” made possible by “an incomparable spirit of devotion.”¹³⁴ This was a road that purported to synthesize the virtues of the ancient and modern rulers of the Italian peninsula (and North Africa, for that matter), built “to truly Roman standards, with truly Fascist speed.”¹³⁵

"Perhaps no enterprise of the first twenty years of Fascism is as harmonious and perfect in its material value and its national and human moral [development]," according to the verdict of one commentator. The construction of this "modern autostrada" along the Libyan coast, "nearly two times the length of the Italian peninsula," offered "a solemn testimony to Italian civilization in the colonial world." In particular, the road demonstrated the "unanimity of wills and passions" of the Italian people and their leader; it proved the people's "characteristics of seriousness, tenacity, order and discipline, of physical health and moral integrity, of sobriety and attachment to work," while Mussolini demonstrated his "genius and magnanimity." The finished road was nothing less than a revelation, bringing "the immensity of the territory" into "the fist of empire." It promised economic, strategic, and political benefits while "simultaneously radiating civilization like blood through the arterial system."¹³⁶ Fascist propagandists argued that what Graziani characterized as the Libyan "cadaver" had been definitively animated.

The behind-the-scenes struggle for credit testifies to the propagandistic importance of the *Litoranea*. Speeches and publications repeatedly described the road as Italian patrimony bestowed upon the North African colony.¹³⁷ In official proclamations and press coverage, its designation floated freely between the *strada litoranea* or *litoranea libica* and the *via Balbia*, a testament to Balbo's transformation of the divided and impoverished colony into Italy's fourth shore. Balbo authored an article in the prestigious *Nuova antologia*, in which he traced the gestation of the project and declared it "a monument that will remain to perpetuate and to consecrate for centuries the Roman empire commemorated and resuscitated by the inflexible will and the political-military genius of Mussolini" and "one of the most eloquent" testimonials to the new Italy forged by Fascism.¹³⁸

Rodolfo Graziani was livid. The erstwhile vice-governor of Cyrenaica, who had left the colony and become governor of Somaliland in 1935 and governor-general of Italian East Africa (following the conquest of Ethiopia) in 1936, wrote a lengthy letter to the editor in April 1937. Graziani sought to correct the record and offered a history of the development of Libya. He noted that there were no roads worthy of the name when he became vice-governor of Cyrenaica in 1930, and that his administration pursued road construction and war against the Senussi simultaneously, a combination that drove up the cost of construction under his leadership. In a counter to the developing cult of Balbo, he claimed that "the idea of a littoral road that would connect the two colonies was advocated and proposed by me." The former minister of colonies Emilio De Bono and the former governor of Tripolitania and Cyrenaica Pietro Badoglio, he noted, had also expressed interest in such a road, which would have been completed by Graziani had he not been reassigned. To support his case, Graziani even quoted the

Duce's late brother, Arnaldo Mussolini, that Graziani "HAD THE WIDE AND CLEAR VISION OF THE NECESSITY OF UNITING THE TWO COLONIES, NOT ONLY WITH THE ROAD BUT ALSO WITH THE ADMINISTRATION" (emphasis in original).¹³⁹

Graziani demanded that the *Nuova antologia* print his letter and give credit where it was due. The editors communicated the letter to Luigi Federzoni, president of the Senate, who wrote Graziani to inform him that the letter would not be published because it gave the sense of too much infighting among party leadership.¹⁴⁰ Graziani's furor never became public, but the jockeying for credit testifies not only to divisions among the Fascist leadership but also to the symbolic currency of the Libyan road. The *Litoranea* was a recognized symbol of Fascist greatness. Men like Graziani were accustomed to deflecting credit to Mussolini, as leader of the movement, but sharing credit with another of the Duce's lieutenants was too much for Graziani to bear.

Publications and speeches communicated the connection between colonial road construction and Fascist glory, but it was through propaganda that the regime attracted the attention of the Italian public and the wider world. The regime assiduously documented the construction of the road through breathless updates, countless photographs, and propagandistic films. Because the Fascist regime self-consciously conceived the *Litoranea* as a monument to Fascism, they memorialized its conceptualization, construction, and use. They commissioned the architect Florestano di Fausto to build a triumphal arch in travertine limestone over the road at the thirtieth parallel in the middle of the desert. The arch thrust 102 feet into the air, serving as "a magnificent point of reference" in the flat Sirte.¹⁴¹ Like the golden spike driven into the ground by Leland Stanford at Promontory Summit, Utah, in 1869, the arch commemorated the conquest of a territory by modern infrastructure, proclaiming the end of a pre-modern age of isolation and the dawn of a new era of connection and mobility. Balbo wrote that it "breaks the millenary silence of the region, connecting the past to the present and the future," showing how "Fascist civilization, with the new imperial road, succeeds the majesty of ancient Rome."¹⁴² Another official rendering proclaimed that the arch would "affirm for centuries" the victory of Fascist modernity over "African nature. . . . It stands, dominant. . . . The arch confirms that the Italy of Mussolini has come to bring to the coast of Sirtica the greatest gift of civilization, the living wave of progress, and . . . the spiritual communion and mutual understanding among people of diverse races, languages, and continents."¹⁴³

The Fascist regime would amalgamate the will of the Duce and the sacrifice of the Italian people, film and media, and the monumental arch into a single, propagandistic production. Dino Alfieri's Ministry of Popular Culture carefully organized a tour of Libya by Mussolini to inaugurate the *Litoranea* in March 1937.¹⁴⁴

The resulting public events and propaganda film produced by Istituto Luce made Mussolini's encounter with the road an important episode in the Fascist regime's transformation of politics into "rites of collective spectacle."¹⁴⁵ Mussolini's Libyan tour saw the Duce impose himself on the internecine bickering of Fascist officials. His visit was a celebration and "endorsement" of Balbo's governorship, but it was also designed to wrest away credit, with some contemporaries and later historians speculating that Mussolini visited "to deprive [Balbo] of the public satisfaction of opening the colony's greatest single public work."¹⁴⁶

The thirty-eight-minute film *Il Duce in Libia* made automotive empire into Fascist propaganda.¹⁴⁷ It presents Mussolini's tour of the colony as a road trip punctuated by festivals, commemorations, and public parades. In the film, as he arrives in the eastern port of Tobruk, Mussolini travels into the city in an open convertible. Libyans line the roadway as far as the eye can see as the car passes beneath a banner proclaiming "VV Il Duce." In this scene, the road is a vector of power—a space dedicated to the Italian regime, its automobiles, and its deified leader—while Libyans line the road to witness the dawn of the new era. Following a flight to the eastern limit of the *Litoranea* on the border with Egypt, Mussolini, flanked by Italo Balbo, raises an Italian flag. He does so, in the words of the narrator, "to solemnly consecrate this great new work of civilization in the name of Fascist Italy." Later, when he is leaving the town of Derna, a car-mounted camera transforms roadside observers into a blur, offering the "driver's-eye" view of the road in all its twists and turns before summiting a hill and cutting impressively through a mountain tunnel. The combination of the road, the automobile, and the camera depict Mussolini and the Fascist regime as masters of mobile technologies, rendering the dynamism and vitality of the regime in celluloid.¹⁴⁸ The viewer observes multiple scenes of Mussolini and his coterie walking purposefully along the road, followed by masses of people and a crowd of Libyans running alongside. In these scenes, the *Litoranea* sorts colonizer and colonized, leader and follower, order and disorder, flattering Mussolini and the Italian colonial project around the axes of roads and automobility.

He continues by car to the Italian agricultural village at Al Abraç (Luigi di Savoia), where the viewer sees another parade, attesting to the centrality of the road space to both Italian propaganda and colonial life. Later, Mussolini travels by automobile to Roman archaeological sites, emphasizing the Fascist inheritance from ancient Rome, as well as the road and the automobile as tools of Italian tourism in North Africa. After a visit to the agricultural village at Massah (Luigi Razza), the Duce enters the city of Al Marj (ancient Barca) in a lengthy automotive column. He is greeted by adoring crowds and all the diversity of the colony, according to the narrator: "men and machines, metropolitans and natives." The Libya of the film is a colony of humble Italian agricultural settlements and

bustling cities marked by automotive parades and adoring crowds. Tying it all together is the *Litoranea*, which transforms the film from a collection of separate scenes into a coherent narrative and the colony itself from disparate towns and settlements into a unified Italian space.

On the evening of March 15, Mussolini reaches the triumphal arch, site of an elaborate nighttime ceremony. Floodlights and dramatic fire cauldrons illuminate the arch. Mussolini and his followers emerge from the darkness, walking under the arch. A closeup shows Mussolini and Balbo walking together, looking up at the massive vault and admiring its sculptures and inscriptions.¹⁴⁹ Passing under the arch inaugurated Libya's new era, and the *Litoranea* and its triumphal monument legitimized Italian claims to previously contested lands.

As had been the case with the *Croisière noire* in Paris in the 1920s, the *Litoranea* then transformed from propagandistic spectacle to experience in 1938. The regime turned its attention to expanding its claims to Libya through Balbo's program to implant twenty thousand settlers (the *ventimila*). These scattered rural agricultural settlements were unified into a shared settler society by the *Litoranea*.¹⁵⁰ The road bound Tripolitania and Cyrenaica physically and administratively as it was conceived and constructed from 1934 to 1937, linked the varied sights and commemorations on Mussolini's visit in 1937, then promised to connect hardy settlers from 1938 onward to a glorious Fascist future. The presentation of Mussolini's visit as propaganda made the *Litoranea* central to the Fascist glorification of overseas empire and the regime's attempt to raise its esteem among Italians and the world.

Italy compressed colonial developments that spanned decades in other empires into a single decade in the 1930s, particularly after 1934, in both Libya and East Africa. The Italian model of automotive empire was recognizably Fascist, as fantasies of dominance motivated the proliferation of road construction and motorization projects in their colonies, then fueled the brutal conquest of Ethiopia. In a striking contrast with the related French model of development, there was little discussion of projected benefits for Africans. Insofar as the Italians lauded roads as tools of civilization, it was to situate themselves as the heirs to ancient Rome and further their own quest for prestige, not to improve the lives of Ethiopians, Libyans, Somalians, or Eritreans. Italian automotive empire was also markedly Fascist in its colonization of a thoroughly politicized public sphere. Whereas the *Croisière noire* emerged as edification and entertainment in a broadly imperial metropolitan culture and testified to French grandeur, the Italian public sphere "worked toward" the Duce by portraying automotive empire as both symbol and instrument of Italy's imperial vocation. Colonial roadbuilding, motorization, and vehicular conquest linked colonial and metropolitan endeavors, state goals

and private enterprises, Roman and Fascist glories. In its circulation of personnel, practices, and propaganda, automotive empire was central to the integrated, systemic nature of Italian colonialism across Africa.¹⁵¹

But freighting automotive empire with such deep significance had its drawbacks. Notwithstanding its bombastic presentation, the Libyan *Litoranea* effected little lasting change. The historian Giorgio Rochat described the pride of colonial Libya, derisively, as “a drivable road without traffic.”¹⁵² No expense was spared to construct this aesthetically pleasing “black and shiny ribbon” to the highest technical standards.¹⁵³ The conceptualization itself emerged first from Fascist frustration at the lack of roads in trying to suppress the Senussi, then from the need to supply remote outposts across northern Libya. Fascist officials believed that building the road would naturally create demand among Italian settlers and would inspire metropolitan investment and economic development, but the Italian model of settler colonialism implanted mostly poor peasants in the colony. Capitalists chose more secure and reliable investments elsewhere.¹⁵⁴ Preparing empire for automobiles was not enough to make colonialism pay.

Governor Balbo soon found asphalted roads in the Libyan desert more burdensome than useful. Mussolini’s imperial adventurism led to crushing sanctions, and rising international tensions turned the Libya-Egypt border into a veritable “war zone” after 1935, requiring construction companies to pay laborers double or triple the wages that had been budgeted.¹⁵⁵ In the years after the inauguration of the *Litoranea*, the Italian state found itself locked in lengthy and costly litigation with contractors who demanded compensation for unforeseen costs created by the sanctions and international tensions. Italian courts repeatedly ruled that any such fluctuations were risks to be weathered by the contractors, not the state.¹⁵⁶ The settling of accounts after the spring of 1937 suggested that automotive empire was not a common work of Fascist will but a source of contention between the state and its preferred contractors. Barely a year after Mussolini inaugurated the *Litoranea*, public works officials requested over ten million lire to perform maintenance, with large portions of the request dedicated to resurfacing the road. The cost, the official wrote, “is justified by the considerable majority of road surface treated with asphalt and therefore the consequently considerable improvement of the general condition of the roadbed.”¹⁵⁷ As Roman-Fascist patrimony, however, the costs were justified. Herein lies the circular reasoning of Italy’s automotive empire. The *Litoranea* was good and necessary because it was a lengthy modern road. It was an expensive project because it was built to modern standards. And because of previous investments and the high standards of construction, the colonial administration had to swallow the costs of maintenance. To abandon the *Litoranea* would be to admit defeat, forsaking the Roman roadbuilding inheritance and reversing the Fascist road to modernity in Libya.

Although impressively long, the *Litoranea* was a single road, one that the Fascists deemed necessary to make Libya governable and prepared to welcome the Italian settlers who they believed would propel colonial development. Having created an empire by conquering Ethiopia, the Fascists were determined to avoid the mistakes of underinvestment and indifference that had stunted Libya for a quarter century. Italian East Africa would follow the blueprint of automotive empire from its very birth.

ACCELERATION AND CRASH IN ITALIAN EAST AFRICA

Italy had rushed toward war with Ethiopia with little planning for its future.¹ With the empire now proclaimed, what would come next? The Italian government possessed few experts versed in the lands and cultures of Ethiopia. Benito Mussolini was intensely interested in the military success and the propagandistic capital gleaned from the war, not the protracted process of economic valorization or the quotidian concerns of colonial administration.² But we must not fall into the trap of conflating the Duce with the state. Upon declaring victory in May 1936, Italy reorganized its East African territories to create Africa Orientale Italiana (AOI), comprising six governorates (four in the former Ethiopia, plus an enlarged Eritrea and Somalia) overseen by a governor-general in Addis Ababa. Italy's commitments in East Africa skyrocketed after the declaration of victory, belying Italy's putative loss of interest after the Italo-Ethiopian War. From October 1936 through December 1937, the Italian military sent 852,000 men to East Africa, complemented by a further 66,000 civilian personnel.³ Although fighting and police actions raged on in much of the former Ethiopian territories (lasting until Italy's defeat at the hands of the British in 1941), the ecstasy of military victory and the Fascist regime's declaration of a new Italian empire created a honeymoon period for ambitious planners.⁴ Colonial officials mapped out wide-ranging projects to entrench Italian rule, orient the region's economy toward Italy, and reap prestige in the international realm. Until 1934, the characterization of Italy as a "ragamuffin" or "beggar's" empire—the *impero straccione*—is largely accurate, but beginning with the Libyan and Eritrean road projects in

1934, seemingly no financial request was too large, no public works program too ambitious.⁵

Consider long-neglected Eritrea. In June 1936, Governor Alfredo Guzzoni submitted a program of roads planned and currently under construction to the Ministry of Colonies in Rome. He described the roads in question and estimated the cost for each: 91 million lire to build 275 miles of road in the western lowlands, 11.5 million lire for a further 15 miles of construction on the Asmara–Nefasit road, and so on. An official in Rome read the report and underlined the costs in blue pencil. After tallying the expenses, he returned to Governor Guzzoni's cover letter and scrawled, with evident disdain, "300,000,000 [lire]! Who has authorized them? Where did they get the funds?"⁶ The bewilderment of the official in Rome is unsurprising in the context of Italy's colonial history. For the entirety of the period between 1913 and 1936, excepting the road construction preceding the invasion of Ethiopia in 1935, Italy had spent 15.7 million lire total on roads in Eritrea. Guzzoni's plan alone exceeded the 247 million lire spent on *all* aspects of public works and utilities in the colony over the preceding twenty-five years.⁷ The rapid transformation from the "beggar's" empire to the age of unfettered colonial spending caused whiplash among many officials.

The Fascist administration of AOI between 1936 and 1941 reveals not an impoverished empire but an Italy impoverished *by* empire. Annual budget requests ran as high as 18 billion lire, roughly the same figure as total government revenue in Italy, to maintain nearly a quarter of a million troops in the restive colony and to develop its infrastructure at a breakneck pace.⁸ Outside of military spending, roads and automotive transport absorbed the lion's share of attention and funding. Italy budgeted 8.075 billion lire for road construction in East Africa between 1937 and 1941. Audits undertaken after World War II found that Italy spent 6.8 billion lire on public works in AOI from 1937 to 1941; of this, 6.1 billion, or nearly 90 percent, was dedicated to roads.⁹ Fascist Italy spent freely, enthusiastically, and profligately in AOI. The wide-ranging, ambitious investments in automotive empire pushed it to a state of "near-bankruptcy."¹⁰

Nor were roads simple tools of movement in East Africa. Colonial roads produced, in the words of the minister of public works, Giuseppe Cobolli Gigli, the "moral, political, and economic order" of empire.¹¹ The Italians expected modern roads to ground colonial power in the territory. Fleets of motor vehicles, they believed, would spur economic connections between the Ethiopian heartland and the Italian peninsula that would render the Italian empire autarkic. They quickly learned, however, that miles of roads and thousands of automobiles were not evidence of economic activity or effective rule. According to one British visitor to AOI, "The establishment of the Italian empire is in the nature of a frantic race against time, bankruptcy, and disaster."¹² Road construction created

exorbitant costs, mushrooming bureaucracy, and perils for Italian individuals and matériel that made the network of modern roads in East Africa as much a burden to the colonial state as a tool to extend its rule.¹³

Italy's automotive empire in AOI thus emerged from common programs elaborated by colonial powers in the preceding four decades. Their commitment to creating roads from the colony's birth shared much with Joseph Gallieni's program in Madagascar four decades earlier and bookends the era of automotive empire. But Italian efforts in AOI offered a particularly Fascist spin on the model. Officials there believed that automotive empire was a useful colonial form but that non-Fascist states had not pursued it with the requisite resources or vigor. Fascist automotive empire was marked by three distinct characteristics: wider speed and scope of road construction; closer collaboration between state officials, parastatal organizations, and businesses; and the conflation of roads and motorization with the material and symbolic projects of Italian colonialism. Between 1936 and 1941, the Fascist regime funded the colonial-industrial complex and integrated public and private initiatives to an unprecedented degree in an audacious program to accord with its political and military objectives. For the first time, a European power abandoned the limited, labor-intensive path of colonial development in favor of a state-directed, capital-intensive model.¹⁴ The construction of modern paved roads using state-of-the-art machinery and well-paid Italian laborers made Italian East Africa both the zenith—and nadir—of automotive empire, with every facet of the colonial state oriented toward its realization.

Planning Postwar Motorization

In lieu of planning for a post-conquest Ethiopia, Italian officials advocated road construction. And why not? The Fascists believed that they had pioneered a model of colonialism that had yielded material and propagandistic benefits in Libya and Eritrea and which proved decisive in the conquest of Ethiopia. That the invasion of Ethiopia doubled as a roving construction campaign also created a certain momentum. Building roads and increasing motor vehicle traffic accorded with Mussolini's declared principles of a "Fascist" war. Formal Italian military operations lasted until February 1937, and armed resistance by the Ethiopian *Arbegnoch* (Patriots) continued throughout the period of Italian rule. Italian fear and frustrations fueled atrocities and pogroms, and terror defined AOI, particularly until the end of 1937 under Governor-General Rodolfo Graziani.¹⁵ Nevertheless, the administration acted as if the territory had been pacified and focused on solving the transport problem with exceptional resources.¹⁶

For the self-appointed heirs to ancient Rome, roads marked the transition from warfare to colonization, from ancient Gaul and Carthage to modern Libya and Ethiopia. Italian officials argued that “with the conquest of the empire, the first fundamental problem to confront and resolve with maximum urgency was to connect the most vital and important nerve centers and ganglia of the immense territory.” Roads would allow the military to conquer areas that remained beyond Italian control, advance “gradual economic penetration” throughout the countryside, and encourage circulation and commerce between regions of the colony.¹⁷ Befitting Mussolini’s self-proclaimed “Roman passion for roads” and the blurred lines between colonial rule and metropolitan propaganda in the Fascist dictatorship, Italian officials and the media claimed that “the Duce, with that lightning action that was his secret and his everyday miracle, personally traced the primary routes of the great road network.”¹⁸ Italian officials formulated a program for a network of 2,855 miles of paved roads, most of it in Ethiopia, and over 90 percent of which was to be entirely new construction (figure 8.1).¹⁹ In September 1936, Mussolini set an ambitious timetable for the project, declaring that the entire road network would be completed by the end of 1938, with the key arteries from Asmara to Addis Ababa and Asmara to Gondar to open by June 30, 1937.²⁰ “Ex nihilo” road construction in AOI thus advanced Italy’s self-proclaimed “politics of prestige.”²¹ Italy sought to demonstrate its superiority not only in military terms but also in civilizational ones, to audiences across the globe.

Although military skirmishes and guerrilla warfare continued, the Italians positioned roads as a bridge between conquest and postwar economic growth, the infrastructure of “commerce, exchange, and agriculture in peace.”²² In reality, road construction was simply the continuation of war by other means. For a Fascist regime that glorified violence and military prowess, Mussolini declared that the construction program was to be undertaken with the same level of activity and commitment as the conquest itself.²³ Now, “a great battle, that of roads, set out and guided by the Duce,” loomed before the empire, and authors reminded the Italian public that even in peacetime, “colonization is a continuous battle.”²⁴ Beginning in the summer of 1936, the Italians sought to shift the basis for action in East Africa from military principles to economic and administrative ones, but the infrastructure and motorized mobility of automotive empire remained constant: roads of conquest would become roads of peace.

Whereas Italian officials framed roads as means to colonial ends—aiding the circulation of goods and information that would allow the colony to stand on its own without subsidies from the metropole—the reality of Italian rule in AOI saw officials pursue “a true ‘politics of the road.’”²⁵ In 1939, a hefty economic prospectus for AOI traced developments since 1936 and sought to encourage metropolitan investments. Contributors offered overviews on agriculture, mining,

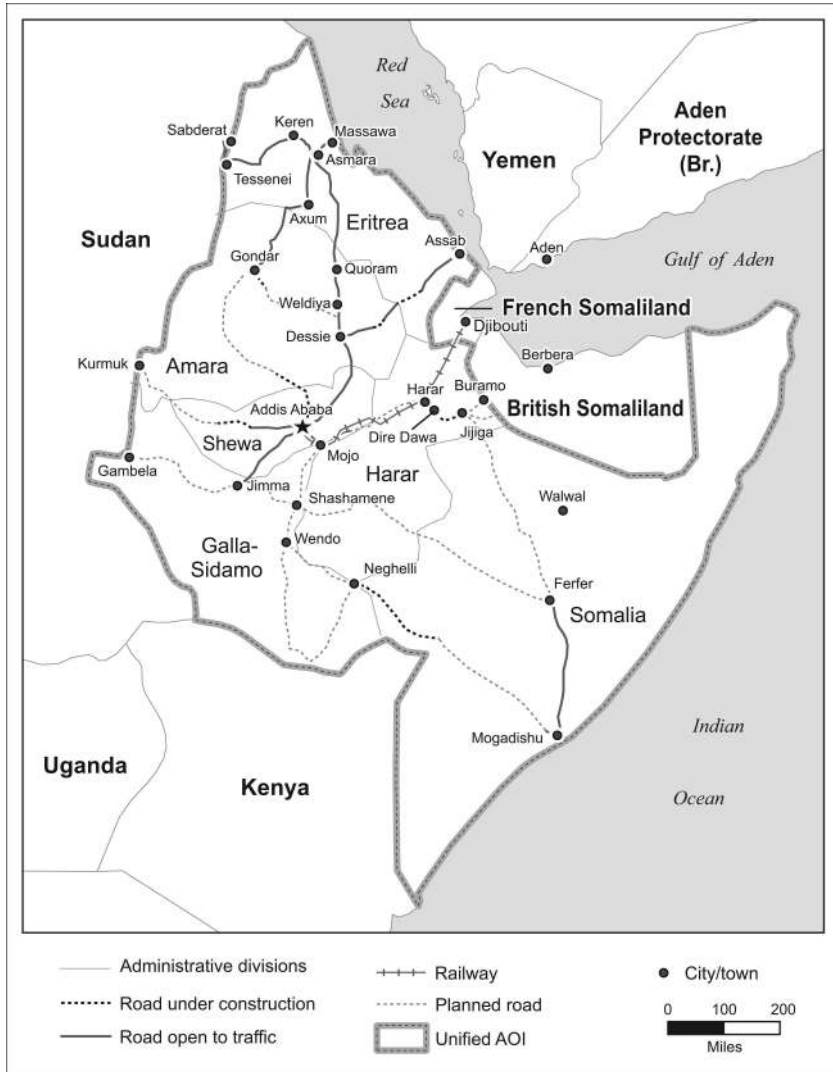


FIGURE 8.1. Italian East Africa, June 1938. Map by Di Shi.

and cotton farming, but all follow a chapter on roads by Giuseppe Pini, president of the High Council of the Ministry of Public Works. Pini wrote that after the victory, the first order from Mussolini to Marshal Badoglio was “roads, roads, roads,” constituting an inheritance from the ancient Romans who built roads at the imperial periphery for “the enhancement of the land, the development of commerce, and the welfare of the peoples.” Roads would both symbolize and actualize “the human and civilizing purpose of the conquest.”²⁶ Despite the order

that AOI stand on its own, the demands of automotive empire created lasting bonds with Rome. On May 19, 1936, responsibility for road development passed from the military to the Azienda autonoma statale della strada (AASS), which also oversaw road construction and maintenance in Italy.²⁷ Mussolini dispatched his minister of public works, Giuseppe Cobolli Gigli, to AOI in the fall of 1936 to oversee the project, indicating how automotive empire increasingly collapsed the distinctions between colony and metropole.²⁸

The Italian road network aimed at nothing less than the territorial transformation of East Africa to advance Italy's larger project of an autarkic empire centered on the Mediterranean.²⁹ The Italian geographer Paolo d'Agostino Orsini traced Italy's East African transport problem for a German readership in 1937. Preexisting Ethiopian roads, he claimed, were disconnected branches with only local effects, while roads that connected to Eritrea and Somalia were nonexistent. As a result, their effect was centripetal, rather than centrifugal. Following the conquest, the Italian task was twofold. First, the AOI administration needed to connect ports in Somalia and Eritrea to the Ethiopian Highlands. Second, the Italians needed to unify the disparate provinces of Ethiopia with one another and their administrative nerve center in Addis Ababa. What AOI demanded was not "a totality of isolated lines, but a definite system, a true road network."³⁰ To the haughty Italian conquerors, the old Ethiopia was a feudal relic, "nothing more than a mosaic of regions" defined by separatism, superstition, and caste divisions. Roads would "penetrate, conquer, and rapidly transform the geographic and political face of old Ethiopia," doing for Ethiopia what the Nile did for Egypt: uniting races and fixing people to the land, fulfilling Mussolini's vision for Ethiopia as an agricultural colony that would eventually welcome Italian settlers.³¹ Nearly all the Italian commercial farms that developed in Ethiopia were arrayed along the highways for reasons of both economics (rapid and affordable transport to cities and ports) and security (access to military assistance).³²

Roads would materialize AOI's political unification. Italy's attack on Ethiopia broke the Stresa Front, and diplomatic relations with France and Britain soured. For economic and political reasons, the Italians sought to sever Ethiopia's dependence on the French railway and the port in Djibouti. They focused on developing their Red Sea port in Assab, Eritrea—nearly two hundred miles closer to Addis Ababa than the existing port at Massawa—and linking it to Ethiopia by road to reduce fuel costs and transit time.³³ The road from AOI's capital to Assab would become "the dorsal spine of imperial communications" and consequently was built to the specifications of the metropolitan *autostrade*.³⁴ Reaching Assab required that roads traverse the Danakil Depression, described by a British official as "one of the hottest, most forbidding stretches of country in Africa"—so hot, in fact, that it was not safe to traverse during the day. Instead, convoys of

trucks would cross in the darkness of night, making the 550-mile trek from Addis Ababa to Assab in twenty-four hours. "It is hoped," wrote the Briton, "that when the whole scheme is completed it may be possible entirely to eliminate Djibouti and the Djibouti–Addis Ababa railway."³⁵ In a secret report that identified her as a British intelligence asset, Katherine Fannin, the wife of the surveyor general of Kenya who traveled through AOI by automobile, wrote, "As soon as the road and port of Assab are ready, I think the French line will be entirely ignored in the hope of ruining it financially."³⁶

Completing the road would not only reshape East African geopolitics but also would solve problems internal to AOI. Shortly after being named governor-general, Rodolfo Graziani observed that railways were too easily disrupted by "bands of Abyssinian rebels" who tore up the rails, causing catastrophic derailments. Trains were juicy targets for guerrilla attacks, and Graziani lamented that ensuring the security of railways alone absorbed the efforts of 11,500 soldiers.³⁷ Like countless proponents of automotive empire before him, Graziani enumerated the weaknesses of colonial railways. The railway and railcar were mutually dependent and intertwined, making it easy for anticolonial forces in such a large territory to disrupt supply lines, terrorize Italian officials and civilians, and delay the normalization of economic and political life. In short, after declaring victory, Italian officials believed that a sprawling, modern road network would guarantee the internal stability of AOI and its relations with Italy in a developing autarkic empire. Its construction would define colonial life in the short period of Italian rule.

Fascist Automotive Empire as a Sociopolitical System

A British observer in AOI, Edward Polson Newman, described the nature of Italian rule in understated terms: "As colonization depends on road construction, we found all energies being concentrated on this task."³⁸ The Italian administration organized every aspect of colonial life around the axis of roads. As one colonial journalist wrote, all depended on their successful construction: "the organization of civil life, the intensification of native agriculture for the purposes of alimentary autarky and export, demographic colonization, the exploitation of mineral resources, [and] the installation of commercial and industrial equipment."³⁹ Because the Italians explicitly described roads as "indexes of possession and power," the government of AOI pursued their construction with single-minded focus after May 1936.⁴⁰ Haile Larebo has persuasively argued that Italian Fascism in AOI made the domination and subjugation inherent in European colonialism

less veiled than in liberal-democratic empires.⁴¹ Fascism found its chauvinist embodiment in automotive empire, and roads shaped the political and social relations of AOI from its foundation.

The scale of the work demanded a significant labor force. Many of the 100,000 Blackshirt paramilitaries mobilized during the war to build roads stayed on after May 1936. Work was in full swing by March 1937, when 47,000 Italians, 29,070 Ethiopians, and 3,600 Sudanese and Yemenis toiled to build roads; at the height of construction in June 1937 those figures grew to 63,530 Italians, 43,720 Ethiopians, and 10,680 Sudanese and Yemenis. Large numbers once again chronicled herculean Italian efforts, as Italian authorities tallied quarries (600), the amount of rock and gravel moved (6.49 million cubic meters by the end of 1937), and the accumulated number of working days (26.1 million by Ethiopians and 22.9 million by Italians by mid-1938).⁴²

For Italian officials and the metropolitan media, the work was heroic, representing the unification of civilian and military efforts. In the southwestern governorate of Galla-Sidamo, its governor, General Carlo Geloso, proclaimed the conclusion of military operations in April 1937, which allowed his administration to focus on road construction. Governor Geloso lauded the “fraternal collaboration” of military engineers, laborers, and the Blackshirt “work centuries.”⁴³ Italian laborers, drawn from areas of high unemployment in southern and northeastern Italy, signed one-year contracts and received hardship pay for assignments in the stifling lowlands (under one thousand meters elevation) and the dangerous terrain of the highlands (over three thousand meters elevation).⁴⁴ One worker recalled that his salary approached sixty lire daily, five to six times higher than back home in Ravenna.⁴⁵ Italian officials were convinced that while workers from across the Italian peninsula constructed roads, they simultaneously constructed a Fascist national community. Images of dozens of shirtless Italian laborers hard at work, smiling and sharing in the building of a glorious empire, filled newsreels and the Italian press.⁴⁶

For Italian users, road mobility was a measure of social and political power in AOI. As military activity waned, the construction and transport firm GONDRAND operated civilian truck and bus services between Asmara and Addis Ababa. Relatively few Italian settlers arrived in AOI during the short period of Italian rule owing to ongoing security concerns and insufficient funding (Balbo’s contemporaneous settlement campaign in Libya took precedence), but the idea of demographic colonization remained powerful because of its associations with the ancient Roman agricultural settlement of conquered areas.⁴⁷ Photographs depicted Italian women (approximately ten thousand emigrated to AOI by 1940) and children peering out of bus windows on arrival in Addis Ababa, serving as visual evidence of the shift from the manly work of conquest and construction to

the domestic, civilian life of peacetime.⁴⁸ Italian successes allowed for the reconstitution of family life in the colony. Katherine Fannin, whose private report updated British officials on developments in AOI, also published a letter in the *Manchester Guardian* in July 1939 that caught the attention of Italian propagandists. They remarked that the fact that she had safely driven over seven thousand miles attested to Italy's "true conquest" of Ethiopia, which had allowed Fannin, as a "foreigner and woman, to travel freely, alone and without restrictions."⁴⁹ The presence of European women on East African roads symbolized the normalization of everyday life in AOI.

Life on AOI's roads was also heavily influenced by racial hierarchies. Fannin flattered the Italian rulers of AOI when she described "the dynamic program of road construction" and her impression of happy, peaceful Ethiopians, whom she opined had never had it so good.⁵⁰ The construction of roads themselves created social distinctions. Ethiopian and other nonwhite laborers constructed dirt paths under Italian supervision, whereas the crews that built more modern, engineered roads boasted a majority of Italian workers.⁵¹ As they had done in Eritrea, the Italians complained about the quality of Ethiopian workers, whom they characterized as "indolent by nature" and having "an innate hatred of work." The Italians claimed that Ethiopian women, "more habituated to work," and children, "who worked more for fun than nourishment," were superior to Ethiopian men. The Italians came to prefer "strong and powerful" Sudanese and Yemenis, who possessed "the sympathy of the Arab world for the Duce."⁵²

Italian propaganda depicted racial distinctions in stark terms. A 1937 film presented the construction of the road through the Danakil Desert and shows groups of African and Arab workers, many of whom are teenagers, patiently queuing for their pay. In this scene, the wise and fair Italians inculcate the values of European civilization to their submissive, childlike subjects through labor. Although the two groups were symbiotic in this paternalistic framing, the work divided Italians from their colonial subjects. Another scene lingers on the removal of large rocks. Whereas nonwhite workers wield pickaxes, performing backbreaking labor by hand, Italian workers operate hydraulic saws, their mastery of modern technology separating them from Arabs and Africans even on the same worksite. Similarly, the planning and construction of bridges fell to Italian experts and, generally, laborers.⁵³ The Italian term for engineered bridgeworks, underpasses, and retaining walls, *opere d'arte*, literally translates to "works of art." As representations of European technological mastery, they had to be designed and built by Italian hands, and the Fascists portrayed such constructions as the pride of civilization, delivered to AOI through Italian benevolence.

Meanwhile, the dirty, dangerous work of applying bitumen to the road fell to African and Yemeni workers. In one photograph a young East African man



FIGURE 8.2. Application of bitumen to the road surface following the conquest of Ethiopia, ca. 1938. Source: Società Anònima Puricelli Strade e Cave, *Lavori in A.O.I.* (Milan: Società Anònima Puricelli, 1938). The Wolfsonian–Florida International University, Miami Beach, Florida, the Mitchell Wolfson Jr. Collection, 84.2.300. Photo: David Almeida.

wearing a long coat and rubber boots wields a wand to apply viscous, sticky bitumen to create road asphalt (figure 8.2). Behind him, teams of men spread rock from wheelbarrows to fill gaps in the road surface. All suffered in the heat emanating from the application of liquid hydrocarbons and breathed in noxious fumes, making it a task for non-Italian workers. The dark-light contrast of the image is particularly striking, with teams of African men laying black asphalt on a bed of white rock, with the surrounding vegetation cast in a white aura. Both the road itself and the labor required to produce it are black, and the division between the road and the ambient environment is cast, literally, in black and white.

This photograph is unusual in that it shows the face of an African laborer. In the uneven power relations of East Africa, most propagandistic images effaced the brutality of labor and local social and environmental conditions, instead offering still-life images of anonymous Africans at work in stereotypically East African environments.

Given the importance of roads to the Italian colonial system, “the labor problem” absorbed the attention of administrators.⁵⁴ In early 1936, as workers constructed roads under military discipline amid active warfare, many complained of mistreatment. While workers were paid well (unskilled laborers earned thirty-three lire per day, three times the average daily wage for agricultural workers in Italy), the work was dangerous and their employers “exploitative.”⁵⁵ Workers on projects managed by the Italian construction company Puricelli complained of late payment, scarce and poor-quality food, and insufficient water, which Italian officials blamed on Puricelli’s poor organization and lack of cash on hand. While workers protested excessive fines and the unfair reduction of pay, military authorities saw it as a sign that “the general conditions of discipline and of performance at the construction yards leave much to be desired,” with fines and discipline as part of a salutary process of weeding out “undesirable elements” among the workers.⁵⁶

Throughout 1937, in recognition of the importance of road construction to colonial aims, Governor Graziani concerned himself with the minutiae of road labor. Yemenis working for the Vaselli Company repeatedly complained of mistreatment. In the spring of 1937, one hundred workers fled their construction site for French Somaliland. An Italian investigation blamed “colored foremen” who skimmed off rations and bartered them elsewhere to enrich themselves, then “flogged” and punished Yemeni workers who complained.⁵⁷ In June, Eritrea’s governor levied a 100,000-lire fine on Vaselli, although it paled in comparison to the profits reaped by construction companies. That summer, a further three hundred Yemenis complained of “inhumane treatment” at a Vaselli worksite, where they were “mistreated, deprived of medical assistance, and malnourished.” Graziani sent agents to investigate and confirmed the abuse. He demanded it stop, not for humanitarian reasons, but because it was “very harmful to our prestige” and would hinder the future recruitment of workers.⁵⁸

The recruitment of workers was indeed a matter of paramount concern. By the fall of 1937, many of the tens of thousands of Italian laborers had completed their contracts. The high wages paid to Italian workers and rising concerns about indecent behavior (consorting with Ethiopian women, becoming indebted to Ethiopian lenders, living in squalor) led the state to phase out Italian labor and promulgate restrictive colonial race laws.⁵⁹ The construction companies thus turned to the labor of AOI’s subject peoples. The abusive nature of roadwork and ongoing attacks on Italian soldiers and infrastructure meant that, far from advancing Italian autarky, automotive empire could not even meet its own labor demands. Construction firms continued to have difficulty recruiting workers in AOI and looked abroad. An agent for Vaselli, Tullio Pastori, ignited an international incident when he sought to recruit workers in Iran. Iranian authorities in

Tehran rejected his request to recruit twenty thousand workers, and he traveled south to the frontier with Iraq and recruited nearly ten thousand workers personally. Pastori then lied to authorities in Iraq, claiming that the men were enlisting to construct the Basra–Baghdad railway, hoping to traverse the country to Kuwait, whence they would be transported to AOI. According to Italian officials in Iran, this was “a true enlistment of slaves,” not a labor recruitment.⁶⁰ Italy’s desperation for workers was clear. As the incident illustrates, automotive empire even shaped Italian diplomacy in the late 1930s, as the Ministry of Foreign Affairs attempted to smooth ruffled feathers throughout the Middle East in 1937.

AOI’s roads entrenched Fascist labor relations. From the seat of government in Addis Ababa, Graziani monitored the situation closely and ordered the systematic, colony-wide regulation of labor that had previously seen much variation in pay and working conditions by region. He demanded price controls to forestall migration between regions to seek higher wages. He also instituted a requirement that all wages be paid only in Italian currency, inducing workers to spend their earnings with Italian parastatal organizations and private businesses to stimulate economic growth.⁶¹ Because roads were the focus of Italian efforts, Graziani’s attempt to regulate the labor market aimed to centralize control over the regionally fractured economies of the new colony. Regulating road labor was a state-building exercise.

From discrete worksites to the level of colonial administration, roads produced the political and social relations of AOI. The scale of the challenge Italy created for itself was unprecedented. According to the minister of public works Giuseppe Cobolli Gigli, constructing “a wide network of roads, with a pace that has no precedent in the colonial history of all nations, in a land without resources, without transport paths, and without any technical equipment, had to occur through difficulties of every type.”⁶² In less than a year, AASS created a network of five hundred construction yards across the colony.⁶³ At the height of work in June 1937, sixty thousand Italian workers had to be housed, fed, and provided with medical, religious, political, and educational services. To do so, Italian authorities arrayed 453 work camps across AOI.⁶⁴

The combination of roads, construction yards, and workers’ camps created a new, Italian territory. AOI existed in the same space but operated entirely differently from the preceding Ethiopian Empire, as well as the previously underdeveloped, isolated Italian colonies in Eritrea and Somalia. As Ernst Wiese observed in *Harper’s Magazine*, “the traveler in Ethiopia is impressed perhaps more by the size of the project to provide the road constructors with shelter and supplies than by the actual road-building achievements.”⁶⁵ The ambition of the Italians overawed outside observers, and Katherine Fannin took their rapid development of infrastructure as proof that “so far as the bulk of natives is concerned, the best

thing that has ever happened to Abyssinia and its inhabitants is the Italian conquest. The work performed by the Italians during the past two years is heroic and almost unbelievable. The roads alone will be a lasting monument.”⁶⁶ Governor Graziani agreed, proudly proclaiming the roads “the first great monument of Fascist civilization in AOI.”⁶⁷

For all the Italians’ boosterism, however, we must not overlook how roads forged the political and social inequalities of Italy’s Fascist empire. A meticulously framed photograph produced by the construction company Puricelli to commemorate its work offers a striking depiction of the social order (figure 8.3). The image shows construction between Dessie and Assab, where a new road runs parallel to a dirt path. The image juxtaposes two vectors that occupy the same space but serve very different purposes. A barefoot Ethiopian individual, shaded by a parasol, walks along the dirt path toward the photographer and regards the viewer. A roadside sign explicitly labels the rutted dirt path as the “mule track [mulattiera] to Bati,” what Italians mocked as “so-called” roads. The sorry state of the dirt path makes it unsuited to heavy automotive traffic. Its designation as



FIGURE 8.3. New Italian road under construction in Ethiopia alongside a “mule track,” ca. 1938. Source: Società Anònima Puricelli Strade e Cave, *Lavori in A.O.I.* (Milan: Società Anònima Puricelli, 1938). The Wolfsonian–Florida International University, Miami Beach, Florida, the Mitchell Wolfson Jr. Collection, 84.2.300. Photo: David Almeida.

a *mulattiera* identifies it, derisively, as suitable only for animals, while its use by pedestrian traffic suggests a passive East Africa stuck in the slow lane of civilization. Race, development, and forms of mobility marked the path as a definitively premodern, African space.

By contrast, the new road under construction extends behind the pedestrian's head. A flat embankment, rising to approximately six feet in height, runs parallel to the mule track. Atop the embankment, Italian workers hold tools next to rail carts. The elevation of the new road and the labor performed by Italians are meant to prove its superiority to the previous road and the pedestrians who use it. In this case, the East African pedestrian offers a perfect foil to the self-aggrandizing, masculine work of Italian construction. A permanent, scientifically planned Italian road that will facilitate motorized traffic supersedes the infrastructure inherited from the Ethiopian empire. Different civilizations, the photograph implies, move at different tempos and follow separate rhythms of movement. Although they occupy the same space, one road (and one civilization) is visibly higher than the other, and the different uses and forms of mobility demand segregation and specialization. As this photograph reveals, the infrastructural landscape created in AOI was a product not only of the technical requirements of motor vehicles but also the ideological preconceptions of the Fascist regime. Italian roads manifested and, in their demands for East African labor, produced the racial hierarchies that defined all European imperialisms in Africa but which Italian Fascism concentrated and accelerated in five years in AOI.

Fascist Automotive Empire as an Economic System

The politics, social relations, and culture of AOI's automotive empire at once shaped and depended on its economics, making it a coherent system that permeated colonial life. As noted above, the Italians spent 6.1 billion lire on roads between 1937 and 1941, but officials in Rome regularly lamented their difficulty tracking real costs. In the years immediately following the conquest of Ethiopia, the process for securing colonial funding "was not always uniform and many times, especially in cases of urgency, the local authorities proceeded in an autonomous manner," without approvals from the Ministry of Colonies.⁶⁸ For all the rhetoric regarding the potential of a colonial-scale road network to finally unify fractured East African territories and societies, the funding and construction of roads both produced and responded to a colony in which each governorate was functionally autonomous.⁶⁹ In the context of ongoing military and policing operations, all projects seemed "urgent," and, furthermore, many public works

“of considerable importance” were completed by military rather than civilian authorities. Especially during the war and following the occupation of Addis Ababa in May 1936, Italian soldiers and Blackshirt “work centurions” built many roads. Labor and material costs were thus paid from military accounts and not tracked or approved by the Ministry of Colonies.⁷⁰ The real total spent on roads exceeds even the astronomical figures listed in official audits.

As the fog of war ostensibly transitioned to peacetime normalcy in the summer of 1936, colonial officials demanded the normalization of a transport sector warped by war. The military had requisitioned cars and trucks from private companies, particularly to gather the vehicles needed for the final advance on Addis Ababa. In the run-up to the war, colonial officials complained about “exploitation” in the transport industry and “illicit speculators’ profits.”⁷¹ Like British officials in Nyasaland and Tanganyika who had complained that small transport companies distorted the transport market, the Italians worried about the inefficiency and waste of a private transport market dominated by *padroncini*, small operators whose number proliferated as Italy’s transport demands in East Africa grew immensely after 1934.⁷² During the war, colonial officials requested government intervention to “discipline” the unruly transport sector. In Eritrea, the governor required all transport companies to apply for licenses in March 1936; six hundred applied, the vast majority of which operated only two or three vehicles. The colonial administration ultimately licensed only thirty-four transport enterprises, driving the *padroncini* out of business. Following the declaration of victory in May 1936, officials in AOI declared that the time had come for the “moralization” of the transport sector to eliminate speculation and price gouging.⁷³

The moralization campaign began in June 1936. It aimed to create umbrella transport organizations overseen by the state and to strictly regulate transport companies, stipulating a minimum number of vehicles (sixty trucks) and instituting standard freight rates.⁷⁴ AOI officials refused licenses to the *padroncini*, instead awarding lucrative contracts to some eighty companies with the financial, technical, and organizational capacity to do the work.⁷⁵ Italian officials also sought to distribute the chosen operators geographically to ensure the “necessary decongestion” of the territory, balancing a system in which transport operators focused on the most remunerative itinerary: shuttling imported goods from the ports of Massawa and Assab to Asmara and Addis Ababa.⁷⁶ Organizing transport, these officials believed, was the prerequisite to achieving AOI’s interconnected political, economic, and territorial goals.

Although Fascist officials rarely needed justification to meddle in private market operations, they argued that the state had a vested interest in regulating transport because it was “perhaps the *principal economic activity* extant in all the territory of the empire” (emphasis added).⁷⁷ Road transport—not cotton or

minerals or coffee or any of the colonial products that Europeans cultivated and extracted to justify empire—was the primary economic activity in AOI. Road construction costs (6.1 billion lire) dwarfed all other investment in AOI (3.84 billion lire by May 1939). Even after the normalization and “moralization” of the transport sector, a significant proportion of those 3.84 billion lire in investments flowed to transport businesses, the profits and growth potential of which were guaranteed by a colonial economic policy designed around automotive transport. In Eritrea, motor transport comprised 38 percent of industrial companies and 69 percent of the total capital invested in the colony.⁷⁸ Just as the parastatal AASS took over road construction efforts in AOI in May 1936, the Compagnia Italiana Trasporti dell’Africa Orientale (CITAO) oversaw the colony’s vehicular transport beginning in August 1937.⁷⁹ CITAO coordinated the efforts of colonial transport operators, as well as automotive manufacturers such as Fiat, Lancia, and Alfa Romeo, attracting investment of over 60.5 million lire.⁸⁰ AASS and CITAO brought together the infrastructural and vehicular aspects of transport in the colony and worked in concert to define AOI’s economy.

The transport sector delivered Fascist politics and corporatist economics to AOI. Transport required the organization and symbiotic coordination of metropolitan and colonial officials, military and civilian authorities, administrators and engineers, state agencies and industrial producers, road construction companies and public planners, and transport companies and their respective state and private clients. These wide-ranging interests demanded what one contemporary observer termed the “organic corporative dynamism” of the Fascist state, with “its means and its moral strength, with its normative and inciting activity, with its financial interventions and vast experience in every field.”⁸¹ Italian officials thus treated the colony as a vast Fascist-corporatist “laboratory” organized around automobility. Whereas in Italy officials had to navigate around entrenched economic and political interests, in AOI the destruction of Ethiopian “feudalism,” the clear primacy of the colonial state, and the explicit hierarchy of Italian rulers and African subjects would allow the Fascist corporatist economy to bloom.⁸²

The scale of the territory, the speed and scope of planned construction, and the importance of road transport to Italy’s imperial designs required significant state interventions. For the British sympathizer Edward Polson Newman (he met personally with Mussolini in Rome before traveling to AOI to chronicle its transformation), Italy’s colonial advantages emerged both from its ability to learn from other colonial models and the Fascist monopoly on power, whereby “she can face the problem as a nation so organized that each individual endeavor plays its allotted part in the scheme of colonial construction.” Polson Newman marveled, “The work of development is being carried out as if by one great firm of contractors which draws up careful plans and estimates before putting the work

in hand, thus reducing failures and waste to a minimum.”⁸³ Similarly, German officials wrote admiringly of Italian efforts, particularly their abandonment of the capitalist pursuit of profit in colonial transport, which they argued had condemned French, British, and Belgian efforts to division and waste. In its place, by reaching “new technical heights” that implanted European highways in African colonies, the Italians showed that the proper goal of colonial transport policy was not profit but “the total development of the colonial imperium.”⁸⁴ The Fascist veneration of the state removed many of the roadblocks that had stunted road transport in other colonies.

This raises the question: how new was AOI’s economy, in thrall to transport interests, really? Mussolini and the Fascist propaganda apparatus declared the beginning of war in October 1935 and the occupation of Addis Ababa in May 1936 a historical watershed, but an examination of the transport sector shows continuities and differences in scale, not in kind. Companies such as Puricelli, Gondrand, and SICELP built roads and operated transport services in prewar Eritrea. They continued to do so during active combat operations against Ethiopia. After Italy declared victory, they received lucrative state contracts to expand their transport services and extend the road network.⁸⁵ Milan-based Gondrand invested heavily in its Eritrean transport operation in 1935 as it became clear that Italy desired war with Ethiopia, and it dominated service along the Massawa–Asmara corridor. During the war, it employed 160 white-collar professionals and 3,000 Italian laborers to operate 410 vehicles. Indeed, many demobilized soldiers stayed in East Africa to work in the lucrative trucking industry, where drivers could earn up to 10,000 lire per journey from Addis Ababa to Eritrean ports.⁸⁶ When the war ended, Gondrand continued to build roads and run trucks and buses throughout the colony, and even transported the looted, 187,000-pound obelisk of Aksum from Ethiopia to Rome, where it was displayed opposite the Circus Maximus. Similarly, Fiat boosted production in 1935 to support mechanized warfare and military logistics. Some vehicles, such as the “Officina Mobile Tipo 2” truck explicitly bridged the conquest/administration phases, serving first as support vehicles for communications and logistics officers during military operations before transitioning to vehicles of roving bureaucracy.⁸⁷ With victory declared, Fiat installed sales offices and repair garages in eight cities in AOI.⁸⁸ Transport companies and automotive manufacturers thus prepared Italy for war, actively aided the war effort, and were the primary beneficiaries of victory, suggesting continuities across the supposed rupture in 1935–36.

A cynical observer might view automotive empire as a make-work project for the metropolitan construction and automotive industries. Italy’s “beggar’s empire” had produced little industrial activity in Eritrea and Somalia, so nearly all construction materials for roads and support infrastructure (barracks,

warehouses, construction yards) had to be imported. Construction companies placed orders for prodigious amounts of lumber, iron, and cement in Italy, and shipping companies made massive profits transporting supplies and equipment to East Africa.⁸⁹ As Ernst Wiese observed when traveling through AOI, “all supplies down to the last nail must be transported by truck from the Red Sea to the interior.”⁹⁰ Colonial officials scrambled to create geological maps of conquered Ethiopian territory, seeking rock suitable to serve as roadbed, to make cement, and as building materials in their desperation to cut costs and shorten construction schedules.⁹¹ After waging a “Fascist” war of logistics, the Italian empire suffered for its logistical arrogance. Wiese wrote, “As long as the 80,000 Italians now residing in Addis Ababa and the tens of thousands stationed in the west and south depend on their mother country for food, the trucks from the seaports will carry little else.”⁹² The frenzied activity on AOI’s roads could be mistaken for responsible and lasting economic development, but the colonial administration simply lined the pockets of Italian industries with taxpayers’ money.

While the Italian construction and transport industries benefited from automotive empire, their profits were divided among numerous companies. Profits in the automotive industry were more concentrated, and no one company benefited more from the brief life of AOI than Fiat. The July 1936 census of motor vehicles found that among private transport companies, foreign trucks outnumbered Italian ones 4,439 to approximately 3,000, while Fiat’s rapid production of trucks in late 1935 meant that 75 percent of the 7,000 trucks used by the military were manufactured by Italian companies. The colony’s “total lack of railways” (excepting the French-owned Addis Ababa–Djibouti line) and the centrality of truck transport made the administration desperate for an influx of vehicles.⁹³ Fiat had lobbied the government as early as 1929 to close off imports of foreign vehicles to Eritrea and Somalia, earning the fury of the minister of colonies Emilio De Bono, who noted that Fords in particular were more robust and suited to colonial needs, while Chevrolet trucks were barely half the price of Fiats.⁹⁴

Corporatist imperial economics and Fascist dreams of autarky would buoy the fortunes of Fiat and other Italian producers by shielding them from competition on the global market. The invasion of Ethiopia led to international sanctions and new taxes and restrictions on metropolitan fuel use to sustain automotive warfare in East Africa, exacerbating the ongoing effects of the Great Depression and shrinking the metropolitan consumer market for vehicles.⁹⁵ Fiat’s material and moral support for empire more than offset the loss. As Gian Luca Podestà has shown, as war planning ramped up in 1934–35, Fiat’s revenue grew 20 percent, its labor force by 25 percent, total vehicles produced by 15 percent, and exported vehicles by 34 percent. Most exports went to East Africa, where nearly eight thousand vehicles landed in 1935, quadrupling the previous year’s total.⁹⁶

Italian exports arriving in Eritrean ports tell the story of automotive empire: 25 vehicles arrived in 1933, followed by 59 in 1934. By 1937, that number had jumped to 9,500 (a total value of 357.6 million lire), augmented by a further 4,056 motorcycles.⁹⁷ In total, 30,000 Italian vehicles entered the colony between 1935 and 1938.⁹⁸

One advantage of the Fascist-corporatist system, according to its boosters, was its efficient management of national resources. Whereas officials in the French automotive service complained of varied makes and models, making it nearly impossible to maintain and repair the colonial automotive fleet, the narrow range of models and the dominance of a few manufacturers meant that Italian industry and the colonial administration created colonial synergies that theoretically benefited both parties. The combination of state protectionism and participation in CITAO bolstered Fiat's revenues, which grew from 850 million lire in 1934 to 1.05 billion in 1935, 1.4 billion in 1936, and just short of 2 billion in 1937. Motor vehicles made up the highest value of Italian exports to empire from 1935 to 1938. But because the state financed those exports, there was no corresponding improvement in the national balance sheet.⁹⁹

As these figures suggest, Italian colonialism in East Africa was a gift to the metropolitan construction and automotive industries. The Fascist regime associated *padroncini* with unsavory methods and illicit profiteering, but it was the large businesses invested in automotive empire that got rich off Italy's imperial project.¹⁰⁰ As Haile Larebo writes, "Construction and transport industries were bonanza investment areas during the occupation due to their low risk, high turn-overs, and state subsidies."¹⁰¹ Because the colonial economy operated through large parastatal organizations, the state was the dominant force in investment, and it directed funds to corporations deemed economically and politically reliable. Thus, the varied sectors of automotive empire absorbed the bulk of colonial finances and energies in AOI. Road construction and motorization were not mere aspects of the economy or politics in the short period of Italian rule in AOI. The automotive empire they created *was* the colony's economic and political system.

The Outcomes of Automotive Empire

But did it work? Italian officials claimed that their investments yielded quick dividends. They lauded the new Asmara–Addis Ababa "dorsal spine" as a tool of economic transformation that would lower transport costs and increase the speed of transit by allowing large trucks to pull multiple trailers on the East African *autostrada* when it opened to heavy traffic in early 1939. As a result, each truck would multiply its freight carriage, reduce fuel consumption, and absorb

less damage, decreasing maintenance costs.¹⁰² This was the desired outcome of building colonial roads to “new technical heights.” Indeed, the minister of public works Gigli reported to Mussolini in early 1938 that freight costs were already falling rapidly. In fall 1936, it cost 700 lire to transport a quintal (100 kilograms / 220 pounds) of goods from Massawa to Addis Ababa; by early 1938 the cost had fallen to 220 lire; Gigli estimated that by June 1939, the shorter route from Assab to Addis Ababa would cut the rate to 50 lire.¹⁰³ According to Gigli, “this deflation of transport costs,” which saw cost per quintal fall by 70 to 90 percent by late 1938, “is a fundamental element for the life of the empire.” By the summer of 1937, three hundred trucks made the journey from Massawa to Addis Ababa daily, carrying fifteen hundred tons of goods, more than the French railroad to Djibouti could handle.¹⁰⁴ Italian officials justified inflated construction costs by arguing that the growth of the colonial economy over the long term would warrant the initial expense.

The single-minded focus on road construction and transport certainly reshaped East Africa. Edward Polson Newman marveled at how once-sleepy Asmara grew tenfold from the prewar era, a boomtown made by automotive empire.¹⁰⁵ He observed, “Asmara was a blaze of light, a cloud of dust, and an incessant rattle of motor transport,” offering a bit of frontier romance and pulsing energy “reminiscent of Johannesburg after the South African War.”¹⁰⁶ According to a British official stationed in Asmara, notwithstanding Italian claims of pacification, Italians in the colony endured “what is still a hostile atmosphere, and whose only compensation has been an opportunity to get rich quickly.”¹⁰⁷ AOI thus approximated previous frontiers of colonial settlement, from South Africa to Australia to the American West. The colony attracted all manner of parasitic actors eager to benefit from the largesse of the Italian state in this “economic Wild West,” funneled into AOI by construction and transport companies.¹⁰⁸ Ernst Wiese related the story of the small town of Weldiya, which lay at the crossroads of the north–south axis between Addis Ababa and Asmara and the east–west road from Gondar to Assab. There, a small hotel restaurant, nothing more than “a wooden shanty, where tent flaps served as doors, and packing-cases made the bar, tables, and chairs,” served an endless stream of Italian soldiers and workers. “The sales of wine, crackers, and canned goods,” Wiese wrote, “far exceeded receipts in the hotel on the Riviera which the proprietor had sold before moving to Ethiopia.”¹⁰⁹ In economic terms, AOI’s automotive empire was a frontier of state protection and capitalist exploitation simultaneously, allowing a select few Italian individuals and companies to profit from the crash modernization program.

Outside observers saw what they wanted to see in AOI’s automotive empire. The British apologist Edward Polson Newman found much to admire on AOI’s

roads, where he bought into the myth of a modern Italian empire devoid of the violence and abuses of Fascism. From Asmara to Adi Ugri, he wrote, "the road surface was admirable and the speed of the car fast. Where possible cactus and aloes were planted along the roadside, and everything connected with the road had a brand-new appearance." The Briton marveled at the scale of Italian ambition, their "pioneering spirit," and the sense that Italians "seemed to have boundless energy." He observed that at a roadside restaurant filled with truck drivers, "there was no lingering over drinks or anything else after the meal was finished. There was work to be done." Although generally sanguine about the prospects of Italian rule in East Africa, Polson Newman concluded, "While Italy's new African territories must continue for some time to be a heavy liability to the mother country politically, strategically, and economically, they will gradually become a powerful asset unless unforeseen circumstances occur."¹¹⁰ The sheer ambition of the automotive project won over many in both Italian and foreign circles. The burst of construction seemed a justifiable investment to realize a bright future for the Italian empire.

However, some pointed out potholes on the colonial path to glory. In ungarded moments, colonial bureaucrats and technical personnel admitted their doubts. Upon Ernst Wiese's arrival in Addis Ababa, an Italian economist confided, "This country is much too big for us," a statement Wiese noted "I was to hear many times during my travels."¹¹¹ In the realm of imperial geopolitics, "size mattered," as Charles Maier has written, and the prestige-obsessed Fascist regime swaggered about the global stage.¹¹² But the victory was pyrrhic and left Italy with an overwhelming "superfluity of territory" that "for every fertile acre" saddled the invader with "ten times as much in dangerous highlands or malaria-infested wastes." The size of AOI (nearly six times larger than Italy) became "a source of insecurity from native attacks" and forced the colonial regime to conquer and police remote areas and build lengthy roads through "areas that can never be of real significance."¹¹³ Inflated construction costs averaged well over one million lire per mile of new road, demonstrating that "size mattered" for more than imperial prestige.

Road construction filled a void created by poor Italian planning. Lacking any real post-invasion plans for rule or development, the Italians built roads because they understood Ethiopia so poorly. Whereas Italian officials duly followed the Duce's hand-drawn plan to develop AOI's road network, Polson Newman admitted that "the more we traveled in Italian East Africa, the more we realized how much was still indefinite." Italian mapmakers worked feverishly to fill voids of basic knowledge, where "hitherto the only existing maps of remote districts resembled the ancient Roman variety, wherein all unexplored African territory was marked '*Hic sunt leones*!' [here are lions]."¹¹⁴ The construction of roads gave

the impression of progress and activity while Italian officials scrambled to gather knowledge. But it also reflected their faulty belief that technology and mobility inevitably created progress. Modern infrastructure and motorized movement across the massive territory, they believed, could not help but effect the transition from “feudal” Ethiopia to modern Italian colony.

Although roads staked a material claim to East African space, they were not clear pathways of colonial power, and Italian authorities quickly learned that declaring victory was not the same as controlling Ethiopia. The fight against Ethiopian guerrillas required 88,000 Italian soldiers and 125,000 Askari in AOI at the beginning of 1938; by June 1940 the number of Askari ballooned to 200,000.¹¹⁵ Although colonial maps depict a massive bloc of land labeled *Africa Orientale Italiana*, an accurate map of Italian sovereignty in Ethiopia would approximate the map of major roads between population centers—thin lines of Italian authority surrounded by vast tracts of contested territory.¹¹⁶ Polson Newman expressed his sense of the “high degree of public security” while traveling on the roads of AOI but confessed that the threat of “brigands” remained, and the fact that “all transport drivers carried carbines, and road workers had arms at their camps in case of emergency” indicates that roads remained sites of potential violence.¹¹⁷ Katherine Fannin’s report corroborated this state of affairs, as she noted that “at night the roads are reported, even by the Italians, to be quite dangerous” in Addis Ababa and the surrounding Shewa governorate.¹¹⁸

The heavy investments in automotive empire were a double-edged sword. From the roadside restaurant owner to the Agnellis and Pirellis, many Italians profited handsomely from state contracts and captive markets. But the metropolitan balance sheet suffered. While in Addis Ababa, Fannin dined with the governor, Prince Amadeo, Duke of Aosta, who replaced Graziani in 1937. Fannin paraphrased his approach to the colony: “The Italian government is giving the new Empire very temporary unlimited help.” The desire “to make Italian East Africa self-supporting” produced “feverish activity” everywhere.¹¹⁹ The Fascist regime had pitched the conquest of Ethiopia as the dawn of a new age of Eurafrikan autarky, with Italy lording over the Eastern Mediterranean and East Africa as a vast hinterland. Instead, policing, administering, and developing AOI aggravated, rather than solved, Italy’s economic problems.¹²⁰ The British, who carefully monitored developments to protect their East African interests in Sudan, Kenya, and the Red Sea corridor between the Suez Canal and Aden, remarked in 1937 that “the Italians are spending money like water. There are few exports but gigantic imports of wine, comforts, and even luxuries.” To entice Italians to work in AOI, companies paid wage premiums, “and the outpouring of currency is enriching natives who sell anything to the well-paid Italians.” At the root of the economic quandary lay “vast expenditure on expensive roads made with Italian

and not native labor.”¹²¹ For the parsimonious British, the financial struggles of the new Italian Empire brought a measure of *schadenfreude*.

The conquest and administration of East Africa began to demand “exceptional” financial sacrifices from Italian citizens.¹²² Colonial officials imported wheat to feed the Italians working in the colony (whose number fluctuated between 250,000 and 500,000 after 1936), consumer products ranging from shoes to sardines, and all industrial equipment and supplies. The scale of the colony’s dependence on the metropole was staggering. In 1938, AOI imported goods worth twenty times what it sent back to Italy.¹²³ The insatiable demands of automotive empire for labor and materials created a permanent imbalance in colonial finances, while the billions of lire pouring into AOI set off massive inflation in the colony, further raising the cost of doing business while creating widespread misery as real wages declined for non-Italians.¹²⁴ For still-poor Italy, “a state with an imbalanced budget” and closer in living standards to Spain and Portugal than France or the United Kingdom, “the conquest of an empire was an expensive luxury.”¹²⁵ Indeed, as early as the fall of 1937, colonial officials proposed “some measure of austerity after letting the money flow.” When Fannin transited through Rome in December 1938 on her journey from East Africa to England, she noted that “the drain of the East African expenditure is felt amongst all classes.”¹²⁶

Italian roads in East Africa were not merely an infrastructure built without accompanying plans for agriculture or mineral investment. Rather, their modern, metropolitan standards made them an ongoing financial burden. The otherwise-impressed Polson Newman described the paved roads as “a remarkable piece of civil engineering, but their length is a source of weakness and involves heavy expense, apart altogether from the initial cost of construction.”¹²⁷ Roads became representations of Italian grandeur and *romanità*, but the application of bituminous surfaces across thousands of miles increased maintenance costs rather than minimizing them. Evelyn Emmett, another British traveler in AOI, wrote to the Foreign Office that “one cannot help feeling that in some cases the Roman zeal for road building has outrun any practical value.”¹²⁸ Road construction was all-encompassing, and Italian officials complained that the roadbuilding program took precedence over all other projects, including addressing the acute housing shortage for road workers.¹²⁹ For all of the metropole’s financial support of East Africa, the Italian colony suffered shortages of everything from labor and food to lumber and cement, and scarcity drove up prices of materials and services, further impoverishing the metropole.¹³⁰ Polson Newman described the “constant traffic” of trucks as a sign of Italian vitality. But when we consider that their cargo was often either fuel drums or casks of bitumen, roads and motor transport existed largely to support themselves, not to advance lasting economic development or improve administrative efficiency.¹³¹

Overbuilt in technical terms and underwhelming in its political and economic effects, the road network, despite its apparent success, became a source of weakness. "Constant traffic" and washouts from heavy rains led many colonial officials and military officers to request funds to conduct maintenance earlier than expected.¹³² In 1937, the British consul R. Eldon Ellison wrote that a section of road between Harar and Dire Dawa in eastern Ethiopia was in "a dreadful condition" despite near-constant work. "When I came here in early July," he wrote, "only the foundations of large stones" had been laid. "It was completed and opened to traffic in August; already in October it is in a very bad state and will have to be entirely relaid." This created the "vicious circle" of Italy's automotive empire: "at a given moment the traffic is destroying [the road] faster than the available man and material can repair. To quicken the work requires more men and more material, thus increasing the traffic, increasing wear and tear, and so on."¹³³ In the fall of 1937, Governor Graziani railed against transport's emergence as the "the pivot of the economic structure." The creation of CITAO that August represented an attempt to rein in costs. The transport industry, Graziani argued, had been entirely warped by the war economy. He thundered that speculators leached off the Italian state and impoverished the colony, without reinvesting their profits in its development.¹³⁴ Roads and transport companies were foundational to AOI's colonial system from its creation in 1936, but their hypertrophy strained the state. The vast distances traveled and the costs of road construction and maintenance and purchasing, fueling, and maintaining vehicles raised the economic burden of administering AOI proportionally.

Perhaps these costs could have been justified as temporary investments in long-term autarky, as colonial strategists had hoped. The material demands of automotive empire, however, made Italy ever more dependent on global trade. Graziani diagnosed the root of the problem: "Transport means petrol. . . . Petrol for the motherland is the equivalent of gold." Graziani observed that 13,680 vehicles passed through Asmara daily, while the colony remained entirely dependent on fuel imports.¹³⁵ AGIP desperately prospected for oil in East Africa, and Italian officials attempted to develop biodiesel to reduce dependence on foreign imports, to no avail.¹³⁶ The staggering array and immense volumes of globally sourced materials needed to sustain automotive empire doomed it as a vehicle of imperial autarky.

In particular, the Italian desire to capture all East African trade at their Red Sea ports in Massawa and Assab failed spectacularly. The British consul in Addis Ababa, Knox Helm, reported that for all Italy's geopolitical and economic desires, AOI remained "in slavery to Djibouti."¹³⁷ As late as 1938, colonial officials admitted that the supply of Addis Ababa continued to depend "nearly entirely" on the French port.¹³⁸ Although the Italians believed that they would sideline Djibouti through

road construction, Helm noted that this would exchange one problem—freight charges on the Addis Ababa Railway and port dues in Djibouti—for a far larger one: dependence on foreign steel, oil, and rubber to supply their massive fleet of motor vehicles and maintain the roads.¹³⁹ In their zero-sum framing of world affairs, the Italians went to “extraordinary lengths in their determination to starve out the Djibouti railway.” One British official observed, “they are wasting far more on petrol, fuel oil, and lorries than they would by paying the admittedly rather exorbitant prices charged by the railway.”¹⁴⁰ The Italian autarkical scheme ironically enriched the French company and bolstered French imperial interests.¹⁴¹ Polson Newman described how “everybody in Djibouti was suffering from too much prosperity,” as “the use of the port for transit of large quantities of supplies for the Italians had completely changed the life of the whole town.” For all the rhetoric of imperial competition, the French and Italians became symbiotically linked through automotive empire: the French agreed to allow Italian trucks to enter Djibouti, so long as their operators did not wear military uniforms or carry firearms.¹⁴²

Although the rapid construction of a network of paved roads gave the impression of the final realization of the theoretical model of automotive empire elaborated by other colonial powers in the preceding decades, the Fascist political system and corporatist colonial economy merely obscured and exacerbated its eternal challenges. Roads and motor vehicles were expensive to build and maintain in colonial territories thousands of miles from metropolitan Europe, and such developments rarely paid for themselves by encouraging economic activity. As a result, the Italian automotive empire did not engender economic growth in either AOI or the metropole. Rather, it took state funds and reallocated them to a few chosen companies such as Fiat, Puricelli, and Gondrand through the monopolistic parastatal organizations AASS and CITAO. Nor did it advance the political interests of the Italian regime, whether in administering AOI more effectively or by leading to a desired state of imperial autarky. Military and policing operations never ended in Ethiopia, while road construction only increased Italy's dependence on imperial rivals and global trade. Modern Italian trucks gliding atop East African *autostrade* looked and felt like progress, but ultimately, the decades-long European pattern of automotive empire existing only to sustain itself continued in AOI, only at much higher cost.

Italian automotive empire artificially stimulated temporary hyperactivity in AOI. It was followed by a dizzying comedown and the queasy search for sobriety and normalcy. Upon the declaration of victory in May 1936, the Fascist regime approved billions of lire in spending on roads and motor vehicles, justifying the binge as investment in the infrastructure that would jump-start economic growth, while employing tens of thousands of Italian laborers and boosting the

fortunes of transport-related industries. The rapid influx of Italian currency distorted the colonial economy, creating wealth for those industrial patrons and various others, from roadside restaurateurs to the French port of Djibouti. Barely a year later, by the fall of 1937, Governor Graziani was imploring the Italian residents of AOI to conserve fuel, criticizing their loss of “pioneer mentality,” and demanding that they walk in urban areas rather than drive.¹⁴³ Even those companies getting rich off of Italian roads came to believe that a secondary network of simple paths, “infinitely less costly than the roads,” was needed to serve East Africa, particularly outside the cities.¹⁴⁴ With costs mushrooming and the initial rush of enthusiasm for automotive empire waning only two years after Italian troops paraded through Addis Ababa, Mussolini himself directed AASS and CITAO to focus on simple, earthen paths constructed at the lowest possible cost, to limit motorized transport to that only truly necessary, and to use carts pulled by livestock when possible.¹⁴⁵ Even Fiat, whose revenues more than doubled in three short years thanks to their leading role in automotive empire, adopted an ascetic posture. Their display at the 1938 Milan Fair, which only two years earlier had engaged in a Dionysian celebration of motorized warfare, instead staged an abstemious exhibit organized around the theme of autarky.¹⁴⁶ The spectacle of Italian automotive empire rapidly became a mundane, even reserved recognition of its limits.

The Italian exuberance for automotive empire raises the question: was there something innately or latently fascistic about automotive empire as an imperial form? Scholars have long probed the relationship between fascism and colonialism, and in particular the continuities of crypto-fascist overseas colonialism and the actions of Nazi Germany in Europe.¹⁴⁷ The Fascist empire inaugurated in 1936 in AOI *was* automotive empire: a heightened, accelerated, comprehensive version of projects undertaken across colonial Africa in the preceding decades, especially by the French. The scope, speed, and cost of road construction and motorization in AOI differed in scale from those preceding models, but not in kind. However, the quantitative difference between Italian efforts and those of other colonial administrations—the sheer volume of resources, labor, and administrative energy invested in the capital-intensive form of development—was so vast as to make Italy’s short-lived automotive empire qualitatively different. Whereas even the most enthusiastic proponents of automotive empire in French, British, or German colonies had described roads and motor vehicles as tools to realize specific political or economic ends (however broadly construed), the Italians fetishized statistics of road mileage and vehicle counts not as mere symbols or indexes of power, but as power and prestige itself.

The Fascists shared with other colonial powers an ideological connection between roads and civilization and an understanding of the automobile as an

icon of modern European prowess. But they amplified these shared beliefs by positioning automotive empire as the blueprint for a Fascist “alternative modernity” to break away from tired, outdated models of empire and the decadence of Western Europe’s liberal-democratic great powers. Automotive empire embodied the Fascists’ modernist program to redeem the Italian people and reconstitute their rightful imperium, as well as symbolic proof that they were worthy inheritors of the glorious Roman past.¹⁴⁸

But such sweeping framing must not obscure that for all the geopolitical and epiphanic potential accorded to automotive empire by the Fascists, every construction project, every delivery put bodies in motion and shaped colonial relationships. Automotive empire was as much a social system and a lived experience as a mode of colonial development and governance, and many of the abstract values celebrated by fascists across Europe—hierarchy, mastery of the self and other, violence, domination—had suffused European automotive culture and imperialism alike since the late nineteenth century.¹⁴⁹

A final glimpse of the all-encompassing yet mundane experience of automotive empire can be found in the experiences of a Florentine woman, Jolanda Rapaccini-Somovigo, the wife of a white-collar employee of an Italian road construction firm. In 1940 Jolanda’s husband, Stefano, greeted her at the port of Massawa in his automobile, whence they drove nearly a thousand miles to their quarters in Jimma, in southwestern Ethiopia. Their drive to Jimma was “a dream” made possible by “many, many kilometers of a beautiful and well-maintained road that sometimes made me doubt that I was in Africa. How much they must have worked to create this gigantic ribbon in such a short time!” As they climbed steep, serpentine roads to the Ethiopian Highlands, she admitted, “I know absolutely nothing of engineering, but I look, I look, and I think this is a magnificent thing, a work of Titans.”¹⁵⁰ The Fascist regime’s framing of Italian virtues in metropolitan propaganda, as well as the crystallization of those virtues in roads, had certainly trickled down to inform public opinion.

For the automotive couple, the roads themselves memorialized Italy’s sacrifices and triumphs. They paused at the roadside to lay flowers on the tombstones of Italian men who died building roads for “the work of civilization.” Although their lives had been lost, the road “will remain,” connecting those lost to their ancient Roman forebears as “superb examples of legionaries, of pioneers.” When they finally arrived at the construction complex that would be her home until AOI collapsed in 1941, she settled into a clichéd, romanticized version of colonial life. She tended her garden and sat out on the veranda in the afternoons, where two Askari waited on her. Italy declared war on Britain and France on June 10, 1940, and as fighting in East Africa ramped up later in the year, the colonial administration called up the construction company’s workers and employees for

military service, leaving Rapaccini-Somovigo and her husband in Jimma with only three Italian employees. By the spring of 1941, British troops had overrun Italian Somalia, and Prince Amadeo declared Addis Ababa an open city. Roads of Italian conquest now became paths of exodus, and Jolanda watched countless vehicles filled with Italian men and arms flee westward from the capital. Determined to do her part, she posted herself at that quintessential site of Italian colonialism in East Africa—the crossroads—and set up a small roadside stand, where she served coffee, lemonade, and bananas to her countrymen. Behind the Italians in automotive flight were thousands of Ethiopian refugees on foot.¹⁵¹

Even in this unsettled atmosphere, Jolanda maintained her routine, taking her infant daughter, born in Jimma, for walks. As had been the case since the Italian war of conquest, the road remained a place of encounter. She wrote, “Often we would meet native women on the road, poor Galla women deformed by fatigue. . . . They linger, not daring to approach, but look at my beautiful girl and laugh and talk.” With Italian troops in retreat and women forced to evacuate the colony in the latter half of 1941, Jolanda took to the road once more. She looked out across the horizon to see Italian cars on modern roads and described them as the equivalent of horses and wagons in the American West. She imagined herself and her countrymen, similarly, as pioneers traveling to the frontier “to colonize and to make so many lands fertile.”¹⁵² Even in flight and defeat, she described automotive empire in East Africa as both a romantic, personal adventure and a national project to realize Italy’s inherited imperial destiny. The title of her unpublished memoir, “Flowering Roads and Barbed Wire,” voices the disjunctive nature of her colonial experience, wherein warfare, flight, and violence were unfortunate disruptions of her East African idyll. For Africans in AOI, they were the very essence of automotive empire.

THE LIVES AND AFTERLIVES OF AUTOMOTIVE EMPIRE

Determining an institution's strengths and weaknesses often requires an outside evaluation from a disinterested observer. Enter . . . the Nazis? In 1943, the German Office of Colonial Policy audited automotive empire. Its report was not exactly impartial, as the office's charge was to study colonial matters in preparation for the administration of future overseas colonies, with a particular interest in the former German colonies in Africa.¹ Nevertheless, Nazi officials brought a critical eye to the technological and infrastructural development of African colonies, offering contemporary evaluations of the outcomes of European colonialism.

After evaluating nearly sixty years of colonial rule, including two decades of intensive development in the interwar years, the German technocrats reported disappointing results. The opening line of their report presented a thesis that had become universally accepted among European officials: "A sufficiently developed and efficient transport network is a necessary prerequisite for the economic assimilation of Africa to Europe." Taking a holistic view, Nazi officials wrote, "We consider the African space not simply as an object of exploitation, but the natural complement of the European economic space." They surveyed various transport modes before concluding that rivers and rails "can only capture narrow strips of territory." Thus, "the task of territorial development falls to roads with motor vehicles . . . the given means for the first valorization and economic development of yet-untapped areas."² Nazi officials surveying Africa from afar came to the same conclusions as had countless officials on the ground. Roads and motor vehicles were the most effective and reliable tools to extend European power to the African interior, advancing colonial enterprises of territorial control, economic

development, and administrative efficiency. From the founding of Joseph Gallieni's regime in Madagascar to the Nazi audit, via a range of actors including Paul Graetz, André Citroën, Rees Jeffreys, Inaco Conforzi, and Benito Mussolini, automotive empire was the solution to Europe's colonial transport problem.

As this book has shown, automotive empire made European progress materially measurable. Miles of roads and censuses of motor vehicles became indexes of colonial development. The Germans calculated an overall African road network of nearly 360,000 miles in length, well over half of which they defined as "all-weather roads." Over 560,000 automobiles were dispersed across the continent, supplemented by nearly 140,000 trucks and 61,000 motorcycles. The German statistics, organized by distinct colonies and empires, corroborate the argument of this book. The French demonstrated the longest-lasting, deepest commitment to road construction and motorization that spanned the era of automotive empire. They developed the longest road network, at over 95,000 miles, and French territories approached 250,000 total motor vehicles. While Italy's network was comparatively small numerically, at only 4,600 miles, we have seen how the speed and scale of its construction was meant to jump-start a lasting form of automotive empire inspired by the French model, a project that brought Italy's empire to its brutal nadir. The Portuguese (over 29,000 miles) and Belgian (over 43,000 miles) share of roads lagged that of France, a reflection of their smaller landholdings. At first glance, the British road network is sizable, totaling over 86,000 miles and trailing only the French. Indeed, if we were to include the 87,000 miles of roads in the Union of South Africa in the British total, the British territories in Africa would possess the longest road network.³ However, as a self-governing dominion with a representative (albeit racially exclusionary) government, South Africa would be more aptly compared with the United States or Australia—similar motorized societies engaged in settler colonial projects and state centralization—not colonies such as French West Africa, Italian East Africa, or British Nyasaland, for which automotive empire became paradigmatic.

Whatever the total length of the British road network, we have seen how British colonial administrations worked to contain the volatility of motor vehicles and roads across Africa. Further, seasonal roads, at over 60 percent of total road length, constituted a much greater proportion of the network in British territories than in the French or Italian. The seizure of former German colonies and their administration by France and Britain as mandates—particularly Togo and Cameroon, both of which were divided between the two powers—revealed divergent imperial models. Regarding Cameroon, German officials remarked on France's responsible stewardship of inherited roads, whereas the British "deliberately neglected" roads to protect Nigeria and its rails from unwanted competition.⁴ When quantitative and qualitative measures are combined, and British

roads are contextualized within their larger strategies and systems of rule, the distinction between so-called Latin Africa and the skeptical British models is a meaningful one.

The continent's tally of over 750,000 vehicles and 360,000 miles of roads, most of which were imported or built in the 1920s and 1930s, testifies to the energetic commitment of European powers as they pursued automotive empire. But as a project aimed at the economic valorization and political administration of rural African hinterlands, automotive empire was a failure. A close reading of the data proves that, on balance, roads were for areas of European settlement, and motor vehicles were for white people. With almost 300,000 automobiles in the late 1930s, South Africa alone possessed over half of the continent's cars, as well as nearly one-quarter of its roads. The French possessions of Algeria, Tunisia, and Morocco, with a combined population of nearly 1.5 million European settlers, added another 58,000 miles of roads, 160,000 automobiles, and 40,000 trucks. Taken together, South Africa and French North Africa left barely 100,000 automobiles for the remainder of the continent, and even those clustered in areas of white settlement (17,500 automobiles in Northern and Southern Rhodesia, 16,512 in Kenya and Uganda).⁵ Although roads filled colonial territories, they were often peri-urban and limited by the exclusionary designs of settler colonialism.⁶

It is little surprise, then, that according to observers, Europe's colonial endeavors had produced few appreciable effects by 1940. The Ugandan soldier Robert Kakembo, who served in the King's African Rifles during World War II, wrote that before the war, "most Africans had never seen more than three Europeans in their life—the District Commissioner, the local missionary, and perhaps the District Medical Officer." Meanwhile, "motor vehicles and other modern machines of transport, except for a bicycle, were objects of curiosity."⁷ As late as 2009, over 60 percent of rural African residents still lived more than two kilometers (1.25 miles) away from the closest all-season road.⁸ The failures of automotive empire to connect African hinterlands to centers of economic and political power had long-lasting political, social, and economic implications.

Automotive empire's Nazi auditors diagnosed its failures as a colonial model, pointing to the recurring roadblocks of space, fuel, and labor. "Breadth of space" (*Weiträumigkeit*), low population density, and challenges posed by African climates made building and maintaining roads difficult. Meanwhile, lack of known oil reserves posed a constant challenge to fueling infrastructure. European errors exacerbated these geographic factors. "Unhealthy competition" reigned across the continent, whether between road and rail companies or among motor transport providers, as among "Asiatic entrepreneurs" in British East African territories or Syrian and Greek operators in British West African colonies. After remarking

upon the profusion of small transport operators in French Cameroon, where nearly three-quarters of 150 registered transport companies possessed only one vehicle, the Germans argued that “the organization of transport must have the goal of using each separate transport medium most efficiently and ensuring the cooperation of the various transport businesses.”⁹ For European officials, Africa’s transport problem demanded more state coordination and fewer unpredictable elements, whether human or environmental. What British officials had termed the “uncontrolled individuality” of automobility plagued statist colonial schemes.¹⁰

Automotive empire was a failure, but its shortcomings defined an era. The roadblocks that constrained it could not be overcome cheaply, quickly, or reliably. Overstretched, underfunded colonial administrations had neither the means nor the will to do so. Even when they were virtually given a blank check, as in Italian East Africa, fuel costs, difficulty recruiting workers, long distances between ports and the interior, and rapid deterioration of roads created an impoverished, overstretched colony of burdensome roads. Separate colonial administrations across the continent created competing, duplicative infrastructures. The intensive development of areas of white settlement and fierce competition among transport companies along remunerative paths compounded the “lumpy” territoriality that automotive empire had been designed to smooth.¹¹ The Germans, without colonial territory to defend, argued that only the territorial reorganization of Africa could solve the continent’s transport problem and the various political, economic, and social challenges that it created. The “internationalization” of the transport problem was required, and nothing less than “the establishment of a pan-African transport network aligned with the needs of Europe” would suffice.¹² Although some Europeans lobbied for intercolonial, pan-African infrastructures beginning in the late 1930s, the financial and bureaucratic hurdles of separate colonial and national-imperial frameworks stymied their efforts.

Automotive Empire after Empire

World War II unsettled European empires in Africa materially and morally. The North African front was defined by rapid incursions along coastal roads stretching from Morocco to Egypt, with much of the focus on an eleven-hundred-mile stretch between the Axis base at Tripoli and the British Commonwealth base in the Cairo-Alexandria-Suez triangle.¹³ In East Africa, British troops flooded into Italian East Africa in June 1940 to fight alongside the Ethiopian *Arbegnoch*, whose guerrilla campaign to expel the Fascists had never ended. Elsewhere, Africans crisscrossed the continent to fight at the battlefronts, constructed roads

while subject to military discipline, and extracted the mineral and agricultural resources that fueled the global war.

In the aftermath of the war's widespread disruptions across the continent, European officials sought to rebrand empire in a more humanistic guise. At first, it seemed this era of late colonialism might be a boon for road construction initiatives, which nicely fit the goals of "repressive developmentalism" undertaken by more activist and better-funded, yet still coercive colonial states. The British passed the Colonial Development and Welfare Act in 1940 and increased its funding in 1945 as part of a "tropical New Deal." With the creation of the French Fourth Republic in 1946, France recast the empire as the "French Union," funneled its development funds through the Fonds d'Investissement pour le Développement Économique et Social (FIDES—which received seven times the funding of British efforts), and finally, definitively outlawed forced labor through the Houphouët-Boigny Law. The Belgians turned their attention to economic development and social improvement initiatives, launching the Ten-Year Plan for the Congo in 1949, which allocated over 50 percent of total funds to infrastructure and communications development. Portuguese colonial efforts, too, stressed expanding transport and communications infrastructure, while Italy never regained its African colonies.¹⁴

However, this era of "late colonialism" did not evince the same technocratic faith, utopianism, or confident declarations of hegemony of the pre-World War II era.¹⁵ Before 1940, European states elaborated grand visions and comprehensive models to transform their African colonies, convinced of their own might and the transformative effects of technology and infrastructure. Cars and roads, they believed, would create vibrant, functioning empires that connected colonies to the metropole in myriad material and ideological ways. Automotive empire encapsulated their optimism and ambition. After World War II, Europeans sought to repackage and rebrand empire, a rearguard action against anticolonial nationalist movements and labor disruptions, as well as the changing imperial politics of the Cold War world.¹⁶

For empire ended not because European powers chose to end it, but because other actors forced their hand. The most important of these challenges came from their African wards. Colonial officials may have imagined postwar roads as paths of development in a more compassionate, cooperative colonialism, but for countless Africans, the war not only revealed Europe's weakness on the global stage—it sparked new political imaginaries. As Robert Kakembo wrote, "It was this war that brought most of the East and Central African tribes together for the first time in the history of Africa," which led them, in Kakembo's interpretation, "to think more in terms of a race than as a tribe."¹⁷ Roads, imagined to anchor European power in colonial territories, helped African subjects formulate

imagined communities, much as railways had “enlarged communities of belonging” in nineteenth-century industrial states.¹⁸ Given the centrality of the road to African perceptions of colonial maltreatment, late-colonial road politics and African automobility offer a fruitful path for theorizing the African challenge to European rule and the shape of postcolonial societies, as many scholars have shown.¹⁹ Infrastructure development and growing African automobility informed the “multiple possibilities” of the late colonial era, as well as the eventual convergence on nationalist politics and the transformation of former colonies into nation-states.²⁰

Exacerbating pressures from below, global geopolitics also made automotive empire a relic. The shifting political and humanitarian winds of the Cold War limited the value of overseas colonies. But the repeated failures of automotive empire as a model and the lack of viable alternatives that would advance the intertwined territorial, political, administrative, economic, and social goals of colonial rule dampened European enthusiasms. With European colonial powers unable to solve Africa’s transport problem on their own terms, the model of the United States of America’s “pointillist empire,” which “replaced colonization with globalization” and “substitut[ed] technology for territory,” supplanted not only the model of automotive empire but European territorial empires *tout court*.²¹

With most colonies attaining independence by the early 1960s, roads and automobility created important bonds across the colonial/postcolonial divide. Roads are a site of colonial memory for the Africans who continue to use them, as they were often one of the first impacts and remain one of the most enduring legacies of colonialism in everyday life.²² Many of the aspects of colonial roads that vexed European officials still define Africa’s infrastructure network. African roads remain multifunctional, collective, social spaces that continue to evade centralized and formal state control. Although the political context has changed drastically in the last century-plus, road construction remains essential to the bureaucratic and territorial projects of state centralization for independent African states.²³ This project, forever unfinished, orchestrates relations between Africa and the rest of the world.²⁴

Although African states rejected the social and political submission inherent in European colonialism, the developmental goal elaborated in the interwar period has remained. “Indeed,” writes Priya Satia, “it is what makes postcolonial societies *postcolonial*.”²⁵ Independent African states and international agencies assumed administration of infrastructure development projects meant to knit isolated communities into national and global networks.²⁶ In the heady decade after independence, leaders pursued the construction of a trans-African highway, hoping to overcome the fractured political and infrastructural legacies left by colonialism by creating a “a tool of Pan-African integration and development.”²⁷

In the process, hoped leaders such as Kenya's Jomo Kenyatta and Ghana's Kwame Nkrumah, roads would bind African territory as both an institutional "decision space" and a shared "identity space."²⁸ Whatever the utopian dreams that fueled its construction, the trans-African highway project was directed by the United Nations Economic Commission for Africa and depended on outside expertise (often provided by former European colonial officials) and outside financing (Japan in the late 1960s, China today). As it was, because the political will and financing rested with individual states, the trans-African highway project languished.²⁹ Although the leaders of independent African states claimed to move past the strict hierarchies of the colonial era, postcolonial developmentalism depended on its own power imbalances defined by expertise, mobility, and access to political power.³⁰

These hierarchies emerged within African polities but also structured relations between Africa and Europe. Infrastructural development projects are one of the primary reasons why, as Peo Hansen and Stefan Jonsson write, "the post-colonial order is also a neocolonial one."³¹ Reports commissioned by the World Bank document continuities across historical eras. As one observes, "Africa has inherited from its history a distorted and relatively poor transport infrastructure, which it has neither managed nor maintained well."³² Those distortions, of course, emerged from European colonial practices that produced duplicative, export-oriented infrastructures oriented toward the extractive aims of European economic exploitation. In a statement that could have easily been written in the era of automotive empire, a World Bank report describes Africa's "difficult economic geography"—low population density, comparatively low levels of urbanization, landlocked and atomized territories, and small economies—a situation both produced and reflected by the continent's "fragmentary infrastructure networks."³³

As ever, outside experts have described Africa's shortcomings as both environmental and human.³⁴ And, as ever, road development offers a tantalizing escape from cycles of underdevelopment. According to a 2009 report, "many of Africa's infrastructure assets and natural resources are regional public goods that cut across national frontiers and can be effectively developed and maintained only through international collaboration."³⁵ Further, a "persistent capital bias" has led to an overemphasis on new construction at the expense of needed maintenance, and many roads are "overengineered relative to observed traffic volumes."³⁶ Whereas road spending absorbs approximately 1 percent of GDP in industrialized countries, it consumes three to four times as much in countries like Ethiopia and Malawi (formerly Nyasaland).³⁷ For African and global actors, roads and automobility retain the promise that, if properly pursued with enough funding and technical expertise, they can remake Africa's

interdependent territorial, political, and economic relations along more rational, productive lines.

The relationship among infrastructure, mobility, and political power in Africa remains salient. Politicians and commentators in North America and Western Europe have been sounding the alarm about Chinese infrastructural imperialism. The Belt and Road Initiative has seen China make massive investments in physical and digital infrastructure to knit together a sprawling market linking Asia, Europe, and Africa through land transport, port facilities, and maritime connections. China is now the largest outside investor in Africa, with particular focus on infrastructure development and the energy and mineral sectors. China has positioned its initiative as an investment project that will spur economic development and allow all boats to rise, but Western critics caution that it will cement Chinese economic and political hegemony in the Eastern Hemisphere.³⁸ Regardless, the intervention of non-African states creating developmental infrastructures to secure access to African resources while claiming benevolent, humanistic motivations represents a continuity in the continent's history since the late nineteenth century. Europe's colonial experiments with automotive empire suggest, however, that infrastructures are not direct or uncomplicated tools of power wielded by state officials or business interests. Once they are built, infrastructures take on their own life and are defined by their users, not by their planners and designers. The perceived power of imperial infrastructures and the illusion of influence that they provide bear watching today, and in the future.

Automotive Empire in European Memory

As the defining aspect of a colonial era, automotive empire was always oriented toward European ends, even when officials described roads or motorization initiatives as means to improve Africans' lives.³⁹ Europeans imagined them as the foundational infrastructures of their modern rule, and automotive empire has thus had an important afterlife in metropolitan European memory. Much of this discussion centers on the European claim, whether explicit or implied, that by building roads, colonial administrations gifted modernity to Africa, drawing the continent into the mainstream of history. Europeans understood roads as the patrimony of Western civilization bestowed on African lands. When movements for national independence forced European withdrawal, colonial administrations learned to their chagrin that they could not take roads with them. In late colonial and postcolonial Africa, Europeans touted African development, made possible by so-called metropolitan financial sacrifices, as a beneficial outcome of colonial rule.

Hundreds of thousands of miles of roads certainly testify to the colonial emphasis on roadbuilding, but a reminder of their financing and construction is in order. Through World War II, both the British and the French empires required their colonies to be “fiscally independent” and self-supporting. Before 1940, salaries for administrative staff, who were paid on European schedules, absorbed between one-half and two-thirds of colonial budgets.⁴⁰ We have seen how colonial officials lamented the lack of funding to build roads and support automotive services. Grand schemes such as Albert Sarraut’s *mise en valeur* defined the ambitions of interwar empire but never became law. Automotive empire was defined by this discrepancy between transformative, utopian promises and the realities of underfunded, neglected colonies. The economic historian Elise Huillery’s close examination of colonial budgets reveals that from 1900 to 1940 French West Africa (AOF) subsidized France more than France subsidized AOF. Huillery calculates that rather than inheriting French infrastructural patrimony, the residents of AOF financed 98 percent of their own colonial development and administration, with nearly all of France’s 2 percent share expended after 1945.⁴¹

Automotive empire was coercive colonialism on the cheap. Africans constructed and maintained most roads without pay, usually by hand. The investment in African roads was one of African labor, not European capital. Indeed, the European discourse of investment and development, formulated in the interwar years and enduring to the present day, served to justify brutal systems in the name of a common good defined by officials who did not answer to African stakeholders. Europeans created African public works in spite of an African public, not in service of it. Having determined that Africa needed roads to solve its transport problem, proponents of automotive empire *designed* colonial states to be capricious and extractive.

Of any empire, the Italians have the greatest claim to have endured metropolitan sacrifices for colonial development, as constructing automotive empire in East Africa imposed increasingly heavy burdens on Italian citizens in the late 1930s. But context matters. Italian roads in East Africa were stained with the blood of hundreds of thousands of Ethiopians who died during Benito Mussolini’s Fascist war, and the Italian project of automotive empire made no effort to apply a civilizing veneer to colonial brutality.⁴² Nevertheless, roads in East Africa and Libya became central to Italy’s postwar project to distinguish Italian colonialism from Fascism in an effort to regain their lost colonies. In the immediate postwar years, Italian ministries produced publications to record their colonial activities. Several of these were published in English, indicating that they were not after-action audits, but propaganda meant to persuade an international, Anglophone audience that the Italians had been worthy stewards of their African colonies. In 1945, with the status of former Italian colonies still under negotiation (they

would renounce them as part of the peace treaties signed in 1947), the Italians used roads to track their putative humanitarian investments in Africa. One publication produced by the Colonial Agricultural Institute admitted, “We are not so devoid of sense of humor as to hold that Italy has not made the slightest error in her African policy.” However, Italy argued that its territories of Libya, Eritrea, and Somalia, which “history and regular international agreements have assigned to [Italy] were completely undeveloped[,] and backward conditions of civilization prevailed in them.”⁴³ A separate publication that appeared in 1946 was dedicated to Ethiopia alone. Maps of the new road network took pride of place, and graphs and charts tracked the billions of lire spent on road construction.⁴⁴

As this book has shown, automotive empire materialized colonial ideologies and power relations in African landscapes and societies. The “muteness” of infrastructure made roads a useful tool for obscuring colonialism’s endemic abuses.⁴⁵ This framing of memory was no accident. Originals of many of the published photographs that lauded the successes of Fascist automotive empire in glossy publications (see chapters 7 and 8) sit in archival files in Rome. One folder contains hundreds of pictures of East African roads and bridges. At some point after the fall of the Fascist regime, an Italian official went through and marked the photographs with any whiff of Fascism—officials in regalia inaugurating tunnels and bridges, roadside memorials emblazoned with fasces, pro-Mussolini graffiti—with a large X, indicating that they should not be circulated. Meanwhile, depictions of Italian workers and finished roads remained unmarked, cleared for publication.⁴⁶ Roads presented a depoliticized narrative of Italian investment and development congruent with post-1945 global trends. The symbol of Italian colonial rule, in many ways, has become the futurist Fiat Tagliero service station in Asmara, an iconic example of Italian modernist architecture in the heart of the Eritrean capital (figure C.1).

The Tagliero station sits just west of Asmara’s Alfaromayo neighborhood, named after the Italian car manufacturer that set up shop there. Material infrastructures have a way of becoming permanent monuments to strongmen and authoritarian regimes, their very muteness obscuring the ideologies and practices that produced them.⁴⁷ From the Tagliero station to the hundreds of thousands of miles of roads across the continent, knowledge of the circumstances of their production reveals these as physical memorials to the brutality of colonialism.

Colonial roadbuilding became a foundation for post-Fascist Italian nationalism and its international rehabilitation. The war had left Italy divided, reducing Italians “to the level of the most miserable human races: deprived of genius, courage, tenacity, the strength of organization and discipline.” For one Italian author, Libya’s *strada litoranea*, an “epic” constructed in only twelve months, offered a demonstration of Italian genius, as “a true miracle of organization



FIGURE C.1. The Fiat Tagliero station in Asmara, Eritrea. Source: David Stanley / Wikimedia Creative Commons Attribution 2.0 Generic License.

and technical execution, of courage and resistance against the hostilities of the climate, the terrain, and historical events; [a miracle] of social nobility, of speed and beauty.” The road alone, one author argued, could restore Italians’ “faith,” offering proof “in the destiny of the country to discouraged or corrupted Italians.” Further, it demonstrated Italy’s fundamental *Europeanness*, proving to other nations Italy’s “essential role in the work of civilization on the African continent.”⁴⁸ After conquering East Africa during World War II, the British substantiated Italian claims, gushing that Ethiopia’s roads “rank among the most spectacular roads of the world,” offering an “enormous potential asset towards the future development of this country.”⁴⁹ Thus, the Italians were deeply wounded when Anthony Eden, then leader of the House of Commons, declared that Italy would not regain “a single cubic meter of its African territories.” The rapidity and success of road development, Italian officials claimed, made it baffling to suggest that Britain had nothing to learn from “its colleague in the development of East Africa.” The efforts of a “great Italian army of labor” to build roads and 3,924 bridges verified their investment.⁵⁰ Such thinking has influenced even historiographical interpretations of Italian colonialism. As the historian Haile Larebo writes, whatever abuses occurred, the Italians “laid down

developmental infrastructures” and pulled Ethiopia “into greater participation in the world capitalist system.”⁵¹

The reality, of course, was that roads were neither an investment nor a “gift” from Italy to Ethiopia. Instead, writes the historian Richard Pankhurst, they “constituted a kind of booty, which [the Italians] could not take away with them.”⁵² Indeed, when British forces defeated Italy in East Africa in 1941, the two sides *cooperated* to keep European technology out of Ethiopian hands. CITAO, the Italian colonial transport company, worked with the British to transport Italian vehicles, war matériel, machinery, and entire industrial plants to Kenya.⁵³ That enemies could collaborate so soon after engaging in battle—while still at war and at the very moment that British troops fought Axis forces in North Africa and prepared to invade metropolitan Italy—attests to the widespread agreement that colonial technologies and infrastructures were for Europeans, not Africans.

Haile Selassie learned this hard truth when he returned to Ethiopia from his exile in the United Kingdom. In 1942 his government appealed to the British for aid to recondition roads and bridges. In a scathing internal memorandum, an unnamed British official wrote that the Ethiopians took “too hopeful a view of the extent of our generosity.” Haile Selassie’s government wrongly assumed that the British shared “a mission to sustain the development (or reconstruction) of Ethiopia on the Italian scale.” Indeed, the official noted, the Ethiopians failed to understand that “the elaborate and costly structure set up by the Italians” was “animated by their intention to make Ethiopia a land fit for Italians to live in—not for Ethiopians.”⁵⁴ Given the damage inflicted by mobile warfare and Italian neglect of maintenance, and with British funds not forthcoming, Ethiopia’s roads deteriorated dramatically by 1945.⁵⁵ Far from an infrastructural gift, automotive empire saddled independent Ethiopia with expensive burdens. In 1950, Ethiopia took on a US\$5 million loan from the World Bank to repair and maintain the country’s roads. Subsequent development plans in the 1950s and 1960s aimed to improve infrastructure to spur agricultural and mineral development, in an echo of the era of Italian rule.⁵⁶

Automotive Empire, Then and Now

Europeans could not take roads with them when colonies declared their independence in the 1950s and 1960s (1975 for Portugal’s colonies), but former colonies remain sites of European automotive fantasy to this day. European commentators or politicians will occasionally claim that the interwar burst of developmentalism should be recognized as a positive outcome of European colonialism. But in recent decades, Europeans have largely reverted to understanding Africa as

empty, ripe for automotive adventure and technological stress tests that defined the early era of automotive empire through Citroën's *Croisière noire*.

The endurance race of the Paris-Dakar Rally, first staged in 1978, grew out of the late-colonial Rallye Méditerranée and resuscitated the Saharan *raids* undertaken by Citroën and Renault.⁵⁷ The annual rally usually traveled from Paris to the Mediterranean coast, crossed the Mediterranean (to Algiers, Tripoli, or Tunis), and traversed the Sahara to Dakar. Following the cancellation of the 2008 rally because of terrorism threats in Mauritania, “the Dakar” has become a placeless signifier of automotive escapades, with races staged in South America (2009–2019) and the Arabian Peninsula (2020–present). Throughout its history, critics have lambasted the rally for its “colonial” bearing: its focus on (mostly male, European) drivers’ experiences over the effects on Indigenous residents of the lands where the rally has been held, as well as its environmental rapaciousness.⁵⁸ As an echo of the *raids* undertaken a century ago, the Dakar performs and reproduces the dynamics of European colonialism. It also depends on the romance of empire, a continuity in European perceptions of Africa as a space for adventure and self-actualization that transcends the formal end of empire.

The neocolonial fantasy of the Dakar is not just for competitive motor sport. Re-creations of colonial automotive adventures repackage past glories for consumers. Carsten Möhle, a German based in Windhoek, Namibia, runs a tourism company called Bwana Tucke-Tucke, offering motor tours of Windhoek and automotive safaris throughout southern Africa under Paul Graetz’s self-adopted moniker.⁵⁹ In 1999 and 2016, Möhle led memorial tours that followed Graetz’s tire tracks across the continent.⁶⁰ The company maintains a website dedicated to Paul Graetz that traces his life and adventures, dubbing him “the German Indiana Jones.”⁶¹ Meanwhile, Citroën’s Central Africa Expedition has been the subject of multiple television programs. A Franco-German production mixes interviews with historians and Georges-Marie Haardt and Louis Audouin-Dubreuil’s descendants, footage from the film *Croisière noire*, and contemporary re-creations undertaken in a Range Rover.⁶² Another production, broadcast on France’s TV5 in 2007, follows a team of drivers who trace the path taken by Haardt and Audouin-Dubreuil in historic Citroën automobiles (although not the *autochenilles*).⁶³ Pioneering automotive adventures in Africa, like the idea of roads as a “gift,” have assumed mythical status. They offer a rosy, nostalgic view of colonialism, one that can be re-created, consumed, and enjoyed as entertainment by gearheads and history buffs alike. The spectacle of automotive empire retains its appeal and plays a central role in casting Africa as a space for European self-fashioning, whitewashing the suffering inflicted by European colonialism.

The pretensions, obsessions, abuses, and failures of the European colonial era are mapped upon the African road. Indeed, according to one colonial-era

French geographer, “the road is a palimpsest where the writings of different epochs overlap without fading away.”⁶⁴ Sometimes colonial history was written atop precolonial tracks, but Europeans were certain that the application of European vision and their suitability for automobiles distinguished them as roads, not trails, paths, or pistes. Other times European officials created roads *ex nihilo* to proclaim a new, modern era defined by European-designed infrastructures and automobility. Regardless, the traces of the colonial past inhere within the road, built from the ground up by African hands and informed by African knowledge. They also emerge at the roadside, where colonial officials resettled entire communities by force to create sedentary agricultural settlements and a stable labor pool to maintain those very roads. Africans also resettled by choice, seizing opportunities where colonial patterns of mobility supported traders, shopkeepers, and farmers. African geographies of settlement, patterns of mobility, and political and social relations have layered atop colonial roads. The postcolonial epoch has been shaped, but not determined, by the legacies of automotive empire.

Of course, automotive empire was never a one-way street. The effects of road-building and motorization in Africa rebounded to Europe. In 1996, Omar Bongo, erstwhile president of the former French colony of Gabon, described postcolonial relations in automotive terms, asserting that “Africa without France is a car without a driver, but France without Africa is a car without fuel.”⁶⁵ The postcolonial dynamic of European authority and resource dependence vis-à-vis Africa could be extended to any number of realms, but the automotive framework reveals much. In the 1950s, massive petroleum reserves were discovered in Algeria, Libya, and Nigeria. For a brief time before Nigeria achieved independence in 1960 and Algeria in 1962, it appeared that large reservoirs of African oil might break the roadblock of fuel that had limited the effectiveness of automotive empire. But although European colonial rule ended in the postwar decades, the exploitation of these reserves by international oil conglomerates such as Shell and Esso, made possible by postcolonial African “gatekeeper states” that control access and selectively distribute profits, extends the legacy of imbalanced relationships in Africa mediated by the automobile.⁶⁶ From the material to the metaphorical, in lived experience and in memory, from the colonial to the postcolonial, Africa and Europe alike have been made by automotive empire.

Notes

A list of abbreviations used below can be found in Archives and Publications.

INTRODUCTION

1. Charles Maître-Devallon, "Considérations générales sur l'évolution des transports en Afrique tropicale au cours des dernières années," *ACVIII*, vol. 2, 1280–1293.

2. Ewout Frankema and Morten Jerven, "Writing History Backwards or Sideways: Towards a Consensus on African Population, 1850–2010," *Economic History Review* 67, no. 4 (2014): 907–931.

3. Recent research qualifies European agency in Africa's colonial partition by placing it in the context of a century of globally engaged change within African societies. Richard Reid, "Africa's Revolutionary Nineteenth Century and the Idea of the 'Scramble,'" *AHR* 126, no. 4 (2021): 1424–1447.

4. LSE, RJC 8/39, English translation of report from Maître-Devallon from the Paris Colonial Exposition, 1931, 7.

5. Rudyard Kipling, *With the Night Mail: A Story of 2000 AD* (New York: Doubleday, Page, 1909), 47.

6. Karl Krüger, *Die Straßen der Welt: Eine Straßengeographie* (Berlin: Volk und Reich Verlag, 1937), 117.

7. WOLF, XB1994.316.29, *Die Entwicklung des Verkehrs vom Altertum bis zur Gegenwart* (n.p.: ca. 1929).

8. ANOM, 1AFFPOL/2530/3, "Rapport de M. Beau . . . sur le VI^e Congrès International de la Route aux États-Unis (Octobre 1930)," 43.

9. Benito Mussolini, "Al Gran Rapporto del Fascismo: Discorso pronunciato il 14 settembre a Palazzo Venezia," in *Scritti e discorsi di Benito Mussolini, edizione definitiva*, vol. 7 (Milan: Ulrico Hoepli, 1934), 130.

10. Michael Adas, *Machines as the Measure of Men: Science, Technology, and Ideologies of Western Dominance* (Ithaca, NY: Cornell University Press, 1989).

11. Many scholars still regard the environment as the motor of African history. Historian John Iliffe describes an "exceptionally hostile" environment that makes demographics "the central historical theme" of African history across eras. Iliffe, *Africans: The History of a Continent*, 3rd ed. (New York: Cambridge University Press, 2017), 3. Similarly, the political scientist Jeffrey Herbst contends that Africa's "combination of a peculiar set of geographical features" has made it "expensive to project power" throughout its history. Herbst, *States and Power in Africa: Comparative Lessons in Authority and Control*, with a new preface by the author (Princeton, NJ: Princeton University Press, 2014), 12. For an overview of the role of the environment in modern African history see James McCann, "Ecology and Environment," *OHMAH*, 21–37.

12. Giotto Dainelli, "Ambiente naturale e civiltà nel continente africano," *ACVIII*, vol. 1, 230–231, 233, 237–238.

13. Mobility studies is a rich, interdisciplinary field that studies the material movement of people and things, its embodied experience, and the cultural renderings thereof. Key theoretical texts include Tim Cresswell, "Towards a Politics of Mobility," *Environment and*

Planning D: Society and Space 28 (2010): 17–31; Stephen Greenblatt, “Cultural Mobility: An Introduction,” in *Cultural Mobility: A Manifesto*, by Stephen Greenblatt, with Ines Županov, Reinhard Meyer-Kalkus, Heike Paul, Pál Nyíri, and Friederike Pannewick (Cambridge: Cambridge University Press, 2010), 1–23; Mimi Sheller and John Urry, “The New Mobilities Paradigm,” *Environment and Planning A* 38 (2006): 207–226.

European imperialism in Africa was defined by mobility as much as the imposition of grounded, stable territoriality and depended on systems of control and management of mobility. Tony Ballantyne, “On Place, Space and Mobility in Nineteenth-Century New Zealand,” *New Zealand Journal of History* 45, no. 1 (2011): 50–70; Tony Ballantyne, “Mobility, Empire, Colonisation,” *History Australia* 11, no. 2 (2014): 7–37; Tony Ballantyne and Antoinette Burton, “Empires and the Reach of the Global,” in *A World Connecting, 1870–1945*, ed. Emily S. Rosenberg (Cambridge, MA: Belknap Press of Harvard University Press, 2012), 285–431; Valeska Huber, “Multiple Mobilities: Über den Umgang mit verschiedenen Mobilitätsformen um 1900,” *Geschichte und Gesellschaft* 36, no. 2 (2010): 317–341; Valeska Huber, *Channelling Mobilities: Migration and Globalisation in the Suez Canal Region and Beyond, 1869–1914* (New York: Cambridge University Press, 2013); Ann Laura Stoler and Carole McGranahan, “Introduction: Refiguring Imperial Terrains,” in *Imperial Formations*, ed. Ann Laura Stoler, Carole McGranahan, and Peter C. Perdue (Santa Fe: School for Advanced Research Press, 2007), 3–42.

14. Kudzai Matereke, “‘Africa, Are We There Yet?’ Taking African Mobilities Seriously—Concluding Remarks,” *Transfers* 6, no. 2 (2016): 112–119.

15. Ballantyne and Burton, “Empires,” 352. Because infrastructures are material systems that enable movement, circulation, and exchange, thus balancing fixity and flows, they are similarly crucial to imperial dynamics. Dirk van Laak, *Alles im Fluss: Die Lebensadern unserer Gesellschaft—Geschichte und Zukunft der Infrastruktur* (Frankfurt: S. Fischer, 2018), 11; Brian Larkin, “The Politics and Poetics of Infrastructure,” *Annual Review of Anthropology* 42 (2013): 328.

Historians have long used infrastructure to uncover the political, environmental, and social dynamics of empire and quasi-imperial relations in Africa. J. P. Daughton, *In the Forest of No Joy: The Congo-Océan Railroad and the Tragedy of French Colonialism* (New York: W. W. Norton, 2021); Jennifer L. Derr, *The Lived Nile: Environment, Disease, and Material Colonial Economy in Egypt* (Stanford, CA: Stanford University Press, 2019); Daniel Headrick, *The Invisible Weapon: Telecommunications and International Politics 1851–1945* (New York: Oxford University Press, 1991); Daniel Headrick, *Power over Peoples: Technology, Environments, and Western Imperialism, 1400 to the Present* (Princeton, NJ: Princeton University Press, 2010); Daniel Headrick, *The Tentacles of Progress: Technology Transfer in the Age of Imperialism, 1850–1940* (New York: Oxford University Press, 1988); Daniel Headrick, *The Tools of Empire: Technology and European Imperialism in the Nineteenth Century* (New York: Oxford University Press, 1981); Huber, *Channelling Mobilities*; Timothy Mitchell, *Rule of Experts: Egypt, Techno-politics, Modernity* (Berkeley: University of California Press, 2002); James C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven, CT: Yale University Press, 1998); Monica M. van Beusekom, *Negotiating Development: African Farmers and Colonial Experts at the Office de Niger, 1920–1960* (Portsmouth, NH: Heinemann, 2002); Dirk van Laak, *Imperiale Infrastruktur: Deutsche Planungen für die Erschließung Afrikas, 1880 bis 1960* (Paderborn: Ferdinand Schöningh, 2004).

16. J. C. Sharman describes an era of “European deference and subordination,” wherein their maritime, commercial interests did not threaten sovereigns in Asia, Africa, and the Americas. Sharman, *Empires of the Weak: The Real Story of European Expansion and the Creation of the New World Order* (Princeton, NJ: Princeton University Press, 2019), ix–x, 2. See also Rolf Strootman, Floris van den Eijnde, and Roy van Wijk, eds., *Empires of the Sea: Maritime Power Networks in World History* (Leiden: Brill, 2019), chaps. 10 and 12;

Jane Burbank and Frederick Cooper, *Empires in World History: Power and the Politics of Difference* (Princeton, NJ: Princeton University Press, 2010), chap. 6; Headrick, *Power over Peoples*, chap. 2.

17. Clarence B. Davis and Kenneth E. Wilburn Jr. with Ronald E. Robinson, eds., *Railway Imperialism* (New York: Greenwood, 1991); Manu Karuka, *Empire's Tracks: Indigenous Nations, Chinese Workers, and the Transcontinental Railroad* (Oakland: University of California Press, 2019); Charles S. Maier, *Once within Borders: Territories of Power, Wealth, and Belonging since 1500* (Cambridge, MA: Belknap Press of Harvard University Press, 2016), chap. 5; Headrick, *Tentacles of Progress*, chap. 5.

18. Jenifer Van Vleck, *Empire of the Air: Aviation and the American Ascendancy* (Cambridge, MA: Harvard University Press, 2013); Daniel Immerwahr, *How to Hide an Empire: A History of the Greater United States* (New York: Picador, 2019), chaps. 20–21.

19. Gabrielle Hecht, *The Radiance of France: Nuclear Power and National Identity after World War II* (Cambridge, MA: MIT Press, 2009), 15. Similarly, David Edgerton stresses that historians of technology must theorize the “co-production” of technology and historical change, while Leo Marx cautions that technology is always a “relation between people” and that “technology, as such, makes nothing happen.” Edgerton, “Innovation, Technology, or History: What Is the Historiography of Technology About?” *T&C* 51, no. 3 (2010): 694; Marx, “Technology: The Emergence of a Hazardous Concept,” *T&C* 51, no. 3 (2010): 576–577.

20. Roland Barthes, *Mythologies*, trans. Annette Lavers (New York, 1957), 88. The automobile industry’s demand for rubber, however, has led historians to explain how access to rubber spurred imperialist relations in the tropics: Greg Grandin, *Fordlandia: The Rise and Fall of Henry Ford’s Forgotten Jungle City* (New York: Metropolitan Books, 2009); Stephen L. Harp, *A World History of Rubber: Empire, Industry, and the Everyday* (Malden, MA: Wiley Blackwell, 2016); Gregg Mitman, *Empire of Rubber: Firestone’s Scramble for Land and Power in Liberia* (New York: New Press, 2021); John Tully, *The Devil’s Milk: A Social History of Rubber* (New York: Monthly Review, 2011).

21. Indeed, in two field-defining books on the relationship between technology and imperialism, neither automobiles nor roads merit even an index entry: Headrick, *Power over Peoples*; Headrick, *Tentacles of Progress*.

22. André Huybrechts, *Transports et structures de développement au Congo: Étude du progrès économique de 1900 à 1970* (Paris: Mouton, 1970), 7.

23. W. Travis Hanes III, “Railway Politics and Imperialism in Central Africa, 1889–1953,” in Davis, Wilburn, and Robinson, *Railway Imperialism*, 41–69; Headrick, *Tentacles of Progress*, 50.

24. Ronald E. Robinson, “Introduction: Railway Imperialism,” in Davis, Wilburn, and Robinson, *Railway Imperialism*, 2. On subimperial actors: Steven Press, *Rogue Empires: Contracts and Conmen in Europe’s Scramble for Africa* (Cambridge, MA: Harvard University Press, 2017); John Darwin, “Imperialism and the Victorians: The Dynamics of Territorial Expansion,” *EHR* 112, no. 447 (1997): 614–642.

25. Headrick, *Tentacles*, 50; On the Congo-Océan: Daughton, *In the Forest of No Joy*.

26. BAB, NS 52/101, “Zusammenfassung der wichtigsten Erkenntnisse der Abteilung IV ‘Verkehr und Technik’ vom Beginn ihrer Tätigkeit bis zur Stilllegung im Februar 1943,” March 1943, 31.

27. BAB, NS 52/99, “Grundzüge der kolonialwirtschaftlichen Verkehrsarbeit,” no date, Blatt 10.

28. Gijs Mom, *Globalizing Automobility: Exuberance and the Emergence of Layered Mobility, 1900–1980* (New York: Berghahn Books, 2020), 167.

29. According to historian of technology David Edgerton, we must study technology-in-use as much as innovation, failures as much as successes. Edgerton, *The Shock of the Old: Technology and Global History since 1900* (London: Profile Books, 2006), ix–xv.

30. Clapperton Chakanetsa Mavhunga, “Introduction: What Do Science, Technology, and Innovation Mean from Africa?,” in *What Do Science, Technology, and Innovation Mean from Africa?*, ed. Mavhunga (Cambridge, MA: MIT Press, 2017), 2.

31. William Cunningham Bissell, *Urban Design, Chaos, and Colonial Power in Zanzibar* (Bloomington: Indiana University Press, 2011), 71.

32. Frederick Cooper, *Africa in the World: Capitalism, Empire, Nation-State* (Cambridge, MA: Harvard University Press, 2014), 54.

33. Frederick Cooper, *Colonialism in Question: Theory, Knowledge, History* (Berkeley: University of California Press, 2005), 91–92. On roads smoothing territory and constituting the state: Jo Guldi, *Roads to Power: Britain Invents the Infrastructure State* (Cambridge, MA: Harvard University Press, 2012).

34. Edgerton, *Shock of the Old*, 76; Andreas Greiner, *Human Porterage and Colonial State Formation in German East Africa, 1880s–1914: Tensions of Transport* (Cham, Switzerland: Palgrave Macmillan, 2022), 189–190, 193–194, 197. On this dialectic of presence and absence through roads: Penny Harvey and Hannah Knox, *Roads: An Anthropology of Infrastructure and Expertise* (Ithaca, NY: Cornell University Press, 2015), 38. See also Christopher R. Henke and Benjamin Sims, *Repairing Infrastructures: The Maintenance of Materiality and Power* (Cambridge, MA: MIT Press, 2020); Andrew L. Russell and Lee Vinsel, “After Innovation, Turn to Maintenance,” *T&C* 59, no. 1 (2018): 1–25.

35. On the circulatory state: Andrew Denning, “‘Life Is Movement, Movement Is Life!’: Mobility Politics and the Circulatory State in Nazi Germany,” *AHR* 123, no. 5 (2018): 1479–1503, esp. 1483.

36. Walter Hawthorne, “States and Statelessness,” *OHMAH*, 86. On precolonial forms of territoriality in Africa: Achille Mbembe, “At the Edge of the World: Boundaries, Territoriality, and Sovereignty in Africa,” translated by Steven Rendall, *Public Culture* 12, no. 1 (2000): 259–284. On the imposition of territoriality as an early and significant impact of colonialism: Herbst, *States and Power*, 35. European states replaced the common “social definition of territory” across the continent with “a territorial definition of society”: Christopher J. Gray, *Colonial Rule and Crisis in Equatorial Africa: Southern Gabon, ca. 1850–1940* (Rochester, NY: University of Rochester Press, 2002), 19.

37. Michel Foucault, *Security, Territory, Population: Lectures at the Collège de France, 1977–78*, edited by Michel Senellart, translated by Graham Burchell (Houndmills, Basingstoke, UK: Palgrave Macmillan, 2007), 18, 65. On Africa: Darshan Vigneswaran and Joel Quirk, eds., *Mobility Makes States: Migration and Power in Africa* (Philadelphia: University of Pennsylvania Press, 2015).

38. Brian Larkin, *Signal and Noise: Media, Infrastructure, and Urban Culture in Nigeria* (Durham, NC: Duke University Press, 2008), 8; Paul N. Edwards, “Infrastructure and Modernity: Force, Time, and Social Organization in the History of Sociotechnical Systems,” in *Modernity and Technology*, ed. Thomas Misa, Philip Brey, and Andrew Feenberg (Cambridge, MA: MIT Press, 2003), 185. Dominic Davies describes infrastructures as the “physical, economic, and symbolic scaffolding of empire.” Davies, *Imperial Infrastructure and Spatial Resistance in Colonial Literature, 1880–1930* (Oxford: Peter Lang, 2017), 92. Tim Cresswell highlights that mobility works across scales from the body to the globe, and many colonial officials deployed the metaphor of healthy circulation through the body of the state. Cresswell, “Towards a Politics of Mobility,” 18.

39. Roads are key tools in this process. Marc Desportes, *Paysages en mouvement: Transports et perception de l’espace XVIII^e–XX^e siècle* (Paris: Gallimard, 2005), 38.

40. Harvey and Knox, *Roads*, 186.

41. On the simultaneous expansion of bureaucracy and increasingly diffuse and incoherent power in the colonial context: Bissell, *Urban Design*, 107, 269.

42. Collecting taxes and organizing labor were core functions of the colonial state. Heather J. Sharkey, “African Colonial States,” *OHMAH*, 158. See also Marlous van Waijenburg, “Financing the African Colonial State: The Revenue Imperative and Forced Labor,” *JEH* 78, no. 1 (2018): 40–80.

43. On Nigeria: Marc Matera, Misty L. Bastian, and Susan Kingsley Kent, *The Women's War of 1929: Gender and Violence in Colonial Nigeria* (Houndmills, Basingstoke, UK: Palgrave Macmillan, 2012), 127–130, 165–166, 236. On Ethiopia see chap. 7 below.

44. Mom, *Globalizing Automobility*, 137, 174.

45. Cotten Seiler, *Republic of Drivers: A Cultural History of Automobility in America* (Chicago: University of Chicago Press, 2008), 6. For a related definition of automobility: Paul Josephson, *Traffic* (New York: Bloomsbury, 2016), 6–7. On the wide-ranging social implications of automobility: Mia Bay, *Traveling Black: A Story of Race and Resistance* (Cambridge, MA: Belknap Press of Harvard University Press, 2021), chap. 3.

46. On the challenge of importing fuel and resultant hybrid energy regimes: John Cropper, “Running on Empty: Fossil Fuels, Local Fuels, and Entangled Infrastructures in Colonial Senegal, 1885–1945,” *JAH* 63, no. 1 (2022): 19–36.

47. Myron Echenberg and Jean Filipovich, “African Military Labour and the Building of the Office du Niger Installations, 1925–1950,” *JAH* 27, no. 3 (1986): 536.

48. Chapter 6 offers detailed calculations drawn from historic sources to estimate that one mile of road required 8,000 worker days to complete in the 1930s, which would equate to 2.8 billion worker days to construct a network of 350,000 miles. Two billion is thus a conservative estimate that accounts for roads constructed more summarily or that built on preexisting portage routes.

49. In the colonial context (French Indochina, in this case), motor vehicles were as much about “keeping disagreeable things and people away” as facilitating movement. Stéphanie Ponsavady, *Cultural and Literary Representations of the Automobile in French Indochina: A Colonial Roadshow* (Cham, Switzerland: Palgrave Macmillan, 2018), 5.

50. TNA, CO 533/309, Report from L. D. Galton-Fenzi to Governor-General of Sudan, March 16, 1924.

51. Rudy Koshar, “On the History of the Automobile in Everyday Life,” *CEH* 10, no. 1 (2001): 147. Philip Deloria highlights the visibility and performativity of early driving in the United States: Deloria, *Indians in Unexpected Places* (Lawrence: University Press of Kansas, 2004), 136. On automotive perception: Tim Dant, “The Driver-Car,” *TCS* 21, no. 4/5 (2004): 61–79; Desportes, *Paysages en mouvement*. The urtext on historical mobility and perception is Wolfgang Schivelbusch, *The Railway Journey: The Industrialization of Time and Space in the Nineteenth Century* (Berkeley: University of California Press, 1986).

52. Gijs Mom, *Atlantic Automobility: Emergence and Persistence of the Car, 1895–1940* (New York: Berghahn Books, 2015), 1.

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

54. Gijs Mom suggests parallel development rather than diffusion. Mom, *Atlantic Automobility*, 27.

55. On the image of the Indian in American car culture: Deloria, *Indians*, 136–182.

56. Adelaja Odutola Odukoya, “Settler and Non-settler Colonialism in Africa,” in *The Palgrave Handbook of African Politics, Governance and Development*, ed. Samuel Ojo Olorunjobi and Toyin Falola (New York: Palgrave Macmillan, 2018), 183. On the unique dynamics of settler colonies: Edward Cavanagh and Lorenzo Veracini, eds., *The Routledge Handbook of the History of Settler Colonialism* (New York: Routledge, 2016); Patrick Wolfe, “Settler Colonialism and the Elimination of the Native,” *Journal of Genocide Research* 8, no. 4 (2006): 387–409.

57. Allen M. Howard, "Actors, Places, Regions, and Global Forces: An Essay on the Spatial History of Africa since 1700," in *Respacing Africa*, ed. Ulf Engel and Paul Nugent (Leiden: Brill, 2010), 11–44, here 25.

58. Benjamin D. Hopkins, *Ruling the Savage Periphery: Frontier Governance and the Making of the Modern State* (Cambridge, MA: Harvard University Press, 2020), 12, 15.

59. On the importance of context to the history of technology and mobility in Africa: Clapperton Chakanetsa Mavhunga, Jeroen Cuvelier, and Katrien Pype, "'Containers, Carriers, Vehicles': Three Views of Mobility from Africa," *Transfers* 6, no. 2 (2016): 43–53, here 46.

On British colonies and postcolonial states: Kwabena Opare Akurang-Parry, "Colonial Forced Labor Policies for Road-Building in Southern Ghana and International Anti-Forced Labor Pressures, 1900–1940," *AEH* 28 (2000): 1–25; Kwabena O. Akurang-Parry, "'The Loads Are Heavier Than Usual': Forced Labor by Women and Children in the Central Province, Gold Coast (Colonial Ghana), ca. 1900–1940," *AEH* 30 (2002): 31–51; C. A. Baker, "Malawi's Early Road System," *Society of Malawi Journal* 24, no. 1 (1971): 7–21; Domenico Cristofaro, "From Caravans to Lorries: Shifting Patterns of Mobility and Colonial Roadmaking in Northern Ghana (1896–1936)," *International Journal of African Historical Studies* 53, no. 3 (2020): 289–314; Philip Drummond-Thompson, "The Rise of Entrepreneurs in Nigerian Motor Transport: A Study in Indigenous Enterprise," *JTH* 14, no. 1 (1993): 46–63; Jan-Bart Gewald, "People, Mines and Cars: Towards a Revision of Zambian History, 1890–1930," in *The Speed of Change: Motor Vehicles and People in Africa, 1890–2000*, ed. Jan-Bart Gewald, Sabine Luning, and Klaas van Walraven (Leiden: Brill, 2009), 21–47; Joshua Grace, *African Motors: Technology, Gender, and the History of Development* (Durham, NC: Duke University Press, 2021); Jennifer Hart, *Ghana on the Go: African Mobility in the Age of Motor Transportation* (Bloomington: Indiana University Press, 2016); Simon Heap, "The Development of Motor Transport in the Gold Coast, 1900–1939," *JTH* 11, no. 2 (1990): 19–37; Sarah Kunkel, "Forced Labour, Roads, and Chiefs: The Implementation of the ILO Forced Labour Convention in the Gold Coast," *International Review of Social History* 63, no. 3 (2018): 449–476; Mark Lamont and Rebekah Lee, "Arrive Alive: Road Safety in Kenya and South Africa," *T&C* 56, no. 2 (2015): 464–488; Alois S. Mlambo, "From Dirt Tracks to Modern Highways: Towards a History of Roads and Road Transportation in Colonial Zimbabwe, 1890 to World War II," *Zambezia* 21, no. 2 (1994): 147–166; Barbara Ntombi Ngwenya, "The Development of Transport Infrastructure in the Bechuanaland Protectorate 1885–1966," *Botswana Notes and Records* 16 (1984): 73–84; O. N. Njoku, "Development of Roads and Road Transport in Southeastern Nigeria, 1903–1939," *Journal of African Studies* 5, no. 4 (1978): 471–497; Ken Swindell, "The Struggle for Transport Labor in Northern Nigeria, 1900–1912: A Conflict of Interests," *AEH* 20 (1992): 137–159; Brian J. Turton, "The Road Motor Services of Rhodesia, 1927–38," *JTH* 18, no. 1 (1997): 1–15; Elizabeth Wrangham, "An African Road Revolution: The Gold Coast in the Period of the Great War," *JICH* 32, no. 1 (2004): 1–18.

On French colonies and federations and postcolonial states: Erdmute Alber, "Motorization and Colonial Rule: Two Scandals in Dahomey, 1916," *Journal of African Cultural Studies* 15, no. 1 (2002): 79–92; Megan Brown, "Le Rallye Méditerranée–Le Cap: Racing towards Eurafrica?," *French Politics, Culture & Society* 38, no. 2 (Summer 2020): 80–104; Babacar Fall, *Le Travail forcé en Afrique Occidentale française (1900–1946)* (Paris: Karthala, 1993); Marcus Filippello, *The Nature of the Path: Reading a West African Road* (Minneapolis: University of Minnesota Press, 2017); Libbie Freed, "Conduits of Culture and Control: Roads, States, and Users in French Central Africa, 1890–1960" (PhD diss., University of Wisconsin–Madison, 2006); Libbie Freed, "Networks of (Colonial) Power: Roads in French Central Africa after World War I," *H&T* 26, no. 3 (2010): 203–223; Tamara 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, no. 2 (1996): 245–275; Léon Kaptue, *Travail et main-d'oeuvre au Cameroun sous régime français, 1916–1952* (Paris: Harmattan, 1986); Alexander Keese, "Hunting 'Wrongdoers' and 'Vagrants': The Long-Term Perspective of Flight, Evasion, and Persecution in Colonial and Postcolonial Congo-Brazzaville, 1920–1980," *AEH* 44 (2016): 152–180; Serge La Barbera, "La Route dans la Tunisie coloniale: Outil de colonisation et vecteur de tourisme," in *Le Tourisme dans l'empire français—politiques, pratiques et imaginaires (XIX^e–XX^e siècles)*, ed. Colette Zytnicki and Habib Kazdaghi, (Paris: Publications de la Société française d'histoire d'outre mer, 2009), 195–203; Aïssatou Mbodj-Pouye, "Radio and the Road: Infrastructure, Mobility, and Political Change in the Beginnings of Radio Rurale de Kayes (1980–early 2000s)," *JAH* 62, no. 1 (2021): 125–149; Alison Murray, "Le Tourisme Citroën au Sahara (1924–1925)," *Vingtième siècle. Revue d'histoire* 68 (October–December 2000): 95–107; Alison Murray Levine, "Film and Colonial Memory: *La Croisière noire* 1924–2004," in *Memory, Empire, and Postcolonialism: Legacies of French Colonialism*, ed. Alec G. Hargreaves (Lanham, MD: Lexington Books, 2005), 81–97; Yves J. Saint-Martin, "Les premières automobiles sur les bords du Niger. Félix Dubois et la Compagnie des transports par automobiles du Soudan français, 1898–1913," *Revue française d'histoire d'outre-mer* 60, no. 221 (1973): 589–615; Ibra Sene, "Colonisation française et main d'oeuvre carcérale au Sénégal: De l'emploi des détenus des camps pénaux sur les chantiers des travaux routiers (1927–1940)," *French Colonial History* 5 (2004): 153–171; Romain Tiquet, *Travail forcé et mobilisation de la main-d'œuvre au Sénégal: Années 1920–1960* (Rennes: Presses Universitaires de Rennes, 2019).

On German colonies: Jan-Bart Gewald, "Missionaries, Hereros, and Motorcars: Mobility and the Impact of Motor Vehicles in Namibia before 1940," *International Journal of African Historical Studies* 35, no. 2/3 (2002): 257–285; Jan-Bart Gewald, "*We Thought We Would Be Free . . .*": *Socio-cultural Aspects of Herero History in Namibia, 1915–1940* (Cologne: Rüdiger Köppe Verlag, 2000), chap. 7; Andreas Greiner, "Colonial Schemes and African Realities: Vernacular Infrastructures and the Limits of Roadbuilding in German East Africa," *JAH* 63, no. 3 (2022): 328–347; Greiner, *Human Portage*.

On Belgian colonies: Epanya Sh. Tshund'olela, "Motor Transport in a Developing Area: (i) Zaïre, 1903–59," in *The Economic and Social Effects of the Spread of Motor Vehicles: An International Centenary Tribute*, ed. Theo Barker (Houndmills, Basingstoke, UK: Macmillan, 1987), 236–255.

On Italian colonies: Mattia C. Bertazzini, "The Long-Term Impact of Italian Colonial Roads in the Horn of Africa, 1935–2015," *Journal of Economic Geography* 22 (2022): 181–214; Caitlin Collis, "Paving the Way to Empire: Roads in Ethiopia from Menelik to Mussolini" (PhD diss., University of Pennsylvania, 2022); Andrew Denning, "Infrastructural Propaganda: The Visual Culture of Colonial Roads and the Domestication of Nature in Italian East Africa," *Environmental History* 24, no. 2 (2019): 352–369; Emilio Distretti, "The Life Cycle of the Libyan Coastal Highway: Italian Colonialism, Coloniality, and the Future of Reparative Justice in the Mediterranean," *Antipode* 53, no. 5 (2021): 1421–1441; Stefano Maggi, "La costruzione delle infrastrutture di trasporto in Eritrea, 1885–1936," *Storia Urbana* 20, no. 74 (1996): 23–44; Richard Pankhurst, "Road-Building during the Italian Fascist Occupation of Ethiopia (1936–1941)," *Africa Quarterly* 15, no. 3 (1975): 21–63.

On the postcolonial dynamics of African cars and roads: Kurt Beck, Gabriel Klaeger, and Michael Stasik, eds., *The Making of the African Road* (Leiden: Brill, 2017); Kenny Cupers and Prita Meier, "Infrastructure between Statehood and Selfhood: The Trans-African Highway," *Journal of the Society of Architectural Historians* 79, no. 1 (March 2020): 61–81; Rony Emmenegger, *The Roads of Decentralisation: The History of Rural Road Construction in Ethiopia*, NCCR North-South Dialogue no. 39 (Bern and Zurich: NCCR

North-South, 2012); Lindsey B. Green-Simms, *Postcolonial Automobility: Car Culture in West Africa* (Minneapolis: University of Minnesota Press, 2017); Gabriel Klaeger, “Dwelling on the Road: Routines, Rituals and Roadblocks in Southern Ghana,” *Africa* 83, no. 3 (2013): 446–469; Adeline Masquelier, “Road Mythographies: Space, Mobility, and the Historical Imagination in Postcolonial Niger,” *American Ethnologist* 29, no. 4 (2002): 829–856; Kenda Mutongi, *Matatu: A History of Popular Transport in Nairobi* (Chicago: University of Chicago Press, 2017).

60. David Arnold, “Europe, Technology, and Colonialism in the 20th Century,” *H&T* 21, no. 1 (2005): 95.

61. On the broadly “imperial” dynamics of automobility in one European empire: Georgine Clarsen, “Machines as the Measure of Women: Colonial Irony in a Cape to Cairo Automobile Journey, 1930,” *JTH* 29, no. 1 (2008): 44–63; Andrew Denning, “Mobilizing Empire: The Citroën Central Africa Expedition and the Interwar Civilizing Mission,” *T&C* 61, no. 1 (2020): 42–70; James B. Wolf, “Imperial Integration on Wheels: The Car, the British and the Cape-to-Cairo Route,” in *Literature and Imperialism*, ed. Robert Giddings (New York: St. Martin’s, 1991), 112–127; Tal Zalmanovich, “‘Woman Pioneer of Empire’: The Making of a Female Colonial Celebrity,” *Postcolonial Studies* 12, no. 2 (2009): 193–210.

62. Krüger, *Die Straßen der Welt*, 122; Gordon Pirie, “Automobile Organizations Driving Tourism in Pre-independence Africa,” *Journal of Tourism History* 5, no. 1 (2013): 73–91; Gordon Pirie, “Non-urban Motoring in Colonial Africa in the 1920s and 1930s,” *South African Historical Journal* 63 (2011): 38–60.

63. On transimperial history: Daniel Hedinger and Nadin Heé, “Transimperial History—Connectivity, Cooperation and Competition,” *JMEH* 16, no. 4 (2018): 429–452. On transnational histories, denaturalizing nation-states as “containers” for history, and making the creation and maintenance of spaces such as “the colony” the center of historical inquiry: Ángel Alcáde, “Spatializing Transnational History: European Spaces and Territories,” *European Review of History: Revue européenne d’histoire* 25, no. 3–4 (2018): 553–567.

64. Arnold, “Europe, Technology, and Colonialism,” 99. Relatively few studies develop a comparative or transimperial framework for colonial roads and automobility: Georgine Clarsen and Lorenzo Veracini, “Settler Colonial Automobilities: A Distinct Constellation of Automobile Cultures,” *History Compass* 10, no. 12 (2012): 889–900; Jan-Bart Gewald, Sabine Luning, and Klaas van Walraven, eds., *The Speed of Change: Motor Vehicles and People in Africa, 1890–2000* (Leiden: Brill, 2009); Mom, *Globalizing Automobility*, 133–152; Pirie, “Automobile Organizations”; Pirie, “Non-urban Motoring.”

65. Transimperial history demands a “multi-sited historiography” that engages closely with national and regional histories while remaining attuned to cross-border connections. A. Zimmerman, “Africa in Imperial and Transnational History: Multi-sited Historiography and the Necessity of Theory,” *JAH* 54, no. 3 (2013): 331. On the value of transimperial and “cross-colonial” frameworks: Stoler and Cooper, “Between Colony and Metropole,” esp. 12–13, 28; Stoler and McGranahan, “Introduction,” esp. 5–6, 9. Georgine Clarsen and Lorenzo Veracini describe automobility as a transnational social formation rather than distinct national cultures. Clarsen and Veracini, “Settler Colonial Automobilities,” 892.

66. Clapperton Chakanetsa Mavhunga, *Transient Workspaces: Technologies of Everyday Innovation in Zimbabwe* (Cambridge, MA: MIT Press, 2014).

67. Hedinger and Heé, “Transimperial History,” 430.

68. Richard Reid and John Parker, “Introduction—African Histories: Past, Present, and Future,” *OHMAH*, 3–5; 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), 5–6, 399–400; Martin W. Lewis and Karen E. Wigen, *The Myth of Continents: A Critique of Metageography* (Berkeley: University of California Press, 1997), 3. On the invention of the Saharan historiographical and civilizational

divide: Ghislaine Lydon, “Saharan Oceans and Bridges, Barriers and Divides in Africa’s Historiographical Landscape,” *JAH* 56, no. 1 (2015): 3–22; Baz Lecocq, “Distant Shores: A Historiographic View on Trans-Saharan Space,” *JAH* 56, no. 1 (2015): 23–36.

69. Alison Frank Johnson, “Europe without Borders: Environmental and Global History in a World after Continents,” *CEH* 31, no. 1 (2022): 140.

70. Arnold, “Europe, Technology, and Colonialism,” 88; Adas, *Machines*.

71. Corey Ross, *Ecology and Power in the Age of Empire: Europe and the Transformation of the Tropical World* (New York: Oxford University Press, 2017), 7. See also Helen Tilley, *Africa as a Living Laboratory: Empire, Development, and the Problem of Scientific Knowledge, 1870–1950* (Chicago: University of Chicago Press, 2011).

72. On “decision space” and “identity space”: Maier, *Once within Borders*, 3.

73. Van Waijenburg, “Financing,” 42.

74. Ann Laura Stoler, *Along the Archival Grain: Epistemic Anxieties and Colonial Common Sense* (Princeton, NJ: Princeton University Press, 2009).

1. ROADS BEFORE CARS IN FRENCH MADAGASCAR

1. On place names: In the 1970s, as part of a nationalist, anticolonial campaign in independent Madagascar, the government mandated the use of Malagasy place names. Nevertheless, most major towns and cities (beyond the capital of Antananarivo, known in French as Tananarive), continue to be called by their French-colonial names within Madagascar. This chapter lists both place names upon first reference, then uses the French place name in subsequent references (Antananarivo excluded). Solofo Randrianja and Stephen Ellis, *Madagascar: A Short History* (Chicago: University of Chicago Press, 2009), 14.

2. Gallieni to Joseph Chaillay-Bert, February 6, 1899; Gallieni to Chaillay-Bert, February 9, 1899; Maréchal Gallieni, “Lettres de Madagascar: 1896–1905: I,” *RDM*, Septième Periode, 44, no. 4 (April 15, 1928): 786–787, 794.

3. ANOM, 1TP/1022/10, Director of Travaux Publics, “Les voies de communication à Madagascar,” October 19, 1910, 1.

4. On colonies as laboratories: David Arnold, “Europe, Technology, and Colonialism in the 20th Century,” *H&T* 21, no. 1 (2005): 85–106; Helen Tilley, *Africa as a Living Laboratory: Empire, Development, and the Problem of Scientific Knowledge, 1870–1950* (Chicago: University of Chicago Press, 2011).

5. On roads in the metropole: Eugen Weber, *Peasants into Frenchmen: The Modernization of Rural France, 1870–1914* (Stanford, CA: Stanford University Press, 1976), 195–220.

6. Gwyn Campbell, “Labour and the Transport Problem in Imperial Madagascar,” *JAH* 21 (1980): 343, 345, 354; Gwyn Campbell, *An Economic History of Imperial Madagascar, 1750–1895: The Rise and Fall of an Island Empire* (New York: Cambridge University Press, 2005), 244–246.

7. Tasha Rijke-Epstein, “On Humble Technologies: Containers, Care, and Water Infrastructure in Northwest Madagascar, 1750s–1960s,” *H&T* 37, no. 3 (2021): 317.

8. Marc Desportes, *Paysages en mouvement: Transports et perception de l’espace XVIII^e–XX^e siècle* (Paris: Gallimard, 2005), 38.

9. On this dynamic: Tony Ballantyne, “On Place, Space and Mobility in Nineteenth-Century New Zealand,” *New Zealand Journal of History* 45, no. 1 (2011): 50–70, esp. 56–57; Jo Guldi, *Roads to Power: Britain Invents the Infrastructure State* (Cambridge, MA: Harvard University Press, 2012).

10. Jean Fremigacci has argued for the centrality of rail politics to the French colonial vision: Fremigacci, “Les Chemins de fer de Madagascar (1901–1936): Une modernisation manquée,” *Afrique & Histoire* 6, no. 2 (2006): 161–191. Rail length figure: Hugues Berthier, “Des moyens de communication et de transport à Madagascar,” *Conférences publiques sur*

Madagascar faites à l'École Coloniale pendant l'année scolaire 1909–1910 (Paris: Revue de Madagascar, 1910), 10.

11. Gallieni typifies the role of French military officers as “organizers of empire” in the decades before World War I. Christophe Bonneuil, *Des savants pour l'empire: La structuration des recherches scientifiques coloniales au temps de “la mise en valeur des colonies françaises”: 1917–1945* (Paris: Éditions ORSTOM, 1991), 16; Krishan Kumar, *Visions of Empire: How Five Imperial Regimes Shaped the World* (Princeton, NJ: Princeton University Press, 2017), 426.

12. Alice Conklin, *A Mission to Civilize: The Republican Idea of Empire in France and West Africa, 1895–1930* (Stanford, CA: Stanford University Press, 1997).

13. Sven Beckert, “American Danger: United States Empire, Eurafrica, and the Territorialization of Industrial Capitalism, 1870–1950,” *AHR* 122, no. 4 (2017): 1137–1170; Charles S. Maier, *Once within Borders: Territories of Power, Wealth, and Belonging since 1500* (Cambridge, MA: Belknap Press of Harvard University Press, 2016).

14. David Todd, *A Velvet Empire: French Informal Imperialism in the Nineteenth Century* (Princeton, NJ: Princeton University Press, 2021), 1.

15. Tyler Stovall, *Transnational France: The Modern History of a Universal Nation* (New York: Routledge, 2018), 207–244.

16. Randrianja and Ellis, *Madagascar*, 17–43; Pierre Vérin, *Madagascar* (Paris: Karthala, 2000), 31–50.

17. Mervyn Brown, *A History of Madagascar* (Princeton, NJ: Markus Wiener, 2000), 30–110; Vérin, *Madagascar*, 83–122; Michael P. M. Finch, *A Progressive Occupation? The Gallieni-Lyautey Method and Colonial Pacification in Tonkin and Madagascar, 1885–1900* (Oxford: Oxford University Press, 2013), 174–176; Stephen Ellis, *The Rising of the Red Shaws: A Revolt in Madagascar, 1895–1899* (Cambridge: Cambridge University Press, 1985), 12–16.

18. Campbell, “Labour,” 343; Campbell, *Economic History*, 3, 8–10, 59–78, 271.

19. Brown, *Madagascar*, 202–212; Campbell, *Economic History*, 12–14, 260–264; Vérin, *Madagascar*, 144–146; Ellis, *Red Shaws*, 31–36, 62–66; Randrianja and Ellis, *Madagascar*, 149–152. On Merina-European diplomatic relations: Phares Mukasa Mutibwa, *The Malagasy and the Europeans: Madagascar's Foreign Relations, 1861–1895* (Atlantic Highlands, NJ: Humanities, 1974).

20. Raphaël Cheriau, “The French Flag in Zanzibar Waters 1860s–1900s: Abolition and Imperial Rivalry in the Western Indian Ocean,” *JICH* 49, no. 1 (2021): 44–69; Campbell, *Economic History*, chap. 12.

21. Marc Michel, *Gallieni* (Paris: Fayard, 1989), 181.

22. Vérin, *Madagascar*, 148.

23. Finch, *Progressive Occupation*, 172.

24. Brown, *Madagascar*, 202–234; Vérin, *Madagascar*, 144–151. Unification of civilian and military authority in Gallieni: Finch, *Progressive Occupation*, 177–179. Destruction of the Merina monarchy: Finch, 205–207.

25. Conklin, *Mission*, 5, 39.

26. Berthier, “Moyens,” 3.

27. Colonel [Pierre] Roques, “Rapport du Directeur des Travaux Publics,” in *Madagascar de 1896 à 1905: Rapport du Général Gallieni, gouverneur général, au ministre des colonies (30 Avril 1905): Annexes* (Tanananarive: Imprimerie Officielle de Tanananarive, 1905), 421.

28. Vérin, *Madagascar*, 21–24.

29. Paul Sutter, “The Tropics: A Brief History of an Environmental Imaginary,” in *The Oxford Handbook of Environmental History*, ed. Andrew C. Isenberg (New York: Oxford University Press, 2014), 178, 188; Corey Ross, *Ecology and Power in the Age of Empire: Europe and the Transformation of the Tropical World* (New York: Oxford University Press, 2017).

30. Gallieni to Alfred Grandidier, April 16, 1903, Maréchal Gallieni, "Lettres de Madagascar: 1896–1905: II," *RDM*, Septième Période, 45, no. 1 (May 1, 1928): 70.
31. *Madagascar de 1896 à 1905*, 348, 367–368.
32. Paul Landau, "Empires of the Visual: Photography and Colonial Administration in Africa," in *Images and Empires: Visuality in Colonial and Postcolonial Africa*, ed. Paul S. Landau and Deborah D. Kaspin (Berkeley: University of California Press, 2002), 141–171.
33. Daniel Foliard, "Colonialism and Its Regimes of Visibility: Edgard Imbert's Views of the French Empire," *JICH* 49, no. 2 (2021): 223–259.
34. Ross, *Ecology*, 163.
35. Campbell, *Economic History*, 133. On *fanompoana*: Campbell, *Economic History*, chap. 5; Gwyn Campbell, "Madagascar and the Slave Trade, 1810–1895," *JAH* 22, no. 2 (1981): 203–227; Campbell, "Labour," 218–219.
36. On precolonial portage: Campbell, *Economic History*, 246–259.
37. *Madagascar de 1896 à 1905*, 340.
38. Berthier, "Moyens," 6–7.
39. ANOM, 1TP/1000, "Rapport de Mission du Colonel Marmier au sujet des voies de communication appelées à relier Tananarive à la côte," January 26, 1896, 1.
40. Hubert Lyauté, *Lettres du Tonkin et de Madagascar (1894–1899). Tome II* (Paris: Armand Colin, 1920), 187.
41. ANOM, 1TP/1000, "Rapport Marmier," 1–2; *Madagascar de 1896 à 1905*, 368.
42. Berthier, "Moyens," 5–6. The conquest was "a medical cataclysm" for the French: Eric T. Jennings, *Perspectives on French Colonial Madagascar* (New York: Palgrave Macmillan, 2017), 45.
43. Brown, *Madagascar*, 227–231.
44. ANOM, 1TP/356/4, Gallieni to Minister of Colonies, December 26, 1897.
45. ANOM, 1TP/356/2, Direction des Travaux Publics, Colonie de Madagascar et Dépendances, "Congrès de l'Afrique Orientale—1910—Transports Terrestres," 175–176.
46. ANOM, MAD GGM D/5(9)1, Gruss, "Rapport sur le Service des Automobiles (août 1900–1^{er} janvier 1905)," February 1, 1905.
47. *Madagascar de 1896 à 1905*, 369; ANOM, 1TP/356/2, "Congrès de l'Afrique Orientale," 175–176.
48. Gallieni to Grandidier, October 25, 1896, Gallieni, "Lettres de Madagascar I," 780.
49. Finch, *Progressive Occupation*, 168–222.
50. Gallieni to Grandidier, October 25, 1896, Gallieni, "Lettres de Madagascar I," 780.
51. Finch, *Progressive Occupation*, 168.
52. Berthier, "Moyens," 7.
53. ANOM, 1TP/356/4, Gallieni to Minister of Colonies, December 26, 1897.
54. ANOM, 1TP/356/4, Gallieni to Minister of Colonies, March 26, 1898.
55. Berthier, "Moyens," 7.
56. ANOM, 1TP/1127/5, "Extrait du rapport de l'Inspecteur des Travaux Publics: Route de Tamatave à Tananarive," July 24, 1897.
57. ANOM, 1TP/1127/5, Gallieni, "Instruction pour l'étude de détail du projet de route de Tananarive à Moromanga," August 17, 1897.
58. Capitaine Gruss, "Rapport du Chef du Service des Automobiles," in *Madagascar de 1896 à 1905: Annexes*, 137.
59. *Madagascar de 1896 à 1905*, 370, 378.
60. Penny Harvey and Hannah Knox, *Roads: An Anthropology of Infrastructure and Expertise* (Ithaca, NY: Cornell University Press, 2015), 39, 71.
61. ANOM, 1TP/1000, "Rapport Marmier," 5–6.
62. ANOM, 1TP/356/4, Gallieni to Minister of Colonies, December 26, 1897.
63. Gallieni to Chailley-Bert, December 26, 1903, Gallieni, "Lettres de Madagascar II," 79.

64. ANOM, 1TP/356/4, Gallieni to Minister of Colonies, December 26, 1897.
65. ANOM, 1TP/1127/5, Gallieni, "Instruction pour l'étude."
66. *Madagascar de 1896 à 1905*, 511–512; Roques, "Rapport du Directeur," 436–437.
67. Randrianja and Ellis, *Madagascar*, 158.
68. *Madagascar de 1896 à 1905*, 371, 500–501; Michel, *Gallieni*, 209.
69. Guy Jacob, "Gallieni et l'impôt moralisateur à Madagascar: Théorie, pratiques et conséquences (1901–1905)," *Revue française d'histoire d'outre-mer* 74, no. 277 (1987): 431–473.
70. Patricia Hayes, "Empty Photographs: Ethnography and the Lacunae of African History," in *Ambivalent: Photography and Visibility in African History*, ed. Patricia Hayes and Gary Minkley (Athens: Ohio University Press, 2019), 58–62.
71. Ellis, *Red Shawls*, 143.
72. Joseph-Simon Gallieni, *Neuf ans à Madagascar* (Paris: Hachette, 1971 [1906]), 394.
73. *Madagascar de 1896 à 1905*, 371–372.
74. *Madagascar de 1896 à 1905*, 505; Gallieni to Chailley-Bert, December 26, 1903, Gallieni, "Lettres de Madagascar II," 80. Jean Fremigacci, "Le Code de l'indigénat à Madagascar (1901–1946)," *Outre-mers* 100, no. 378–379 (2013): 254.
75. Le Hérissé, "Madagascar et le rapport Le Hérissé," *Revue de Madagascar* 8, no. 1 (1906): 12–20.
76. Le Hérissé, "Madagascar," 15; Brown, *Madagascar*, 239.
77. Capitaine Gruss, "Les Automobiles en Madagascar," *Revue de Madagascar* 4, no. 1 (1902): 193–194.
78. ANOM, 1TP/356/4, Gallieni to Minister of Colonies, March 26, 1898.
79. ANOM, 1TP/356/1, President of *L'Automobile* to Bricka, March 7, 1898.
80. ANOM, 1TP/356/1, Deydon to Minister of Colonies, April 27, 1898.
81. Gruss, "Automobiles," 193.
82. Gallieni, *Neuf ans*, 394–395.
83. Joseph-Simon Gallieni, "Les Transports par automobiles à Madagascar," *Journal Officiel de Madagascar et dépendances* 17, no. 534 (September 12, 1900): 4752.
84. ANOM, "Congrès de l'Afrique Orientale," 54.
85. Hubert Lyautey, *Paroles d'Action: Madagascar, Sud-Oranais, Oran, Maroc (1900–1926)* (Paris: Armand Colin, 1927), 13–14.
86. *Madagascar de 1896 à 1905*, 379.
87. ANOM, 1TP/356/2, "Congrès de l'Afrique Orientale," 185–186.
88. "Le Retour de Général Gallieni," *La Nouvelle Revue* (Nouvelle Série) 26, no. 35 (July–August 1905): 280–283.
89. Gruss, "Automobiles," 196.
90. ANOM, MAD GGM D/5(9)1, Gruss, "Rapport."
91. Gruss, "Automobiles," 208–215.
92. ANOM, MAD GGM D/5(9)1, Gruss, "Rapport."
93. Gruss, "Automobiles," 203–207; ANOM, MAD GGM D/5(9)1, Gruss, "Rapport."
94. On geographical transfer and cultural diffusion in colonial technologies: Daniel Headrick, *The Tentacles of Progress: Technology Transfer in the Age of Imperialism, 1850–1940* (New York: Oxford University Press, 1988), 9.
95. David Edgerton, "The Contradictions of Techno-nationalism and Techno-globalism: A Historical Perspective," *New Global Studies* 1, no. 1 (2007): 29.
96. ANOM, MAD GGM D/5(9)1, Gruss, "Rapport."
97. See Peter D. Norton, *Fighting Traffic: The Dawn of the Motor Age in the American City* (Cambridge, MA: MIT Press, 2008).
98. ANOM, MAD GGM D/5(9)1, Gruss, "Rapport."
99. Gallieni to Jules Charles-Roux, March 15, 1903, Gallieni, "Lettres de Madagascar II," 68–69; *Madagascar de 1896 à 1905*, 137.

100. On this dynamic in colonial Indochina: David Del Testa, "Automobiles and Anomie in French Colonial Indochina," in *France and Indochina: Cultural Representations*, ed. Kathryn Robson and Jennifer Yee (Lanham, MD: Lexington Books, 2005), 67.
101. ANOM, ITP/356/2, "Congrès de l'Afrique Orientale," 259–260.
102. See the charts and maps in the appendices: ANOM, ITP/1022/10, "Les Voies de communication à Madagascar."
103. *Madagascar de 1896 à 1905*, 385.
104. "Le Réseau routier de Madagascar," AC, Supplément illustré (May 1, 1928): 1.
105. ANOM, ITP/356/2, "Congrès de l'Afrique Orientale," 180.
106. Gruss, "Rapport du Chef," 155.
107. ANOM, MAD GGM D/5(9)1, Gruss, "Rapport."
108. Berthier, "Moyens," 11–12.
109. ANOM, ITP/356/2, "Congrès de l'Afrique Orientale," 188–189.
110. ANOM, ITP/356/2, "Congrès de l'Afrique Orientale," 61–65.
111. ANOM, ITP/356/2, "Congrès de l'Afrique Orientale," 183–184, 263–268.
112. David Edgerton, *The Shock of the Old: Technology and Global History since 1900* (London: Profile Books, 2006), 76.
113. ANOM, ITP/335/6, "Rapport de l'ingénieur, inspecteur des Travaux Publics des Colonies: Le programme des travaux publics de Madagascar," November 30, 1912.
114. Le Hérisse, "Madagascar," 13–14.
115. Solofo Randrianja, *Société et luttes anticoloniales à Madagascar de 1896 à 1946* (Paris: Karthala, 2001), 46; Yvan-Georges Paillard and Jean Boutonne, "Espoirs et déboires de l'immigration européenne à Madagascar sous Gallieni: De colonisation militaire," *Revue française d'histoire d'outre-mer* 65, no. 240 (1978): 347.
116. ANOM, ITP/335/6, "Rapport de l'ingénieur."
117. ANOM, ITP/335/6, "Rapport de l'ingénieur"; ANOM, ITP/356/2, "Congrès de l'Afrique Orientale," 228–231.
118. ANOM, ITP/356/2, "Congrès de l'Afrique Orientale," 186–168.
119. Randrianja, *Société*.

2. CARS WITHOUT ROADS IN GERMAN EAST AFRICA

1. Paul Graetz, *Im Auto quer durch Afrika* (Berlin: Gustav Braunbeck & Gutenberg, 1910), 5–6.
2. "Across Africa by Motor-Car," *Motor-Car Journal* 9, no. 441 (August 17, 1907): 536; "German East Africa: Across Africa by Motor," *East African Standard, Mombasa Times & Uganda Argus*, August 3, 1907, 13.
3. On Graetz: Joshua Grace, *African Motors: Technology, Gender, and the History of Development* (Durham, NC: Duke University Press, 2021), 43–45; Jan-Bart Gewald, "People, Mines and Cars: Towards a Revision of Zambian History, 1890–1930," in *The Speed of Change: Motor Vehicles and People in Africa, 1890–2000*, ed. Jan-Bart Gewald, Sabine Luning, and Klaas van Walraven (Leiden: Brill, 2009), 38–39; Ulrike Claas and Paul Roscoe, "Hot Air and the Colonialist 'Other': The 'German-English-Dutch Airship Expedition' to New Guinea," *Journal of the Royal Anthropological Institute* 15 (2009): 131–150.
4. On the early, informal stage of empire: Steven Press, *Rogue Empires: Contracts and Conmen in Europe's Scramble for Africa* (Cambridge, MA: Harvard University Press, 2017).
5. The model of the entrepreneurial imperialist had deep roots in Germany, where colonialism was both a state project and "a liberal and individualist venture." Jens-Uwe Guettel, "From the Frontier to German South-west Africa: German Colonialism, Indians, and American Westward Expansion," *Modern Intellectual History* 7, no. 3 (2010): 540;

Nina Berman, *Impossible Missions? German Economic, Military, and Humanitarian Efforts in Africa* (Lincoln: University of Nebraska Press, 2004).

6. Carroll W. Pursell, "Technologies as Cultural Practice and Production," *T&C* 51, no. 3 (2010): 716.

7. Erdmute Alber, "Motorization and Colonial Rule: Two Scandals in Dahomey, 1916," *Journal of African Cultural Studies* 15, no. 1 (2002): 88.

8. On the expressive/functional and individual/collective divide: Dorte Gert Simonson, "Accelerating Modernity: Time-Space Compression in the Wake of the Aeroplane," *JTH* 26, no. 2 (2005): 99–100, 112.

9. Graetz, *Im Auto*, 46.

10. Gijs Mom cautions against assuming that "the car is unthinkable without the (paved) road." Mom, *Atlantic Automobilmism: Emergence and Persistence of the Car, 1895–1940* (New York: Berghahn Books, 2015), 572.

11. On the conjoining of route and vehicle in railroads: Wolfgang Schivelbusch, *The Railway Journey: The Industrialization of Time and Space in the Nineteenth Century* (Berkeley: University of California Press, 1986), 19. On the car's "flexible geographies": Barney Warf, *Time-Space Compression: Historical Geographies* (New York: Routledge, 2008), 153. On the colonial car's "anticipatory geography": Georgine Clarsen and Lorenzo Veracini, "Settler Colonial Automobilities: A Distinct Constellation of Automobile Cultures?," *History Compass* 10, no. 12 (2012): 889–900.

12. Initial forays with mobile technologies such as the automobile "impose the most important ruptures in the experience of the traveler" and produce "new ways of seeing space" that recast "spatial references." Marc Desportes, *Paysages en mouvement: Transports et perception de l'espace XVIII^e–XX^e siècle* (Paris: Gallimard, 2005), 12–13.

13. Graetz, *Im Auto*, 16–17.

14. Graetz, 17–19.

15. Graetz, 40–44.

16. John Iliffe, *A Modern History of Tanganyika* (Cambridge: Cambridge University Press, 1979), 40–52; Bernhard Gissibl, *The Nature of German Imperialism: Conservation and the Politics of Wildlife in Colonial East Africa* (New York: Berghahn Books, 2016), 40–43.

17. Gijs Mom, *Globalizing Automobilmism: Exuberance and the Emergence of Layered Mobility, 1900–1980* (New York: Berghahn Books, 2020), 136–137.

18. Bismarck's change of heart from colonial skeptic to supporter coincided with the Berlin Conference of 1884–1885, convened to bring order to African claims. See Press, *Rogue Empires*, chap. 5. On the intellectual and legal basis for the challenge to Zanzibari sovereignty: Matthew Unangst, "Hinterland: The Political History of a Geographic Category from the Scramble for Africa to Afro-Asian Solidarity," *JGH* 17, no. 3 (2022): 496–514.

19. Iliffe, *Tanganyika*, 88–98; Rainer Tetzlaff, *Koloniale Entwicklung und Ausbeutung: Wirtschafts- und Sozialgeschichte Deutsch-Ostafrikas 1885–1914* (Berlin: Duncker & Humblot, 1970), 26–35.

20. Iliffe, *Tanganyika*, 141; Michael Pesek, *Koloniale Herrschaft in Deutsch-Ostafrika: Expeditionen, Militär und Verwaltung seit 1880* (Frankfurt: Campus, 2005), 17.

21. BAB, R 1001/300, "Bericht über eine vom 13. Juli bis 30. Oktober nach Ostafrika ausgeführte Dienstreise," November 21, 1907, 1–2.

22. Johann Gottfried Benndorf, *Der koloniale Verkehr Deutsch-Ostafrikas. Ein wirtschaftsgeographischer Versuch* (Weida i. Thür.: Thomas & Hubert, 1918), 7–8, 58.

23. Pesek, *Koloniale Herrschaft*, 41–42; Andreas Greiner, "Colonial Schemes and African Realities: Vernacular Infrastructures and the Limits of Roadbuilding in German East Africa," *JAH* 63, no. 3 (2022): 336.

24. BAB, R 1001/220, Bezirksamtman Zache, "Reisebericht," January 23, 1900, 16.
25. BAB, R 1001/300, "Bericht," 29–30.
26. Iliffe, *Tanganyika*, 115–118; Pesek, *Koloniale Herrschaft*, 25–26.
27. Charles S. Maier, *Once within Borders: Territories of Power, Wealth, and Belonging since 1500* (Cambridge, MA: Belknap Press of Harvard University Press, 2016), 11.
28. Barry Neil-Tomlinson, "The Nyassa Chartered Company: 1891–1929," *JAH* 18, no. 1 (1977): 109–128, esp. 114–116; Leroy Vail, "Mozambique's Chartered Companies: The Rule of the Feeble," *JAH* 17, no. 3 (1976): 389–416.
29. BAB, R 1001/220, Zache, "Reisebericht," 14–16.
30. Jan Pierskalla, Alexander De Juan, and Max Montgomery, "The Territorial Expansion of the Colonial State: Evidence from German East Africa 1890–1909," *British Journal of Political Science* 49 (2017): 712.
31. Pesek, *Koloniale Herrschaft*, 12; Michelle Moyd, *Violent Intermediaries: African Soldiers, Conquest, and Everyday Colonialism in German East Africa* (Athens: Ohio University Press, 2014), 188–189.
32. Moyd, *Violent Intermediaries*; Michael Pesek, "Colonial Conquest and the Struggle for the Presence of the Colonial State in German East Africa, 1885–1903," in *Inventing Collateral Damage: Civilian Casualties, War, and Empire*, ed. Stephen J. Rockel and Rick Halpern (Toronto: Between the Lines, 2010), 161–180; Iliffe, *Tanganyika*, 118–119.
33. Greiner, "Colonial Schemes," 338, 340.
34. Benndorf, *Der koloniale Verkehr*, 62–64.
35. BAB, R 1001/220, Zache, "Reisebericht," 21.
36. Andreas Greiner, "Tensions of Transport: Human Portage and State Formation in Colonial East Africa, c. 1890–1914" (PhD diss., Eidgenössische Technische Hochschule Zürich, 2019), 80–81. Iliffe, *Tanganyika*, 166; Thaddeus Sunseri, *Vilimani: Labor Migration and Rural Change in Early Colonial Tanzania* (Portsmouth, NH: Heinemann, 2002), 65–66.
37. I have been unable to locate the Mohesi on either German colonial or contemporary maps; Zache likely references the Muhuwesi River, some ten miles upstream from what is now the Lukwata-Lumesule Game Reserve in south-central Tanzania.
38. BAB, R 1001/220, Zache, "Reisebericht," 38–39.
39. Graetz, *Im Auto*, 89.
40. David Blackburn, *The Conquest of Nature: Water, Landscape, and the Making of Modern Germany* (New York: W. W. Norton, 2006).
41. James McCann, "Ecology and Environment," in *OHMAH*, 23.
42. Benndorf, *Der koloniale Verkehr*, 60.
43. BAB, R 1001/220, Zache, "Reisebericht," 16–17.
44. BAB, R 1001/220, Zache, "Reisebericht," 21–23.
45. BAB, R 1001/220, Vertrag zwischen dem Sultan der Kumwembe-Wahiyao Mwenyi Mataka bin Hamiss il Massininga und dem Bezirksamtman Zache als Vertreter und Beauftragter des Gouvernements, September 20, 1900, 102–103; Iliffe, *Tanganyika*, 135.
46. Andreas Greiner, *Human Portage and Colonial State Formation in German East Africa, 1880s–1914: Tensions of Transport* (Cham, Switzerland: Palgrave Macmillan, 2022), chap. 6.
47. BAB, R 1001/220, Gustav Adolf von Götzen to Kolonial-Abteilung, Auswärtiges Amt, December 21, 1901, 40–41.
48. BAB, R 1001/300, "Bericht," 18.
49. BAB, R 1001/300, "Bericht," 2.
50. For an in-depth discussion of these perceptions as they were shaped in the 1890s: Greiner, *Human Portage*, chap. 2.

51. BAB, R 1001/819, Gustav Adolf von Götzen, “An sämtliche Kaiserlichen Bezirksämter, Bezirksnebenämter, Militärstationen und das Hauptmagazin,” August 26, 1901, 4–6.

52. Benndorf, *Der koloniale Verkehr*, 70.

53. Stephen J. Rockel, *Carriers of Culture: Labor on the Road in Nineteenth-Century East Africa* (Portsmouth, NH: Heinemann, 2006); Grace, *African Motors*, 37–39; Greiner, *Human Portage*, 2.

54. Greiner, *Human Portage*, 14, chaps. 3 and 4.

55. BAB, R 1001/831, “Runderlasse an sämtliche Bezirksämter, Militärstationen, und Militärposten,” March 22, 1905, 7–8; Benndorf, *Der koloniale Verkehr*, 79.

56. BAB, R 1001/300, “Bericht,” 6–7. On Dernburg’s colonial reformism: Steven Press, *Blood and Diamonds: Germany’s Imperial Ambitions in Africa* (Cambridge, MA: Harvard University Press, 2021), 31–35.

57. Sunseri, *Vilimani*, 13–14; Iliffe, *Tanganyika*, 141–151.

58. Sunseri, *Vilimani*, 1–2; Bradley Naranch, “‘Colonized Body,’ ‘Oriental Machine’: Debating Race, Railroads, and the Politics of Reconstruction in Germany and East Africa, 1906–1910,” *Central European History* 33, no. 3 (2000): 313–314.

59. Heidi Tworek, “Der Weltverkehr und die Ausbreitung des Kapitalismus um 1900,” *Themenportal Europäische Geschichte* (2015), www.europa.clio-online.de/essay/id/fdae-1662.

60. Anette Schlimm, *Ordnungen des Verkehrs: Arbeit an der Moderne—deutsche und britische Verkehrsexpertise im 20. Jahrhundert* (Bielefeld: Transcript, 2011); Quinn Slobodian, “How to See the World Economy: Statistics, Maps, and Schumpeter’s Camera in the First Age of Globalization,” *JGH* 10, no. 2 (2015): esp. 308, 319–320. Compare Dirk van Laak, “Infra-Strukturgeschichte,” *Geschichte und Gesellschaft* 27, no. 3 (2001): 367–393.

61. BAB, R 1001/300, “Bericht,” 24; Rockel, *Carriers*, 235.

62. On the changing logistics of porter recruitment: Greiner, *Human Portage*, 53–61; Pesek, *Koloniale Herrschaft*, 241.

63. BAB, R 1001/300, “Bericht,” 25, 27.

64. Pesek, “Colonial Conquest,” 164.

65. Greiner, *Human Portage*, 198–203.

66. Juhani Koponen, *Development for Exploitation: German Colonial Policies in Mainland Tanzania, 1884–1914* (Helsinki: Tiedekirja, 1994), 448.

67. Greiner, “Colonial Schemes,” 332.

68. Benndorf, *Der koloniale Verkehr*, 64.

69. Greiner, “Tensions,” 220; Sunseri, *Vilimani*, 59; Rockel, *Carriers*.

70. “Flugwesen und Automobil in den deutschen Kolonien,” *Deutsche Kolonialzeitung* 30, no. 1 (1913): 4; Koponen, *Development*, 449.

71. Andreas Greiner describes the lack of long-term, strategic planning as reflective of the entire German colonial enterprise in DOA. Greiner, “Tensions,” 184–185.

72. E.g., *Jahresbericht über die Entwicklung der deutschen Schutzgebiete in Afrika und der Südsee im Jahre 1907/08* (Berlin: Ernst Siegfried Mittler und Sohn, 1909), 232, 235. *Deutsche Kolonialzeitung* regularly included images of roads in DOA alongside articles on the colony, often without comment.

73. Greiner, *Human Portage*, 203–210.

74. Enda Duffy, *The Speed Handbook: Velocity, Pleasure, Modernism* (Durham, NC: Duke University Press, 2009), 8.

75. BAB, R 1001/300, “Bericht,” 24, 27; Tetzlaff, *Koloniale Entwicklung*, 81–82; Iliffe, *Tanganyika*, 135–136.

76. Koponen, *Development*, 441–442; Naranch, “‘Colonized Body,’” 320–323.

77. Benndorf, *Der koloniale Verkehr*, 84.

78. Tetzlaff, *Koloniale Entwicklung*, 84, 93.
79. Claas and Roscoe, "Hot Air," 134.
80. "Bericht über die Tätigkeit des Kolonial-Wirtschaftlichen Komitees im Jahre 1903/1904: 3. Tropenautomobil," Anlage J.IV in *Anlagen zum Jahresbericht über die Entwicklung der deutschen Schutzgebiete in Afrika und der Südsee im Jahre 1903/1904* (Berlin: Ernst Siegfried Mittler und Sohn, 1905), 464. My thanks to Andreas Greiner for bringing this to my attention.
81. "Paul Graetz und seine Fahrt gegen Wind, Wetter und die Zeit," <https://media.daimler.com/marsMediaSite/ko/de/9908789>.
82. On hunting and imperialism: Gissibl, *Nature*.
83. Graetz, *Im Auto*, 6–7.
84. "Paul Graetz."
85. Graetz, *Im Auto*, 8–9, 47.
86. "Lt. Graetz' Trip: A Rand Sensation: Arrested for Debt," *Bulawayo Chronicle*, December 25, 1908.
87. Graetz, *Im Auto*, 269. On his experiences in other British colonial cities: 203–207, 237–240, 254–258.
88. Bradley Naranch, "Introduction: German Colonialism Made Simple," in *German Colonialism in a Global Age*, ed. Bradley Naranch and Geoff Eley (Durham, NC: Duke University Press, 2015), 1–18, esp. 6.
89. Mom, *Atlantic Automobilism*, 112, 134, 155, 160.
90. Graetz, *Im Auto*, 1.
91. Mom, *Atlantic Automobilism*, 112.
92. Justin Spinney, "A Place of Sense: A Kinaesthetic Ethnography of Cyclists on Mont Ventoux," *Environment and Planning D: Society and Space* 24, no. 5 (2006): 709–732.
93. Mom, *Atlantic Automobilism*, 201.
94. Tim Dant, "The Driver-Car," *TCS* 21, no. 4/5 (2004): 71–72; Peter Merriman, "Automobility and the Geographies of the Car," *Geography Compass* 2, no. 2 (2009): 592. On empire and the senses: Andrew J. Rotter, *Empires of the Senses: Bodily Encounters in Imperial India and the Philippines* (New York: Oxford University Press, 2019).
95. Jeffrey T. Schnapp, "Crash (Speed as Engine of Individuation)," *Modernism/Modernity* 6, no. 1 (1999): 2.
96. Mimi Sheller, "Automotive Emotions: Feeling the Car," *TCS* 21, no. 4/5 (2004): 227; Duffy, *Speed Handbook*.
97. On the automobile as a "visual" technology: Sara Danus, *The Senses of Modernism: Technology, Perception, and Aesthetics* (Ithaca, NY: Cornell University Press, 2002), 5.
98. On landscape as instrument of cultural power: W. J. T. Mitchell, ed., *Landscape and Power* (Chicago: University of Chicago Press, 1994).
99. Graetz, *Im Auto*, 60.
100. Mom, *Atlantic Automobilism*, 197.
101. Graetz, *Im Auto*, 273.
102. Graetz, 280–281.
103. Graetz, 49.
104. Graetz, 36.
105. A. Zimmerman, "What Do You Really Want in German East Africa, Herr Professor?" Counterinsurgency and the Science Effect in Colonial Tanzania," *CSSH* 48, no. 2 (2006): 448, 451. See also Greiner, *Human Portage*, 65–67.
106. Graetz, *Im Auto*, 90.
107. Paul Graetz, *Mein Büffelkampf: Abenteuer in Afrika* (Dresden: Franz Müller Verlag, 1943), 103.
108. Graetz, *Im Auto*, 60–61, 99, 201, 302.

109. Graetz, 200–201, 228–229.
110. Martin Thomas, “What Is an Expedition? An Introduction,” in *Expedition into Empire: Exploratory Journeys and the Making of the Modern World*, ed. Martin Thomas (New York: Routledge, 2015), 13–14.
111. Graetz, *Im Auto*, 81–85.
112. Graetz, 6, 46.
113. Graetz, 116–117.
114. Graetz, 53.
115. Graetz, 114–115.
116. Pesek, *Koloniale Herrschaft*, 233.
117. Adam Blackler, *An Imperial Homeland: Forging German Identity in Southwest Africa* (University Park: Pennsylvania State University Press, 2022), chap. 5.
118. Alber, “Motorization,” 81–82; James Duncan, “Dis-orientation: On the Shock of the Familiar in a Far-Away Place,” in *Writes of Passage: Reading Travel Writing*, ed. James Duncan and Derek Gregory (London: Routledge, 1999), 157.
119. Anne McClintock, *Imperial Leather: Race, Gender, and Sexuality in the Colonial Contest* (New York: Routledge, 1995), 30.
120. Graetz, *Im Auto*, 22, 37, 53, 305.
121. Graetz, 148.
122. Graetz, 119, 188.
123. Graetz, 14.
124. Graetz, 110–111, 119, 142, 182–183, 255, 269, 323.
125. “Romance of Motoring: Lt. Graetz Feted,” *Rand Daily Mail*, December 15, 1908, 7.
126. Mary Louise Pratt, *Imperial Eyes: Travel Writing and Transculturation*, 2nd ed. (London: Routledge, 2008), 200.
127. David Ciarlo, *Advertising Empire: Race and Visual Culture in Imperial Germany* (Cambridge, MA: Harvard University Press, 2011).
128. Paul Graetz, *Im Motorboot quer durch Afrika* (Berlin: Reimar Hobbing, 1926); Graetz, *Büffelkampf*. Graetz’s motorboat crossing saw him navigate up the Zambezi River, beginning in Mozambique. He traveled as far as the Luapala River along the border between Northern Rhodesia and Belgian Congo, at which point he moored his boat and returned to Europe to tend to an injury suffered on the trip. Upon his return to Africa, he navigated up the Congo River from the Atlantic Ocean to near where he had left his boat previously. Claas and Roscoe, “Hot Air,” 134–135.
129. Claas and Roscoe, “Hot Air.”
130. Greiner, *Human Portage*; Greiner, “Colonial Schemes.”
131. Edward Berenson, *Heroes of Empire: Five Charismatic Men and the Conquest of Africa* (Berkeley: University of California Press, 2011), 16–17.
132. Rolf Hofmeier, *Transport and Economic Development in Tanzania* (Munich: Weltforum Verlag, 1973), 59.
133. Michael Pesek, “The War of Legs: Transport and Infrastructure in the East African Campaign of World War I,” *Transfers* 5, no. 2 (2015): 103. The British mobilized 500,000–750,000 porters, the Belgians approximately 260,000, and the Germans around 45,000.
134. IWM, Documents.3279, Private Papers of D Hawkins, “A Souvenir of Conquered East Africa” (Durban: Robinson, n.d.).
135. For example, the Second Road Corps possessed twenty British officers, forty-eight privates, four cars, and twelve hundred porters. TNA, WO 95/5368/9, “East Africa: Lines of Communication: 2nd Road Corps, Jan.–Sept. 1917.” Neil-Tomlinson, “Nyassa Chartered Company,” 120. For examples of the work done by the road corps see image files IWM, Q15412, Q15588, Q15625.

136. W. W. Campbell, *East Africa by Motor Lorry: Recollections of an Ex-motor Transport Driver* (London: John Murray, 1928), 103–104.
137. TNA, WO 95/5368/8, “East Africa: Lines of Communication: 1st Road Corps, 1917 June–Dec.”; Iliffe, *Tanganyika*, 250; Pesek, “War of Legs,” 113–114.
138. Campbell, *East Africa*, 4.
139. Grace, *African Motors*, 49.

3. REINVENTING THE WHEEL IN THE FRENCH SAHARA

1. ANOM, BIB AOM B6002, Marcel Jandau, *L'Automobile coloniale et récits de raids automobiles sahariens* (Bordeaux: Imprimerie coopérative, 1920).
2. “Les pistes du Sahara,” *Réalités françaises*, May 1, 1938.
3. Jandau, *L'Automobile coloniale*, 25–27, 32–33.
4. Jandau, 141.
5. See Alison Murray, “Le Tourisme Citroën au Sahara (1924–1925),” *Vingtième siècle. revue d'histoire* 68 (October–December 2000): 95–107.
6. Benjamin E. Thomas, “Trade Routes of Algeria and the Sahara,” in *University of California Publications in Geography*, vol. 8 (Berkeley: University of California Press, 1962), 165, 167.
7. ANOM, ALG GGA 5X/5/2, “Rapport de la commission chargée de l'étude de la réorganisation des compagnies sahariennes et des questions sahariennes connexes,” [mid-1920s], 1.
8. Benjamin Claude Brower, *A Desert Named Peace: The Violence of France's Empire in the Algerian Sahara, 1844–1902* (New York: Columbia University Press, 2009), 199–200, 209, 227; Judith Scheele and James McDougall, “Introduction: Time and Space in the Sahara,” in *Saharan Frontiers: Space and Mobility in Northwest Africa*, ed. James McDougall and Judith Scheele (Bloomington: Indiana University Press, 2012), 9–10; Priya Satia, *Time's Monster: How History Makes History* (Cambridge, MA: Belknap Press of Harvard University Press, 2020), 151.
9. Scheele and McDougall, “Introduction,” 12–14; James McDougall, “Frontiers, Borderlands, and Saharan/World History,” in McDougall and Scheele, *Saharan Frontiers*, 83; Benedetta Rossi, “Kinetocracy: The Government of Mobility at the Desert's Edge,” in *Mobility Makes States: Migration and Power in Africa*, ed. Darshan Vigneswaran and Joel Quirk (Philadelphia: University of Pennsylvania Press, 2015), 149–168.
10. Sarah Abrevaya Stein, *Saharan Jews and the Fate of French Algeria* (Chicago: University of Chicago Press, 2014), 2; Brower, *Desert*, 76, 95, 158.
11. 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), 4–5; Peregrine Horden, “Situations Both Alike? Connectivity, the Mediterranean, the Sahara,” in McDougall and Scheele, *Saharan Frontiers*, 29; McDougall, “Frontiers,” 83–84.
12. Scheele and McDougall, “Introduction,” 4–5.
13. On the camel as “transport revolution”: Lydon, *On Trans-Saharan Trails*, 54–55, 209; compare Richard W. Bulliet, *The Camel and the Wheel* (Cambridge, MA: Harvard University Press, 1975), 217.
14. Brower, *Desert*, 52; Abdelmajid Hannoum, *Violent Modernity: France in Algeria* (Cambridge, MA: Harvard University Press, 2010), 158–159; Numa Broc, “Les Français face à l'inconnue saharienne: Géographes, explorateurs, ingénieurs (1830–1881),” *Annales de Géographie* 96, no. 535 (1987): 306; Satia, *Time's Monster*, 174.
15. Brower, *Desert*, 74; Thomas, “Trade Routes,” 167.
16. Brower, *Desert*, 3, 22–25, 54; Stein, *Saharan Jews*, 42.

17. ANOM, ALG GGA 5X/7, Capitaine Lehuraux, “Vers le Niger, le Soudan, et le Sénégal avec les missions des Chambres de Commerce d’Algérie (novembre–décembre 1926),” 2–3.

18. Colette Zytynicki, *L’Algérie, terre de tourisme: Histoire d’un loisir colonial* (Paris: Vendémiaire, 2016), 147; Stein, *Saharan Jews*, 13.

19. Berny Sèbe, “Conquérir le désert et organiser le vide: Éléments de réflexion sur les fortifications, outil de contrôle des espaces sahariens,” *Mondes et cultures* 75 (2015): 244–246.

20. ANOM, ALG GGA 5X/7, Lehuraux, “Vers le Niger,” 2–3.

21. Diana Davis, *The Arid Lands: History, Power, Knowledge* (Cambridge, MA: MIT Press, 2016); Diana Davis, *Resurrecting the Granary of Rome: Environmental History and French Colonial Expansion in North Africa* (Athens: Ohio University Press, 2007); Andrea E. Duffy, “Civilizing through Cork: Conservationism and *la Mission Civilisatrice* in French Colonial Algeria,” *Environmental History* 23 (2018): 270–292.

22. Brower, *Desert*, 112.

23. Stein, *Saharan Jews*, 69; Judith Scheele, “Traders, Saints, and Irrigation: Reflections on Saharan Connectivity,” *JAH* 51, no. 3 (2010): 288. On this commerce: Lydon, *On Trans-Saharan Trails*.

24. ANOM, ALG GGA 5X/5/2, “Rapport de la commission,” 20–21.

25. McDougall, “Frontiers,” 86–87.

26. ANOM, ALG GGA 5X/7, Lehuraux, “Vers le Niger,” 3–4. Thomas, “Trade Routes,” 250.

27. ANOM, ALG GGA 24H/60/9, “Rapport du Capitaine Provotelle, Chef du Service Radiotélégraphique, au sujet du ravitaillement des postes du Sud par automobiles,” February 5, 1917.

28. ANOM, ALG GGA 24H/15, Professor Gautier, “Appendice N°1 au Rapport sur une Mission en Egypte,” November 5, 1917, 3–4.

29. ANOM, ALG GGA 24H/60/9, “Rapport du Capitaine Provotelle.”

30. Général O[ctave] Meynier, “Grandes routes sahariennes,” *L’Afrique du Nord illustrée* 30, no. 737 (June 15, 1935): 4.

31. ANOM, ALG GGA 24H/60/9, Octave Meynier, “Instruction sommaire en vue de l’établissement de pistes praticable aux automobiles dans le Sahara,” January 22, 1916.

32. ANOM, ALG GGA 24H/60/9, “Rapport du Maréchal des Logis Bousset sur l’itinéraire Alger-Ouargla,” May 5, 1916.

33. ANOM, ALG GGA 24H/60/9, Meynier, “Instruction sommaire.”

34. ANOM, ALG GGA 24H/60/5, “Étude de M. Camille Palatier sur les traversées sahariennes,” 3–4.

35. Ghislaine Lydon, “Saharan Oceans and Bridges, Barriers and Divides in Africa’s Historiographical Landscape,” *JAH* 56, no. 1 (2015): 9.

36. Albert Sarraut, *La Mise en valeur des colonies françaises* (Paris: Payot, 1923), 17, 340.

37. On the colonial contribution to the French war effort: Tyler Stovall, “The Color Line behind the Lines: Racial Violence in France during the Great War,” *AHR* 103, no. 3 (1998): 737–769; Richard Fogarty, *Race and War in France: Colonial Subjects in the French Army, 1914–1918* (Baltimore: Johns Hopkins University Press, 2008).

38. Sarraut, *Mise en valeur*, 20, 24–25.

39. Helen Tilley, *Africa as a Living Laboratory: Empire, Development, and the Problem of Scientific Knowledge, 1870–1950* (Chicago: University of Chicago Press, 2011), 3–4; Corey Ross, *Ecology and Power in the Age of Empire: Europe and the Transformation of the Tropical World* (New York: Oxford University Press, 2017), 419; Christophe Bonneuil, *Des Savants pour l’empire: La structuration des recherches scientifiques coloniales au temps de “la mise en valeur des colonies françaises”: 1917–1945* (Paris: Éditions ORSTOM, 1991), 54–55.

40. Monica M. van Beusekom, *Negotiating Development: African Farmers and Colonial Experts at the Office de Niger, 1920–1960* (Portsmouth, NH: Heinemann, 2002), xxvi–xxvii; xxxiii; Gary Wilder, *The French Imperial Nation-State: Negritude and Colonial Humanism between the Two World Wars* (Chicago: University of Chicago Press, 2005), 82–84; Joseph Bohling, “Colonial or Continental Power? The Debate over Economic Expansion in Inter-war France, 1925–1932,” *CEH* 26, no. 2 (2017): 217–241.

41. MQB, FGMH, DA001160, Général Estienne, “À la conquête du Sahara: Mission Haardt Audouin-Dubreuil à Alger,” *L’Afrique du Nord illustrée* 18, no. 98 (March 17, 1923): 7.

42. ANOM, ALG GGA 24H/16, Marcel Peyroutes, “La Pénétration saharienne par l’auto, l’avion et le rail,” *Dépêche coloniale* (February 8, 1923).

43. ANOM, ALG GGA 24H/16, “Rapport du fin du mission Bettembourg,” April 10, 1919, 41; MQB, FGMH, DA001106, “16^e—Note Verbale,” no date [April/May 1924], 1.

44. ANOM, ALG GGA 5X/7, Capitaine Le Maître, “Des pistes sahariennes (suite),” *L’Armée d’Afrique* 3, no. 24 (April 1926): 172.

45. E.-L. Guernier, *L’Afrique: Champ d’expansion de l’Europe* (Paris: Armand Colin, 1933), 243–244.

46. Van Beusekom, *Negotiating Development*.

47. ANOM, ALG GGA 24H/16, “Rapport Bettembourg,” 40.

48. Pierre Deloncle, *L’Heure du transsaharien* (Paris: Revue de Paris, 1927), 28.

49. ANOM, ALG GGA 5X/7, Paul Bruzon, “Le Raid Louis Audouin-Dubreuil,” *La Presse coloniale illustrée*, July 1924, 15–20. On this environmentally transformative techno-optimism of the 1920s: Philipp Nicolas Lehmann, “Infinite Power to Change the World: Hydroelectricity and Engineered Climate Change in the Atlantropa Project,” *AHR* 121, no. 1 (2016): 70–100; Lehmann, *Desert Edens: Colonial Climate Engineering in the Age of Anxiety* (Princeton, NJ: Princeton University Press, 2022).

50. MQB, FGMH, DA001107, “Les Grandes Voies de communication à travers l’Afrique,” n.d. [1924], 3. On the trans-Saharan railway: Deloncle, *L’Heure du transsaharien*; Rober-Raynaud, *Pour le transsaharien* (Paris: Comité du Transsaharien, 1927).

51. Archives Nationales Centre des Archives d’Outre-Mer, *L’Automobile à la conquête de l’Afrique (1898–1932)* (Aix-en-Provence: Centre des Archives d’Outre-Mer, 1988), 30. Nivelles’s initial order called for six automobiles and five airplanes, but the actual mission used seven automobiles and four airplanes. ANOM, ALG GGA 24H/16, “Rapport Bettembourg,” 10.

52. ANOM, ALG GGA 24H/16, “Ordre de mission,” January 10, 1919, 1–2.

53. ANOM, ALG GGA 24H/16, “Instruction complémentaire pour la Mission de la Saoura,” January 18, 1919, 1.

54. ANOM, ALG GGA 24H/16, “Rapport Bettembourg,” 4–5, 26–27.

55. Thomas, “Trade Routes,” 235.

56. ANOM, ALG GGA 5X/7, Capitaine Le Maître, “Des pistes sahariennes (suite),” 170–172.

57. Commissariat Général du Centenaire de l’Algérie, *Notice sur le tourisme saharien* (n.p: Rives, Romeu, 1930), 4.

58. ANOM, ALG GGA 24H/63, G. d’Almeida, “Les Pistes du sud,” June 8, 1933, 1.

59. Karl Krüger, “Koloniale Straßenbaufragen,” *Deutsche Kolonial-Zeitung* 50, no. 8 (1938): 266; Bulliet, *Camel*, 227.

60. ANOM, ALG GGA 24H/3, “Étude sur l’organisation d’un réseau routier dans les Territoires du Sud,” n.d. [1918/1919].

61. ANOM, ALG GGA 5X/5/1, “Conférences aux officiers élèves du cours préparatoire au service des Affaires Indigènes d’Algérie: 2^{ème} conférence: Les routes et les chemins de fer,” 2–5.

62. ANOM, ALG GGA 24H/3, “Étude sur l’organisation.”

63. Jandau, *L'Automobile coloniale*, 80.
64. ANOM, ALG GGA 24H/15, "L'Automobilisme au Sahara: 1^o Rapport du Colonel Dinaux," April 30, 1921, 1.
65. ANOM, ALG GGA 24H/15, "L'Automobilisme au Sahara," 1–3. On the construction of mystical expertise in British Arabia: Satia, *Time's Monster*, 158, 184.
66. ANOM, ALG GGA 24H/15, "L'Automobilisme au Sahara," 4–6, 9, 11–12.
67. ANOM, ALG GGA 24H/15, "L'Automobilisme au Sahara," 14–18.
68. ANOM, ALG GGA 24H/15, "L'Automobilisme au Sahara," 4.
69. ASE, MSC0096, "La Fiat in Libia, 1911–1939," p. "F"; ANOM, ALG GGA 24H/15, "Appendice N°1," 2.
70. ANOM, ALG GGA 24H/16, "Rapport Bettembourg," 25–27.
71. Gijs Mom, *Atlantic Automobilism: Emergence and Persistence of the Car, 1895–1940* (New York: Berghahn Books, 2015), 61.
72. Yves Cohen, "The Modernization of Production in the French Automobile Industry between the Wars: A Photographic Essay," *Business History Review* 65, no. 4 (1991): 754–780.
73. Anthony Rhodes, *Louis Renault: A Biography* (London: Cassell, 1969), 56–58.
74. John Reynolds, *André Citroën: The Henry Ford of France* (New York: St. Martin's, 1996), 25–27, 31–32.
75. Jacques Wolgensinger, *L'Aventure de la croisière noire* (Paris: Robert Laffont, 2002), 33–34; Reynolds, *Citroën*, 33.
76. Reynolds, *Citroën*, 66.
77. Reynolds, 34; Georges-Marie Haardt and Louis Audouin-Dubreuil, *La Première Traversée du Sahara en automobile: De Touggourt à Tombouctou par l'Atlantide* (Paris: Plon, 1923), 7.
78. Reynolds, *Citroën*, 85–86; Wolgensinger, *L'Aventure*, 15–23, 27–32, 36–37; Caroline Haardt de la Baume and Jean-François Ruchaud, *Alexandre Iacovleff, les croisières Citroën* (Lyon: Fage, 2012), 6.
79. MQB, FGMH, DA001120, "Exposé des motifs pour une tentative de traversée du Sahara en automobile," n.d. [1922], 35; Haardt de la Baume and Ruchaud, *Iacovleff*, 6.
80. ANOM, ALG GGA 24H/15, "L'Automobilisme au Sahara," 5.
81. Arnaud Berthonnet, "Le Rôle des militaires français dans la mise en valeur d'un tourisme au Sahara de la fin du XIX^e siècle aux années 1930," in *Le Tourisme dans l'empire français—politiques, pratiques et imaginaires (XIX^e–XX^e siècles)*, ed. Colette Zytznicki and Habib Kazdaghli (Paris: Publications de la Société française d'histoire d'outre mer, 2009), 85, 86n25; Haardt and Audouin-Dubreuil, *Première Traversée*, 7–8.
82. Haardt de la Baume and Ruchaud, *Iacovleff*, 10.
83. Haardt and Audouin-Dubreuil, *Première Traversée*, 8–9.
84. Haardt and Audouin-Dubreuil, 5, 15–16.
85. MQB, FGMH, DA0001122, "Carnet de route: Remarques générales."
86. TNA, CO 323/900/27, Report of J. Eaglesome, July 17, 1922.
87. MQB, FGMH, DA001178, Letter n°302/M, Mangeot to General of the Division, October 17, 1922; Letter n°356/N, Mangeot to General of the Division, December 11, 1922.
88. ANOM, ALG GGA 24H/16, Directeur, Territoires du Sud to Directeur du département des appareils Kégresse, Établissements Citroën, [1922/23].
89. MQB, FGMH, DA001120, "Exposé des motifs," 3, 5, 21–22, 36–38, 41, 45.
90. Edward Berenson, *Heroes of Empire: Five Charismatic Men and the Conquest of Africa* (Berkeley: University of California Press, 2011); Berny Sèbe, *Heroic Imperialists in Africa: The Promotion of British and French Colonial Heroes, 1870–1939* (Manchester: Manchester University Press, 2013).
91. Haardt and Audouin-Dubreuil, *Première Traversée*, 28.

92. See hefty dossiers of press clippings in ANOM, ALG GGA 24H/16; MQB, FGMH, DA001115–DA001119, DA001148.
93. Wolgensinger, *L'Aventure*, 118, 123–124.
94. Haardt and Audouin-Dubreuil, *Première Traversée*, 27–28, 41–42, 45, 49–50, 68, 76–77, 105–106, 117.
95. Wolgensinger, *L'Aventure*, 127.
96. ANOM, AGEFOM 374/34bis/2, Joé Poyet, “Impressions du noir Sungalo,” AC, May 15, 1923, 4.
97. Haardt and Audouin-Dubreuil, *Première Traversée*, 144–145.
98. Wolgensinger, *L'Aventure*, 117.
99. ANOM, AGEFOM 374/34bis/2, “La Traversée du Sahara en autos-chenilles: Le Raid Citroën (Mission Haardt-Audouin Dubreuil),” AC, May 15, 1923, 3; ANOM, ITP/27/6, Carte n°2, November 1922.
100. MQB, FGMH, DA001119, Albert Guignard, “La Pénétration transsaharienne par l'automobile,” *RDM* (December 1, 1924): 585, 606.
101. MQB, FGMH, DA001119, “L'Univers rapetissé,” *Le Temps*, February 17, 1924.
102. MQB, FGMH, DA001160, Estienne, “À la conquête,” 6.
103. ANOM, ALG GGA 24H/16, “Des autochenilles au Congo belge,” *La Dépêche coloniale*, July 28, 1923.
104. This would come to define many debates over Citroën's African endeavors. See Murray, “Tourisme Citroën,” 102–103.
105. ANOM, ALG GGA 5X/7, “Rapport du Capitaine Recroix, chef de l'Annexe de Ghardaïa, sur la reconnaissance, en autochenille, d'une piste automobile Ghardaïa–El Goléa,” December 30, 1923.
106. ANOM, ALG GGA 24H/103, “Rapport Chapuis,” April 4, 1923, 1–3.
107. ANOM, ALG GGA 4H/35, Général de Division Boichut to Minister of War, July 12, 1924, 1–4, 10, 21.
108. Jean Bastié, “La France et l'Afrique: L'étape de la croisière noire dans son contexte historique (28 octobre 1924—fin septembre 1925),” *Géographie* 175, no. 1514 (2004): 9.
109. ANOM, ALG GGA 5X/7, Capitaine Nouveau, “Le Véhicule saharien,” *L'Armée de l'Afrique* (November 1927): 337–338.
110. ANOM, ALG GGA 24H/16, (ill.) at Renault to Boulogne, July 24, 1924.
111. ANOM, ALG GGA 24H/17, Renault (Billancourt/Paris) to Société Algérienne des Automobiles Renault, December 28, 1923, “Renseignements techniques sur les voitures du raid,” *La Presse coloniale illustrée*, August 1924, 18.
112. MQB, FGMH, DA001106, “8°—Entrevue avec le Commandant Tranchant et divers, note du Commandant Bettembourg à M. Citroën,” February 8, 1924.
113. Murray, “Tourisme Citroën.” For CGT's negotiations with French officials see dossier ANOM, ITP/27/6.
114. ANOM, ALG GGA 5X/7, Capitaine Le Maître, “Des pistes sahariennes (suite),” *L'Armée d'Afrique* 4, no. 36 (June 1927): 240–241.
115. ANOM, ALG GGA 5X/7, Le Maître, “Des pistes sahariennes (suite),” 235.
116. ANOM, ALG GGA 24H/103, “Rapport Broussaud,” April 28, 1925, 1–2, 5–6, 8, 11.
117. Permanent International Association of Road Congresses, *Sixth Congress, Washington, 1930: Reports* (Washington, DC: Government Printing Office, 1930).
118. ANOM, 1AFFPOL/2530, “Rapport du M. Beau,” 9, 43.
119. ANOM, ALG GGA 24H/8, Report from Inspector General of Ponts et Chaussées, 34–35.
120. ANOM, ALG GGA 24H/8, “Bituminous Treatments Used on Roads of Intermediate Type in the Western United States,” *Public Roads: A Journal of Highway Research* 11, no. 10 (December 1930).

121. On Algerian public works as a site of innovation: Arnaud Berthonnet, “La Formation d’une culture économique et technique en Algérie (1830–1962): L’exemple des grandes infrastructures de génie civil,” *French Colonial History* 9 (2008): 46–47, 50–51.

122. ANOM, ALG GGA 24H/63, “Les Pistes du sud,” 3, 6.

123. ANOM, ALG GGA 24H/63, “Les Pistes du sud,” 29.

124. ANOM, ALG GGA 24H/58, “Rapport de tournée au Hoggar de M. Thibault,” October 1930, 27–29, 41.

125. ANOM, ALG GGA 24H/33, Commerçants de Timimoun to Director of Southern Territories, December 11, 1930.

126. David Edgerton, *The Shock of the Old: Technology and Global History since 1900* (London: Profile Books, 2006), 76.

127. “Les Pistes du Sahara.”

128. *Guide du tourisme automobile & aérien au Sahara 1936* (Algiers: Shell, 1935), 5, 11.

129. “Les Pistes du Sahara.”

130. ANOM, ALG GGA 24H/18, “Note pour Monsieur le Sous-Directeur des Territoires du Sud,” October 2, 1936, 6.

131. BAB, NS 52/101, “Zusammenfassung der wichtigsten Erkenntnisse der Abteilung IV ‘Verkehr und Technik’ vom Beginn ihrer Tätigkeit bis zur Stilllegung im Februar 1943,” March 1943, 2.

4. THE ROLLING SPECTACLE OF THE CROISIÈRE NOIRE

1. On the fuel question in West Africa: John Cropper, “Running on Empty: Fossil Fuels, Local Fuels, and Entangled Infrastructures in Colonial Senegal, 1885–1945,” *JAH* 63, no. 1 (2022): 19–36.

2. ANOM, AGEFOM 928/2907/4, Henri Lena, “En Afrique avec des camions à gazogène,” *Le Poids lourd* [1929/30], 54.

3. ANOM, AGEFOM 928/2907/4, Lena, “En Afrique,” 51–54.

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

5. See, e.g., Anne McClintock, *Imperial Leather: Race, Gender, and Sexuality in the Colonial Contest* (New York: Routledge, 1995); Michael Osborne, *The Emergence of Tropical Medicine in France* (Chicago: University of Chicago Press, 2014); Corrie Decker and Elisabeth McMahon, *The Idea of Development in Africa: A History* (New York: Cambridge University Press, 2020); Andrew Denning, “Unscrambling Africa: From Eurafican Technopolitics to the Fascist New Order,” *JMH* 95, no. 3 (2023): 627–667.

6. See Patricia Purtschert, Francesca Falk, and Barbara Lüthi, “Switzerland and ‘Colonialism without Colonies’: Reflections on the Status of Colonial Outsiders,” *Interventions* 18, no. 2 (2016): 286–302.

7. On the technocratic turn: Helen Tilley, *Africa as a Living Laboratory: Empire, Development, and the Problem of Scientific Knowledge, 1870–1950* (Chicago: University of Chicago Press, 2011); Corey Ross, *Ecology and Power in the Age of Empire: Europe and the Transformation of the Tropical World* (New York: Oxford University Press, 2017).

8. Jean de Brunhoff, *Histoire de Babar, le petit éléphant* (Paris: Jardin des Modes, 1931), 20–21; Hergé, *Tintin au Congo* (Tournai: Casterman, 1960 [1930/31]), 11.

9. Gordon Pirie cautions against “hagiographic” narratives of long-distance expeditions. Pirie, “Non-urban Motoring in Colonial Africa in the 1920s and 1930s,” *South African Historical Journal* 63 (2011): 39. Individuals with close ties to expedition participants or the Citroën company have penned numerous histories of the expedition. These include Ariane Audouin-Dubreuil (daughter of Louis), Caroline Haardt de la Baume

(granddaughter of Georges-Marie), and Jacques Wolgensinger (former head of public relations at Citroën), who have produced narrative histories of the expedition. Ariane Audouin-Dubreuil, *La Croisière noire: Sur les traces de l'Expédition Citroën en Centre Afrique* (Grenoble: Grénat, 2013); Ariane Audouin-Dubreuil, *Les Croisières Citroën: 1924–2004, 80^e anniversaire de la Croisière noire* (Évreux: Éd. Atlas, 2004); Caroline Haardt de la Baume and Jean-François Ruchaud, *Alexandre Iacovleff, les croisières Citroën* (Lyon: Fage, 2012); Jacques Wolgensinger, *L'Aventure de la croisière noire* (Paris: Robert Laffont, 2002). More critical academic histories include Peter Bloom, *French Colonial Documentary: Mythologies of Humanitarianism* (Minneapolis: University of Minnesota Press, 2008), chap. 3; Alison Murray Levine, "Film and Colonial Memory: *La Croisière noire* 1924–2004," in *Memory, Empire, and Postcolonialism: Legacies of French Colonialism*, ed. Alec G. Hargreaves (Lanham, MD: Lexington Books, 2005), 81–97.

10. MQB, FGMH, DA001102, "Rapport de fin de mission 2 (rapport économique)," 3.

11. ANOM, 1AFFPOL/1054/10, Letter n°1614, Citroën to President du Conseil, Ministère des Affaires Étrangères, October 6, 1924, 7.

12. Greg Grandin, *Fordlandia: The Rise and Fall of Henry Ford's Forgotten Jungle City* (New York: Metropolitan Books, 2009), esp. chap. 1.

13. ANOM, 1AFFPOL/1054/10, Letter n°1614, 1–2. Albert Sarraut, *La Mise en valeur des colonies françaises* (Paris: Payot, 1923).

14. MQB, FGMH, DA001102, "Rapport 2," 5.

15. MQB, FGMH, DA001152, Maurice Besson, "L'Auto à l'assaut du Tchad," *L'Auto*, November 9, 1924.

16. ANOM, 1AFFPOL/1054/10, Letter n°1614, 13–14.

17. ANOM, 1AFFPOL/1054/10, "Projets d'une mission d'études, de grandes liaisons et de chasses dans le centre-africain," attachment to letter n°174 D.P., Citroën to Minister of Colonies, January 12, 1924, 1–2.

18. ANOM, 1AFFPOL/1054/10, Citroën to President of Council, May 2, 1924, 5.

19. ANOM, 1AFFPOL/1054/10, Letter n°1614, 14; ANOM, 1AFFPOL/1054/10, "Projets," 4.

20. MQB, FGMH, DA001102, "Rapport 2," 9; ANOM, FM MIS/99, Haardt to Direction des Affaires Musulmanes, Ministère des Colonies, September 19, 1924, 1–2.

21. ANOM, 1AFFPOL/1054/10, Minister of Colonies to Président du Conseil, Ministère des Affaires Étrangères, May 20, 1924.

22. ANOM, 1AFFPOL/1054/10, André Maginot in response to Citroën letter n°368 9/11, February 4, 1924.

23. MQB, FGMH, DA001101, "Rapport de fin de mission 1," August 5, 1925, 4.

24. ANOM, ALG GGA 4H/35, Letter n°1815, Steeg to Commandant Militaire of Aïn-Sefra, April 29, 1924.

25. ANOM, 1AFFPOL/1054/10, Note n°392 D.N., Director of Economic Affairs to Governor of the Colonies, October 23, 1924; ANOM, 1AFFPOL/1054/10, Letter 614 C.M. from Governor-General of AOF to Governor-General of Algeria, December 11, 1924.

26. ANOM, ALG GGA 4H/35, Letter from Governor Steeg, October 27, 1924.

27. MQB, FGMH, DA001102, "Rapport 2," 12.

28. David Arnold, "Europe, Technology, and Colonialism in the 20th Century," *H&T* 21, no. 1 (2005): 99.

29. MQB, FGMH, DA001111, Citroën to King of Belgium, June 2, 1924, 1, 3.

30. MQB, FGMH, DA001111, Citroën to Belgian Ambassador, May 14, 1924, 4.

31. MQB, FGMH, DA001111, Citroën to King of Belgium, 5.

32. Georges-Marie Haardt and Louis Audouin-Dubreuil, *La Croisière noire: Expédition Citroën Centre-Afrique* (Paris: Plon, 1927), 136.

33. MQB, FGMH, DA001102, "Rapport 2," 10.

34. MQB, FGMH, DA001137, André Citroën to President of the Republic, August 25, 1925, 3.

35. MQB, FGMH, DA001112, Lancelot Oliphant to E. D. Swinton, October 4, 1924.

36. Haardt and Audouin-Dubreuil, *Croisière noire*, iii–iv note 1.

37. Historiographical assessments include Georgine Clarsen, “Machines as the Measure of Women: Colonial Irony in a Cape to Cairo Automobile Journey, 1930,” *JTH* 29, no. 1 (2008): 44–63; Pirie, “Non-urban Motoring”; James B. Wolf, “Imperial Integration on Wheels: The Car, the British and the Cape-to-Cairo Route,” in *Literature and Imperialism*, ed. Robert Giddings (New York: St. Martin’s, 1991), 112–127; Tal Zelmanovich, “‘Woman Pioneer of Empire’: The Making of a Female Colonial Celebrity,” *Postcolonial Studies* 12, no. 2 (2009): 193–210. Travelogues include: Ralph A. Bagnold, *Libyan Sands: Travel in a Dead World* (London: Hodder and Stoughton, 1935); M. L. Belcher, *Cape to Cowley via Cairo in a Light Car* (London: Methuen, 1932); W. W. Campbell, *East Africa by Motor Lorry: Recollections of an Ex-Motor Transport Driver* (London: John Murray, 1928); Major C. Court Treatt, *Out of the Beaten Track: A Narrative of Travel in Little Known Africa* (New York: E. P. Dutton, 1931); Stella Court Treatt, *Cape to Cairo: The Record of a Historic Motor Journey* (Boston: Little, Brown, 1928); J. de Foucaucourt, *De l’Algérie au Soudan par le Sahara* (Paris: F. Lanore, 1928); Wilfrid Dyson Hambly, *With a Motor Truck in West Africa* (New York: Century, 1931); Henri de Kérillis, *De l’Algérie au Dahomey en automobile* (Paris: Plon, 1925); Lieutenant [Frédéric] Loiseau, *À cent à l’heure à travers le Sahara* (Paris: Éditions Liberté, 1929); Marthe Oulié, *Bidon 5: En rallye à travers le Sahara* (Paris: Flammarion, 1931); Franco Pattarino, *Deserto: Da Asmara a Tripoli in automobile* (Milan: La Prora, 1938); Jean-Marie Pichat, *Brazzaville-Paris* (Paris: Larose, 1933); Owen Tweedy, *By Way of the Sahara: The African Odyssey of Three Men and a Grocer’s Van* (London: Duckworth, 1930); Jean Vallée, *Images d’Afrique: Notes prises au cours du raid Alger, Dakar, Alger* (Paris: Berger-Levrault, 1931).

38. On the framing of spatial conquest and the pleasure of speed: Enda Duffy, *The Speed Handbook: Velocity, Pleasure, Modernism* (Durham, NC: Duke University Press, 2009), 18.

39. Mary Louise Pratt, *Imperial Eyes: Travel Writing and Transculturation*, 2nd ed. (London: Routledge, 2008), 3–4.

40. Haardt and Audouin-Dubreuil, *Croisière noire*, 3–5, 11, 13, 15.

41. Georges-Marie Haardt and Louis Audouin-Dubreuil, *The Black Journey: Across Central Africa with the Citroën Expedition* (New York: Cosmopolitan, 1927), 285–286, 292.

42. Another car-lion encounter: Loiseau, *À cent à l’heure*, 62.

43. On automobiles in these contexts: Georgine Clarsen and Lorenzo Veracini, “Settler Colonial Automobilities: A Distinct Constellation of Automobile Cultures?,” *History Compass* 10, no. 12 (2012): 889–900.

44. Haardt and Audouin-Dubreuil, *Croisière noire*, 76.

45. Haardt and Audouin-Dubreuil, *Black Journey*, 298.

46. Haardt and Audouin-Dubreuil, *Croisière noire*, 244n1; MQB, FGMH, DA001102, “Rapport 2,” 141. On the construction of this road: ANOM, ITP/944/6.

47. Haardt and Audouin-Dubreuil, *Croisière noire*, 248–250.

48. John Reynolds, *André Citroën: The Henry Ford of France* (New York: St. Martin’s, 1996), 80.

49. Adriana Craciun, “What Is an Explorer?,” in *Expedition into Empire: Exploratory Journeys and the Making of the Modern World*, ed. Martin Thomas (New York: Routledge, 2015), 26.

50. Léon Poirier, *À la recherche d’autre chose* (Bruges: Desclée de Brouwer, 1968), 225–226. On Poirier’s empire cinema: Owen White, “Great Men in Greater France: *L’Appel du silence* and *Brazza, ou l’épopée du Congo*,” *French Colonial History* 18 (2019): 129–154.

51. Haardt and Audouin-Dubreuil, *Croisière noire*, iv–v, 117; Various scholarly books on the subject cite different figures; the above numbers refer to the official (French) travelogue and the end-of-mission report from Georges-Marie Haardt's personal papers. MQB, FGMH, DA001101, "Rapport 1," 9–10.

52. MQB, FGMH, DA001151, DA001152 (clippings); DA001165 (telegrams).

53. MQB, FGMH, DA001147.

54. Murray Levine, "Film," 85.

55. Bloom, *French Colonial Documentary*, 91.

56. Poirier, *Recherche*, 257.

57. McClintock, *Imperial Leather*, 33. On commodity racism: David Ciarlo, *Advertising Empire: Race and Visual Culture in Imperial Germany* (Cambridge, MA: Harvard University Press, 2011); Timothy Burke, *Lifebuoy Men, Lux Women: Commodification, Consumption, and Cleanliness in Modern Zimbabwe* (Durham, NC: Duke University Press, 1996).

58. Haardt de la Baume and Ruchaud, *Alexandre Iacovleff*, 40.

59. Robin Mitchell, *Vénus Noire: Black Women and Colonial Fantasies in Nineteenth-Century France* (Athens: University of Georgia Press, 2020).

60. MQB, FGMH, DA001181.

61. MQB, FGMH, DA001143; quotation: *La Liberté*, April 23, 1926.

62. MQB, FGMH, DA001182.

63. MQB, FGMH, DA001141, DA001142, DA001155, DA001176.

64. MQB, FGMH, DA001112, French translation of *Mombasa Times* article, May 19, 1925, 1–3.

65. Timothy Mitchell, *Colonising Egypt* (Cambridge: Cambridge University Press, 1988), 6–8.

66. MQB, FGMH, DA001180; *Exposition de la Croisière noire: Documents rassemblés par l'expédition Citroën-Centre-Afrique, 2^e mission Haardt-Audouin Dubreuil* (Bobigny: Draeger, 1926).

67. MQB, FGMH, DA001185, "L'Exposition de la Croisière noire," *Le Matin*, October 9, 1926.

68. MQB, FGMH, DA001185, Léon Abensour, "L'Exposition de la Croisière noire," *Dépêche* (Toulouse), October 11, 1926.

69. MQB, FGMH, DA001185, Marcel Espiau, "Une merveilleuse évocation de l'Afrique au Pavillon de Marsan," *L'Avenir*, October 9, 1926.

70. MQB, FGMH, DA001185, M. le Veilleur, "Pont des Arts," *Excelsior*, October 10, 1926.

71. MQB, FGMH, DA001185, Marcel Lapierre, "L'exposition de la 'Croisière noire,'" *Le Peuple*, October 12, 1926.

72. MQB, FGMH, DA001144, Georges Martin, "Voici les joujoux de l'année!," *Le Petit Journal*, December 12, 1926.

73. MQB, FGMH, DA001144, undated advertisement in *L'Officiel de la couture* [late 1926].

74. MQB, FGMH, DA001144, Maurice de Guy, "Originale Exploration," *Afrique du Nord illustrée*, December 25, 1926.

75. MQB, FGMH, DA001101, "Rapport 1," 9.

76. MQB, FGMH, DA001197, reports by students Besse, Sigrand, and Thomas.

77. MQB, FGMH, DA001145, advertisement in *Nation Belge*, May 21, 1927.

78. MQB, FGMH, DA001145, review by Pierre Deloncle, *Dépêche coloniale*, June 16, 1927.

79. Haardt de la Baume and Ruchaud, *Alexandre Iacovleff*, 5.

80. Reynolds, *André Citroën*, 195–203.

81. Vanessa R. Schwartz, *Spectacular Realities: Early Mass Culture in Fin-de-Siècle Paris* (Berkeley: University of California Press, 1998), 5, 8–9, 12.

82. Guy Debord, *Society of the Spectacle* (Detroit: Black & Red, 1983), §4.

5. THE BRITISH MODEL

1. John McCracken, “Economics and Ethnicity: The Italian Community in Malawi,” *JAH* 32, no. 2 (1991): 317–318; TNA, HO 334/267/5900, Naturalization Certificate: Inaco Conforzi, January 30, 1951.

2. TNA, CO 525/181/7/4, “Judgment: Case No. 33 of 1939, I Conforzi (Tea & Tobacco) Ltd., Appellant versus the Motor Traffic Licensing Board, Respondent,” 2; W. H. J. Rangeley, “A Brief History of the Tobacco Industry in Nyasaland Part II,” *Nyasaland Journal* 10, no. 2 (1957): 33, 37–38. McCracken, “Economics,” 321.

3. ASF, MSC0096, Umberto Quilici, “La Fiat in Africa,” January 17, 1969, 3.

4. John McCracken, *A History of Malawi 1859–1966* (Woodbridge, Suffolk, UK: James Currey, 2012), 174–175.

5. McCracken, “Economics,” 325.

6. TNA, CO 525/181/7/1, “Appeal Case: Dr. I. Conforzi v. Motor Traffic Licensing Board,” May 8, 1939, 1.

7. On the varieties of British colonial power and interwar Africa: Lord Lugard, “Africa and the Powers,” *Journal of the Royal African Society* 35, no. 138 (1936): 4–17.

8. See W. Travis Hanes III, “Railway Politics and Imperialism in Central Africa, 1889–1953,” in *Railway Imperialism*, ed. Clarence B. Davis and Kenneth E. Wilburn Jr. with Ronald E. Robinson (New York: Greenwood, 1991), 41–69.

9. On road development as a cost rather than an investment: TNA, CO 691/141/2/1, “Report of a Committee to Consider Schemes for the Development of the Territory,” September 15, 1934, 2. On rail companies operating road transport: Brian J. Turton, “The Road Motor Services of Rhodesia, 1927–38,” *JTH* 18, no. 1 (1997): 1–15.

10. Joshua Grace, *African Motors: Technology, Gender, and the History of Development* (Durham, NC: Duke University Press, 2021); Jennifer Hart, *Ghana on the Go: African Mobility in the Age of Motor Transportation* (Bloomington: Indiana University Press, 2016). See also Philip Drummond-Thompson, “The Rise of Entrepreneurs in Nigerian Motor Transport: A Study in Indigenous Enterprise,” *JTH* 14, no. 1 (1993): 46–63; Simon Heap, “The Development of Motor Transport in the Gold Coast, 1900–1939,” *JTH* 11, no. 2 (1990): 19–37; Elizabeth Wrangham, “An African Road Revolution: The Gold Coast in the Period of the Great War,” *JICH* 32, no. 1 (2004): 1–18.

11. Grace, *African Motors*, 23, 30, 35–36.

12. Tony Ballantyne, “Mobility, Empire, Colonisation,” *History Australia* 11, no. 2 (2014): 22.

13. My thanks to Joshua Grace for sharing the concept of “modular” motor transport. See Grace, *African Motors*, chap. 4.

14. F. D. Lugard, *The Rise of Our East African Empire: Early Efforts in Nyasaland and Uganda*, 2 vols. (Edinburgh: W. Blackwood and Sons, 1893).

15. F. D. Lugard, *The Dual Mandate in British Tropical Africa* (Edinburgh: William Blackwood and Sons, 1922), chap. 1. On the historical dynamics underlying this shift: John Darwin, “Imperialism and the Victorians: The Dynamics of Territorial Expansion,” *EHR* 112, no. 447 (1997): 614–642.

16. Lugard, *Dual Mandate*, vii.

17. Susan Pedersen, *The Guardians: The League of Nations and the Crisis of Empire* (New York: Oxford University Press, 2015), 109.

18. Lugard, *Dual Mandate*, 96, 193–194, 196, 198, 606.

19. On the more limited ambitions of colonial states in “frontier” regions: Benjamin D. Hopkins, *Ruling the Savage Periphery: Frontier Governance and the Making of the Modern State* (Cambridge, MA: Harvard University Press, 2020).

20. Lugard, *Dual Mandate*, 462–464, 470.

21. Lugard, 463, 472–473.

22. TNA, CO 96/671/7/1, (ill.) to L. M. S. Amery, January 26, 1927, 1; TNA, CO 96/671/7, Governor of the Gold Coast to L. S. Amery, September 19, 1927, 12; TNA, CO 96/702/13/6, “No. III of 1932–33 Report of the Railway Revenue Committee (Road v. Rail), Ordered by his Excellency the Governor to be Printed,” 1932, 8.

23. Lugard, *Dual Mandate*, 500–501.

24. Hart, *Ghana*, 38–39.

25. Pedersen, *Guardians*, 110.

26. Hart, *Ghana*, 32–33; on road use in the Gold Coast compare Domenico Cristofaro, “From Caravans to Lorries: Shifting Patterns of Mobility and Colonial Roadmaking in Northern Ghana (1896–1936),” *International Journal of African Historical Studies* 53, no. 3 (2020): 289–314.

27. Daniel Headrick, *Power over Peoples: Technology, Environments, and Western Imperialism, 1400 to the Present* (Princeton, NJ: Princeton University Press, 2010), 50, 52.

28. Dr.-Ing. Remy, “Der Verkehr im neuen Afrika,” *Koloniales Taschenbuch* 1 (1941): 28.

29. LSE, RJC, 8/7, Sir Abe Bailey, “A Trans-African Highway. Cape to Cairo by Car: Practical Imperialism,” *Sunday Times*, November 27, 1927.

30. Dr. Ing. Remy, “Die koloniale Verkehrspolitik in Afrika,” in *Kolonialbahnbau / Die koloniale Verkehrspolitik in Afrika: Kolonial- und Tropentechnik*, vol. 2, ed. Karl Krüger (Vienna/Leipzig: Otto Elsner Verlagsgesellschaft, 1942), 43.

31. BAB, NS 52/101, “Zusammenfassung der wichtigsten Erkenntnisse der Abteilung IV ‘Verkehr und Technik’ vom Beginn ihrer Tätigkeit bis zur Stilllegung im Februar 1943,” March 1943, 29.

32. Hart, *Ghana*, 30–31.

33. TNA, CO 795/97/2/1, “Memorandum setting out the case for closer co-operation on the part of the Government of Northern Rhodesia in securing to the Rhodesian Railway System the whole of the traffic of that territory,” attachment to letter from H. J. Stanley to Edward Harding, May 30, 1938.

34. TNA, CO 691/142/5/7, Mining company (unsigned) to P. E. Mitchell, July 23, 1935; TNA, CO 691/142/5/12, T. D. Bayne to Home Office, August 29, 1935.

35. Charles Maitre-Devallon, “Considérations générales sur l’évolution des transports en Afrique Tropicale au cours des dernières années,” in *ACVIII*, vol. 2, 1289–1290.

36. Wilfrid Dyson Hambly, *With a Motor Truck in West Africa* (New York: Century, 1931), 166–167.

37. Sara Berry, “Hegemony on a Shoestring: Indirect Rule and Access to Agricultural Land,” *Africa* 62, no. 3 (1992): 327–355. For the weak colonial state in British Africa: William Cunningham Bissell, *Urban Design, Chaos, and Colonial Power in Zanzibar* (Bloomington: Indiana University Press, 2011), esp. chap. 2.

38. LSE, RJC, 8/39, English translation of report from M. Maitre-Devallon from the Paris Colonial Exposition, 1931, 7.

39. LSE, RJC, 8/14, W. Rees Jeffreys and Lt. Col. A. Hacking, “Transport in Colonies, Dependencies and Protectorates with Particular Reference to Roads and Road Vehicles,” October 1931, 14–15.

40. LSE, RJC, 8/7, Bailey, “Trans-African Highway.”

41. LSE, RJC, 8/12, W. Rees Jeffreys, “The Government of Africa,” *Fortnightly Review* (December 1937), 5.

42. TNA, CO 822/29/6/c.i.title.

43. TNA, CO 795/81/10/10, W. C. Bottomley to Henry Birchenough, March 19, 1936; TNA, CO 795/81/10/c.i.Road Construction, Note from A. B. Cohen, January 30, 1936.

44. TNA, FCO 141/5515, Memorandum GC/TPB/17, "Report of Conference of Directors of Public Works, Kenya, Tanganyika Territory and Uganda, held at Nairobi on December 4th–6th, 1935," 2.

45. TNA, CO 822/19/16/1, Rees Jeffreys, "From the Cape to Cairo: Roads & Transport Problems in South & East Africa," memorandum attached to letter from Jeffreys to Sidney Webb, June 14, 1929, 7.

46. LSE, RJC, 8/49, Rees Jeffreys to Hilda Matheson, February 8, 1934.

47. LSE, RJC, 8/7, Rees Jeffreys to Samuel Wilson, August 20, 1930.

48. LSE, RJC, 8/20, "African Diary, 1928–29," February 21, 1929.

49. TNA, CO 822/29/6/3, "Extract from a Letter from an Officer of a Big Corporation who has travelled much in Africa by road," 1–2.

50. TNA, CO 267/664/4/1, Douglas Jardine to Malcolm Macdonald, June 30, 1938, 3.

51. TNA, CO 583/144/14/1, Governor of Nigeria to Amery, September 18, 1926, 7–8.

52. TNA, CO 795/47/9/1, J. C. Maxwell to Lord Passfield, May 1, 1931, 1; appended memo from Director of Public Works to Chief Secretary of Northern Rhodesia, n.d., 1.

53. LSE, RJC, 8/48, memo of Rees Jeffreys, "Road and Rail in Africa," 3.

54. LSE, RJC, 8/46, Patrick Balfour, "Roadmaking in French Africa," *Evening Standard*, December 17, 1936, 7.

55. LSE, RJC, 8/14, Jeffreys and Hacking, "Transport in Colonies," 4.

56. LSE, RJC, 8/44, A. J. C. Huddleston to Rees Jeffreys, February 26, 1930, 5.

57. TNA, CO 822/29/6/5a, draft letter from Sir S. Wilson to Rees Jeffreys, August 18, 1930.

58. TNA, CO 795/75/10/1, Hubert Young to Philip Cunliffe-Lister, March 8, 1935, 2.

59. See Bissell, *Urban Design*.

60. TNA, CO 533/748/3, Edward Denham to Amery, July 31, 1927, 1–2; TNA, CO 533/748/7, Wm. McGregor Ross to Anthony Bevir, November 15, 1927, 1.

61. Sean O'Connell, *The Car and British Society: Class, Gender and Motoring, 1896–1939* (Manchester, UK: Manchester University Press, 1998), 13, 16–18.

62. ASF, FTF, album 107.

63. TNA, WO 95/5368/9; IWM, Q15653; W. W. Campbell, *East Africa by Motor Lorry: Recollections of an Ex-Motor Transport Driver* (London: John Murray, 1928), 36.

64. TNA, CO 267/637/1/1, J. C. May to Undersecretary of State for the Colonies, March 1, 1932, 1.

65. "Les Transports," *Revue de l'aluminium et de ses applications, numéro spécial de l'Exposition Coloniale* 8, no. 43 (May–June 1931): 1424.

66. LSE, RJC, 8/39, Report from Maître-Devallon, 5.

67. TNA, CO 267/637/1/1, May to Undersecretary, 1.

68. TNA, CO 96/702/13/6, "No. III of 1932–33 Report," 8, 11–13. The African Survey summed up the economics of transport similarly: Lord Hailey, *An African Survey: A Study of Problems Arising in Africa South of the Sahara*, 2nd ed. (London: Oxford University Press, 1945), 1608–1610.

69. TNA, CO 96/677/8/1, Governor to Amery, January 21, 1928, 3.

70. TNA, CO 96/702/13/6, "No. III of 1932–33 Report," 4–5.

71. TNA, CO 96/702/13/6, "No. III of 1932–33 Report," 14; TNA, CO 96/702/13/7, Hugh Thomas to Philip Cunliffe-Lister, June 25, 1932, 14.

72. Hart, *Ghana*, 49.

73. TNA, CO 267/656/8/1, Henry Moore to W. G. A. Ormsby-Gore, 1–2.

74. TNA, CO 536/190/7/c.i.Transport Omnibus Services, comment of J. E. W. Flood, August 26, 1936.

75. LSE, RJC, 8/48, Jeffreys, “Road and Rail,” 2; TNA, CO 822/19/16/1, Jeffreys, “From the Cape to Cairo,” 6.

76. LSE, RJC, 8/20, “African Diary, 1928–29,” February 21, 1929.

77. Leigh Gardner, *Taxing Colonial Africa: The Political Economy of British Imperialism* (Oxford: Oxford University Press, 2012), 8, 63.

78. LSE, RJC, 8/48, Jeffreys, “Road and Rail,” 1.

79. Ordinance No. 46, “The Carriage of Goods by Motor (Prohibition) Ordinance, 1932,” *Annual Report on the Social and Economic Progress of the People of the Kenya Colony and Protectorate, 1932* (London: His Majesty’s Stationery Office, 1934), 47. On transport legislation in East Africa in the 1930s: W. Rodney Long, *Transport Control Abroad: Recent Outstanding Measures, Trends and Developments* (Washington, DC: Government Printing Office, 1939), 75–79.

80. TNA, CO 691/138/6/2, “The Carriage of Goods by Motor (Prohibition) Ordinance, 1934 (No. 8 of 1934): Legal Report,” April 30, 1934, 1.

81. TNA, CO 691/159/17/1, “Report of a Committee Appointed to Inquire into the Question of Competition between Road Transport and Railways and the Possibility of Co-ordinating the Various Forms of Transport in the Tanganyika Territory,” July 2, 1937, 1, 9.

82. TNA, FCO 141/5516, Memorandum TPB/37/4: “Memorandum by the General Manager, Tanganyika Railways,” January 8, 1937, 1–2.

83. Grace, *African Motors*, chaps. 1 and 2.

84. TNA, CO 96/702/13/6, “No. III of 1932–33 Report,” 17–20.

85. TNA, CO 96/724/23/2, Draft of Letter from P. L. Cunliffe-Lister to Mr. MacLennan et al., May 29, 1935, 2; TNA, CO 267/652/5/1, Henry Moore to W. G. A. Ormsby-Gore, October 15, 1936, 2–3; Ordinance No. 38 of 1936: Carriage of Goods by Road, *The Laws of the Gold Coast (including Togoland under British Mandate)*, vol. 2 (Accra: Government Printer, 1937); Ordinance No. 6 of 1937: Carriage of Goods by Road, *Legislation of Sierra Leone* (Freetown: Government Printer, 1937).

86. TNA, CO 96/730/6/6, “Extract of Proceedings of Legislative Council Meeting Held on 31st July 1936,” Enclosure no. 3 to letter from Arnold Hodson to W. G. A. Ormsby-Gore, September 10, 1936, 12–14.

87. *Nyasaland: Report for 1921* (London: His Majesty’s Stationery Office, 1923), 1.

88. On these bridgeheads: Darwin, “Imperialism and the Victorians,” esp. 629–630, 641.

89. Nuno Severiano Teixeira, “Política externa e política interna no Portugal de 1890: O Ultimatum Inglês,” *Análise Social* 23, no. 4 (1987): 687–719.

90. McCracken, *Malawi*, 38–65; Brian Morris, *An Environmental History of Southern Malawi: Land and People of the Shire Highlands* (Cham, Switzerland: Palgrave Macmillan, 2016), 47–56.

91. *Nyasaland: Report of 1921*, 4; McCracken, *Malawi*, 76.

92. Leroy Vail, “The Making of an Imperial Slum: Nyasaland and Its Railways, 1895–1935,” *JAH* 16, no. 1 (1975): 91–93.

93. Elias Mandala, “Feeding and Fleecing the Native: How the Nyasaland Transport System Distorted a New Food Market, 1890s–1920s,” *Journal of Southern Africa Studies* 32, no. 3 (2006): 506–507; Jutta Bolt and Erik Green, “Was the Wage Burden Too Heavy? Settler Farming, Profitability, and Wage Shares of Settler Agriculture in Nyasaland, c. 1900–60,” *JAH* 56 (2015): 223.

94. Vail, “Imperial Slum,” 89, 100–102, 108, 111.

95. McCracken, *Malawi*, 98, 174–175.

96. Ewout Frankema, “Raising Revenue in the British Empire, 1870–1940: How ‘Extractive’ Were Colonial Taxes?,” *JGH* 5 (2010): 465, 469.

97. Morris, *Environmental History*, 111–113.

98. TNA, CO 525/197/7/1, Mansen Bartlett, “Memorandum on Mechanical Road Transport in Nyasaland and Its Post War Development,” January 7, 1944, 1–2. On the interwar tobacco industry: McCracken, *Malawi*, 162–167; Morris, *Environmental History*, 142–148

99. TNA, CO 525/197/7/1, Bartlett, “Memorandum,” 3.

100. John McCracken, “Bicycles in Colonial Malawi: A Short History,” *Society of Malawi Journal* 64, no. 1 (2011): 7.

101. Rangeley, “Brief History,” 38–39, 44; Bolt and Green, “Wage Burden,” 218.

102. Charles Ponsonby, “Nyasaland,” *Journal of the Royal Society of Arts* 74, no. 3839 (1926): 747–748.

103. McCracken, *Malawi*, 158–159.

104. TNA, CO 525/136/10/1, “Proposals for further works to be executed from the East African Guaranteed Loan,” November 29, 1929, attachment to letter from T. S. W. Thomas to Lord Passfield, January 31, 1930, 5.

105. TNA, CO 525/131/5/1, Charles Bowring to Amery, April 24, 1929, 3.

106. TNA, CO 525/131/5/1, B. R. Peters, “Memorandum: East African Loan, Road Programme,” March 21, 1929, 2.

107. TNA, CO 525/120/11/1, Charles Bowring to Amery, April 25, 1927, 1; TNA, CO 525/136/10/1, “Proposals for further works,” 3–4.

108. TNA, CO 525/136/10/c.i.title, note of Downie, February 26, 1930.

109. TNA, CO 525/157/8/1, Harold Kittermaster to Cecil Bottomley, December 1934, 1.

110. TNA, CO 525/160/17/c.i.Boundary, note of W. A. Greenhill, November 13, 1936; TNA, CO 525/160/17/1, Harold Kittermaster to W. G. A. Ormsby-Gore, September 19, 1936, 1.

111. TNA, CO 525/157/8/1, Kittermaster to Bottomley, 2.

112. TNA, CO 525/157/8/1, Kittermaster to Bottomley, 1. On the “conspicuous” role of Indian shopkeepers and merchants in East Africa: Hailey, *African Survey*, 335.

113. TNA, CO 525/160/17/1, Kittermaster to Ormsby-Gore, 1.

114. Alan K. Smith, “António Salazar and the Reversal of Portuguese Colonial Policy,” *JAH* 15, no. 4 (1974): 656, 663–665; Miguel Bandeira Jerónimo, “The States of Empire,” in *The Making of Modern Portugal*, ed. Luís Trindade (Newcastle: Cambridge Scholars, 2013), 86; Valentim Alexandre, “The Colonial Empire,” in *Contemporary Portugal: Politics, Society and Culture*, ed. António Costa Pinto (New York: Columbia University Press, 2003), 72–73. On the private use of forced labor in Portuguese Africa: Miguel Bandeira Jerónimo, *The “Civilising Mission” of Portuguese Colonialism, 1870–1930*, trans. Stewart Lloyd-Jones (Houndmills, Basingstoke, UK: Palgrave Macmillan, 2015). For international perception of Portuguese colonialism: Márcia Gonçalves, “The Scramble for Africa Reloaded? Portugal, European Colonial Claims and the Distribution of Colonies in the 1930s,” *CEH* 30 (2021): 2–15.

115. TNA, CO 525/160/17/1, Kittermaster to Ormsby-Gore, 1–2.

116. McCracken, *Malawi*, 160.

117. TNA CO 525/160/17/1, Kittermaster to Ormsby-Gore, 1–2.

118. TNA CO 525/160/17/c.i.Boundary, note of Greenhill.

119. TNA, CO 525/197/7/1, Bartlett, “Memorandum,” 3.

120. TNA, CO 525/164/2/10, A. S. O. Hodgson to J. A. Calder, September 4, 1936, 1; TNA, CO 525/164/2/12, Thompson, Quarrell & Co., Solicitors to Colonial Office, October 27, 1936, 1.

121. McCracken, *Malawi*, 176.

122. TNA, CO 525/159/20/1, J. A. Calder to Harold Kittermaster, November 25, 1935. Underdeveloped Nyasaland received more CDF monies than any other African territory: David Meredith, “The British Government and Colonial Economic Policy, 1919–39,” *Economic History Review* 28, no. 3 (1975): 490.

123. TNA, CO 525/164/2/4, F. D. Hammond to J. A. Calder, February 5, 1936.
124. TNA, CO 525/159/20/2, Harold Kittermaster to J. A. Calder, December 1935.
125. TNA, CO 525/159/20/c.i.Transport, note of M. A. Greenhill, January 6, 1936.
126. TNA, CO 525/164/2/12, Inaco Conforzi, “Notes re Transport of Loose Tobacco by Rail,” August 1935, 1.
127. Vail, “Imperial Slum,” 110n93; Elias Coutinho Mandala, *Work and Control in a Peasant Economy: A History of the Lower Tchiri Valley in Malawi, 1859–1960* (Madison: University of Wisconsin Press, 1990), 164.
128. TNA, CO 525/164/2/10, Hodgson to Calder, 1–2.
129. TNA, CO 525/164/2/12, Conforzi, “Notes re Transport,” 3–4; on tobacco prices: McCracken, *Malawi*, 194; on deficits: Gardner, *Taxing*, 93, fig. 5.1.
130. TNA, CO 525/164/2/10, Hodgson to Calder, 2–3.
131. TNA, CO 525/164/2/13, Draft letter from J. A. Calder to Governor Kittermaster, November 9, 1936.
132. TNA, CO 525/181/7/4, “Judgment,” 6, 10, 13.
133. TNA, CO 525/181/7/1, “Appeal Case,” 1–5.
134. TNA, CO 525/181/7/1, “Appeal Case,” 4–5.
135. TNA, CO 525/181/7/4, “Judgment,” 14.
136. TNA, CO 525/181/7/4, D. M. Kennedy to Malcolm Macdonald, June 14, 1939, 1–2.
137. TNA, CO 525/181/7/2, Governor (McKenzie-Kennedy) to Colonial Secretary (Macdonald), June 1, 1939.
138. TNA, CO 525/181/7/4, Kennedy to Macdonald, 3; TNA, CO 525/181/7/4, “Judgment,” 16–18.
139. Georges-Marie Haardt and Louis Audouin-Dubreuil, *The Black Journey: Across Central Africa with the Citroën Expedition* (New York: Cosmopolitan, 1927), 238–239, 258.
140. Haardt and Audouin-Dubreuil, 236, 238.
141. TNA, CO 822/12/19/1, L. D. Galton-Fenzie to Leo Amery, September 28, 1928.
142. See Pedersen, *Guardians*, 195–232, 325–355.
143. BAB, R 1001/9664, “Deutschostafrikas Verkehrsprobleme,” 38–40.
144. Konrad Schauer, “Die Kap-Kairo-Straße in Deutschost,” *Afrika-Nachrichten* 18, no. 7 (1937): 176–177.

6. THE FRENCH MODEL

1. ANOM, ALG GGA 24H/4, Note de l’Ingénieur en Chef, Ponts et Chaussées, Algiers, October 30, 1922; Extrait du Registre des Délibérations de la Commission Municipale de la Commune mixte de Laghouat, Session Ordinaire de Février, Séance du 22 Février 1923.
2. ANOM, ALG GGA 24H/4, Rapport du Subdivisionnaire A. Dussaud, May 9, 1923.
3. ANOM, ALG GGA 24H/4, Rapport de l’Ingénieur en Chef Scotto di Vettimo, November 12, 1924, 1.
4. ANOM, ALG GGA 24H/4, Note de Renseignements.
5. ANOM, ALG GGA 24H/4, Devis-Program, Scotto di Vettimo, November 12, 1924, Article 18.
6. ANOM, ALG GGA 24H/4, Procès-verbal, July 20, 1925, 6.
7. ANOM, ALG GGA 24H/4, Conférence entre services intéressés, avis de l’ingénieur en chef du service ordinaire, Algiers, May 16, 1924.
8. On the civilizing mission in French Africa: Alice Conklin, *A Mission to Civilize: The Republican Idea of Empire in France and West Africa, 1895–1930* (Stanford, CA: Stanford University Press, 1997). On automobility and the French civilizing mission in Indochina: Stéphanie Ponsavady, *Cultural and Literary Representations of the Automobile in French Indochina: A Colonial Roadshow* (Cham, Switzerland: Palgrave Macmillan, 2018), 2.

9. Marcel Olivier, “Avant-Propos,” in *Le Livre d’Or de l’Exposition coloniale internationale de Paris 1931*, ed. Fédération Française des Anciens Coloniaux (Paris: Librairie ancienne Honoré Champion, 1931), 11.

10. Fédération Française des Anciens Coloniaux, *Le Livre d’Or*, 22.

11. Corey Ross, *Ecology and Power in the Age of Empire: Europe and the Transformation of the Tropical World* (New York: Oxford University Press, 2017), 4.

12. Fédération Française des Anciens Coloniaux, *Le Livre d’Or*, 23.

13. On shared, “Latin” attitudes toward interwar colonial labor: Miguel Bandeira Jerónimo, “A League of Empires: Imperial Political Imagination and Interwar Internationalisms” in *Internationalism, Imperialism and the Formation of the Contemporary World: The Pasts of the Present*, ed. Miguel Bandeira Jerónimo and José Pedro Monteiro (Cham, Switzerland: Palgrave Macmillan, 2018), 87–126. On the Portuguese belief in “civilization through labor”: Miguel Bandeira Jerónimo, *The “Civilising Mission” of Portuguese Colonialism, 1870–1930*, trans. Stewart Lloyd-Jones (Houndmills, Basingstoke, UK: Palgrave Macmillan, 2015).

14. Hugo Silveira Pereira, “Colonial Railways and Conflict Resolution between Portugal and the United Kingdom in Africa (c. 1880–early 1900s),” *HoST: Journal of History of Science and Technology* 12 (2018): 75–105; Malyn Newitt and Corrado Tornimbeni, “Transnational Networks and Internal Divisions in Central Mozambique: An Historical Perspective from the Colonial Period,” *Cahiers d’études africaines* 192 (2008): 707–740; Leroy Vail, “The Making of an Imperial Slum: Nyasaland and Its Railways, 1895–1935,” *JAH* 16, no. 1 (1975): 89–112.

15. André Huybrechts, *Transports et structures de développement au Congo: Étude du progrès économique de 1900 à 1970* (Paris: Mouton, 1970), 47; Emizet François Kisangani, *The Belgian Congo as a Developmental State: Revisiting Colonialism* (London: Routledge, 2023), 91–93.

16. Matthew Craven, “Between Law and History: The Berlin Conference of 1884–1885 and the Logic of Free Trade,” *London Review of International Law* 3, no. 1 (2015): 40; Steven Press, *Rogue Empires: Contracts and Conmen in Europe’s Scramble for Africa* (Cambridge, MA: Harvard University Press, 2017), chap. 3.

17. Catherine Coquery-Vidrovitch, *Le Congo au temps des grandes compagnies concessionnaires, 1898–1930* (Paris: Mouton, 1972); Christopher Gray and François Ngolet, “Lambaréné, Okoumé and the Transformation of Labor along the Middle Ogooué (Gabon), 1870–1945,” *JAH* 40, no. 1 (1999): 87–107; Christopher J. Gray, *Colonial Rule and Crisis in Equatorial Africa: Southern Gabon, ca. 1850–1940* (Rochester, NY: University of Rochester Press, 2002).

18. J. P. Daughton, *In the Forest of No Joy: The Congo-Océan Railroad and the Tragedy of French Colonialism* (New York: W. W. Norton, 2021), chap. 1.

19. ANOM, ITP/152/16, “Mission de construction de la route du Chari,” 1913, 1. The Shari Road garners some attention in Libbie Freed, “Networks of (Colonial) Power: Roads in French Central Africa after World War I,” *H&T* 26, no. 3 (2010): 203–223.

20. ANOM, ITP/152/16, “Mission,” 3–5.

21. ANOM, ITP/152/16, “Mission,” 5, 8.

22. Romain Tiquet, *Travail forcé et mobilisation de la main-d’œuvre au Sénégal: Années 1920–1960* (Rennes: Presses Universitaires de Rennes, 2019), 27.

23. ANOM, BIB ECOL/14205/13, Commissariat de l’Afrique occidentale française, *Le Réseau routier de l’Afrique occidentale française* (Paris: Larose, 1931), 27; Lord Hailey, *An African Survey: A Study of Problems Arising in Africa South of the Sahara*, 2nd ed. (London: Oxford University Press, 1945), 624–626.

24. ANOM, ITP/152/16, “Mission,” 9.

25. Babacar Fall, *Le Travail forcé en Afrique Occidentale française (1900–1946)* (Paris: Karthala, 1993), 37–38; Alexander Keese, “Hunting ‘Wrongdoers’ and ‘Vagrants’: The

Long-Term Perspective of Flight, Evasion, and Persecution in Colonial and Postcolonial Congo-Brazzaville, 1920–1980,” *AEH* 44 (2016): 156; Freed, “Networks,” 214.

26. ANOM, 1TP/152/16, “Mission,” 10–12.

27. ANOM, 1TP/152/16, “Mission,” 12–17.

28. ANOM, 1TP/152/16, “Mission,” 18–23. On the construction of the Congo-Océan: Daughton, *Forest*.

29. Charles Maître-Devallon, “Considérations générales sur l’évolution des transports en Afrique Tropicale au cours des dernières années,” in *ACVIII*, vol. 2, 1280–1281.

30. Raffaello Riccardi, “Forme di cooperazione internazionale per l’avvaloramento dei territori africani,” in *ACVIII*, vol. 2, 1161.

31. Hailey, *African Survey*, 603.

32. Frederick Cooper, *Decolonization and African Society: The Labor Question in French and British Africa* (New York: Cambridge University Press, 1996), 33.

33. On the elaboration of European unity through interwar Eurafricanism: Peo Hansen and Stefan Jonsson, *Eurafrica: The Untold History of European Integration and Colonialism* (London: Bloomsbury, 2015); Sven Beckert, “American Danger: United States Empire, Eurafrica, and the Territorialization of Industrial Capitalism, 1870–1950,” *AHR* 122, no. 4 (2017): 1137–1170; Joseph Bohling, “Colonial or Continental Power? The Debate over Economic Expansion in Interwar France, 1925–1932,” *CEH* 26, no. 2 (2017): 217–241; Andrew Denning, “Unscrambling Africa: From Eurafrican Technopolitics to the Fascist New Order,” *JMH* 95, no. 3 (2023): 627–667; Philipp Nicolas Lehmann, “Infinite Power to Change the World: Hydroelectricity and Engineered Climate Change in the Atlantropa Project,” *AHR* 121, no. 1 (2016): 70–100; Benjamin J. Thorpe, “Eurafrica: A Pan-European Vehicle for Central African Colonialism (1923–1939),” *European Review* 26, no. 3 (2018): 503–513.

34. Karl Krüger, *Die Straßen der Welt: Eine Straßengeographie* (Berlin: Volk und Reich Verlag, 1937), 60. Technological definitions of Western civilization had a long colonial history: Michael Adas, *Machines as the Measure of Men: Science, Technology, and Ideologies of Western Dominance* (Ithaca, NY: Cornell University Press, 1989); Daniel Headrick, *Power over Peoples: Technology, Environments, and Western Imperialism, 1400 to the Present* (Princeton, NJ: Princeton University Press, 2010).

35. Hailey, *African Survey*, 1316.

36. Félix Chautemps, “Voies de communications coloniales,” *AC* 14, no. 12, January 28, 1913; “Où et comment construire des routes en Guinée,” *AC* 15, no. 16, February 5, 1914.

37. ANOM, AGEFOM 914/2741, Commissioner Marchand to Minister of Colonies and Inspector General of Travaux Publics, received August 24, 1927.

38. Ronald E. Robinson, “Introduction: Railway Imperialism,” and “Conclusion: Railways and Informal Empire,” in *Railway Imperialism*, ed. Clarence B. Davis and Kenneth E. Wilburn Jr. with Ronald E. Robinson (New York: Greenwood, 1991), 1–6, 175–196.

39. Daughton, *Forest*, 49, 52–53.

40. Hailey, *African Survey*, 1313–1316.

41. ANOM, AGEFOM 374/34bis/1, M. Gibert, “La Route coloniale,” *Science et Industrie*, December 1928, 87.

42. On the Depression’s effects in AOF: Daniel Castillo Hidalgo, “Crisis económica en África Occidental Francesa: El caso de Dakar, 1929–1939,” *Cuadernos de historia contemporánea* 37 (2015): 201–224.

43. Chautemps, “Voies.”

44. Ewout Frankema and Marlous van Waijenburg, “Metropolitan Blueprints of Colonial Taxation? Lessons from Fiscal Capacity Building in British and French Africa, c. 1880–1940,” *JAH* 55 (2014): 374, 393.

45. Fall, *Travail forcé*, 43.

46. ANOM, BIB ECOL/14205/13, Commissariat d'AOF, *Réseau routier*, 1–2.
47. Krüger, *Straßen*, 18.
48. On the lack of funding for colonial development projects see Frederick Cooper, "Writing the History of Development," *JMEH* 8, no. 1 (2010): 9; Bohling, "Colonial or Continental Power?," 225–226. Belgium's *Grands Travaux* project, on the other hand, received metropolitan funding, fueling development in the 1920s that saw the road network grow by ten times and 150,000 porters removed from regular service: Kisangani, *Belgian Congo*, 233–234.
49. Jean-Marie Pichat, "La Route Nord–Sud," *AC*, December 1933, 12.
50. Krüger, *Straßen*, 69.
51. ANOM, ITP/34/8, "Rapport de mission effectuée sur les routes de l'A.O.F. du 26 avril au 12 juillet 1933," 1.
52. ANOM, BIB ECOL/14205/13, Commissariat d'AOF, *Réseau routier*, 1. The 1937 figure is in ANOM, AGEFOM 374/34bis/1, M. Blosset, "Routes et pistes en Afrique Occidentale Française."
53. "L'Automobilisme en A.O.F.," *AC*, October 1929, 8–9.
54. "West Africa: Land Use and Land Cover Dynamics: Climate," United States Geological Survey, Earth Resources Observation and Science Center, <https://eros.usgs.gov/westafrica/node/157>.
55. Karl Krüger, "Strassengeographische Probleme in Afrika," in *ACVIII*, vol. 2, 1359.
56. Alexander Freudenberg, *African Throughways* (Johannesburg: Automobile Association of South Africa, 1939), 14–16.
57. BAB, NS 52/101, "Zusammenfassung der wichtigsten Erkenntnisse der Abteilung IV 'Verkehr und Technik' vom Beginn ihrer Tätigkeit bis zur Stilllegung im Februar 1943," March 1943, 22; E. W. Goerner and Karl Krüger, eds., *Straßenbau im tropischen Afrika* (Berlin: Forschungsgesellschaft für das Strassenwesen E.V. im nationalsozialistischen Bund Deutscher Technik, Arbeitsgruppe "Kolonialstraßenbau," 1941), 76.
58. ANOM, ITP/421/14, "Service des Travaux-Publics—Mission du Nord-Cameroun, rapport fait par M. Pruvost," February 10, 1936, 1–3.
59. "Où et comment construire des routes."
60. Robert Capot-Rey, *Géographie de la circulation sur les continents*, 6th ed. (Paris: Gallimard, 1946), 16, 21.
61. ANOM, ITP/34/8, "Rapport," 4bis, 5.
62. ANOM, ITP/34/8, "Rapport," 4–6.
63. ANOM, ITP/34/8, "Rapport," 5.
64. Maître-Devallon, "Considérations," 1282.
65. ANOM, AGEFOM 374/35/4, "Afrique Occidentale Française: I. Documentation: Les routes de la Guinée Française," July 1925, 230.
66. ANOM, ITP/34/8, "Rapport," 16–18.
67. ANOM, ITP/34/8, "Rapport," 6–7, 13–15, 28.
68. ANOM, ITP/34/8, "Rapport," 27.
69. Lieutenant Loiseau, *À cent à l'heure à travers le Sahara* (Paris: Éditions Liberté, 1929), 64, 66, 69–70.
70. John Cropper, "Running on Empty: Fossil Fuels, Local Fuels, and Entangled Infrastructures in Colonial Senegal, 1885–1945," *JAH* 63, no. 1 (2022): 32.
71. ANOM, ITP/34/8, "Rapport," 1.
72. Marlous van Waijenburg, "Financing the African Colonial State: The Revenue Imperative and Forced Labor," *JEH* 78, no. 1 (2018): 42.
73. Goerner and Krüger, *Straßenbau*, 79–80. They found that a team of one thousand workers would produce an average of 2.5 miles of road in a month from beginning to end. Accounting for one day of rest each week and time missed for sickness or injury, the

Belgians estimated twenty working days each month (or twenty thousand working days for a team of one thousand), so we can establish a rate of roughly eight thousand worker days per mile constructed in equatorial climates.

74. Marie Rodet, “Escaping Slavery and Building Diasporic Communities in French Soudan and Senegal, ca. 1880–1940,” *International Journal of African Historical Studies* 48, no. 2 (2015): 363, 372.

75. Tiquet, *Travail forcé*, 21.

76. Conklin, *Mission to Civilize*, 215.

77. A French author estimated fourteen million total residents of AOF in 1933. E.-L. Guernier, *L'Afrique: Champ d'expansion de l'Europe* (Paris: Librairie Armand Colin, 1933), 243–244. Approximately 26.5 percent of the total population of AOF was liable, considering demographic factors of age and sex. Van Waijenburg, “Financing,” 56.

78. Fall, *Travail forcé*, 202.

79. Van Waijenburg, “Financing,” 45.

80. Gregory Mann, “What Was the Indigénat? The ‘Empire of Law’ in French West Africa,” *JAH* 50 (2009): 335–336.

81. Kwabena Opere Akurang-Parry, “Colonial Forced Labor Policies for Road-Building in Southern Ghana and International Anti-Forced Labor Pressures, 1900–1940,” *AEH* 28 (2000): 25.

82. Fall, *Travail forcé*, 17.

83. Susan Pedersen, *The Guardians: The League of Nations and the Crisis of Empire* (New York: Oxford University Press, 2015), 258.

84. League of Nations, “Slavery Convention,” signed at Geneva, Switzerland, September 25, 1926, Article 5. United Nations, Office of the High Commissioner for Human Rights, <https://www.ohchr.org/en/professionalinterest/pages/slaveryconvention.aspx>; Akurang-Perry, “Colonial Forced Labor,” 13.

85. Prison labor: Ibra Sene, “Colonisation française et main d’oeuvre carcérale au Sénégal: De l’emploi des détenus des camps pénaux sur les chantiers des travaux routiers (1927–1940),” *French Colonial History* 5 (2004): 153–171. Military labor: beginning in 1926, the so-called *deuxième portion du contingent* reserved a percentage of annual military recruits for labor of public importance, providing a guaranteed labor pool. Tiquet, *Travail forcé*, 27; Fall, *Travail forcé*, 157–159; Myron Echenberg and Jean Filipovich, “African Military Labour and the Building of the Office du Niger Installations, 1925–1950,” *JAH* 27, no. 3 (1986): 533–551.

86. International Labour Organization, “Forced Labour Convention, 1930 (No. 29),” adopted in Geneva, Switzerland, June 28, 1930, https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C029; Tiquet, *Travail forcé*, 28–29.

87. M. Vicaire and M. Gubiani, “The Construction of Roads in New Countries, such as Colonies and Undeveloped Regions” (pamphlet 3-J), in Permanent International Association of Road Congresses, *Sixth Congress, Washington, 1930: Reports* (Washington, DC: Government Printing Office, 1930), 16.

88. Hailey, *African Survey*, 628.

89. ANOM, BIB ECOL/14205/13, Commissariat d’AOF, *Réseau routier*, 27.

90. Chautemps, “Voies.”

91. Keese, “Hunting ‘Wrongdoers,’” 164.

92. “Les Transports,” *Revue de l’aluminium et de ses applications, numéro spécial de l’Exposition coloniale* 8, no. 43 (May–June 1931): 1416.

93. Karl Krüger, “Koloniale Straßenbaufragen,” *Deutsche Kolonial-Zeitung* 50, no. 8 (1938): 267.

94. ANOM, AGEFOM 374/35/5, Ernest Haudos, “Les Voies de communication à la Côte d’Ivoire,” AC, January 1921.

95. Yan Slobodkin, “State of Violence: Administration and Reform in French West Africa,” *French Historical Studies* 41, no. 1 (2018): 34–37.

96. J. P. Daughton, “The ‘Pacha Affair’ Reconsidered: Violence and Colonial Rule in Interwar French Equatorial Africa,” *JMH* 91, no. 3 (2019): 512.

97. Frankema and van Waijenburg, “Metropolitan Blueprints,” 392.

98. Cooper, *Decolonization*, 89.

99. Romain Tiquet describes the road/labor nexus as “an ensemble of coercive practices reflecting a particular type of governmentality.” Tiquet, *Travail forcé*, 25.

100. Erdmute Alber, “Motorization and Colonial Rule: Two Scandals in Dahomey, 1916,” *Journal of African Cultural Studies* 15, no. 1 (2002): 85.

101. On these developments in AEF: Libbie Freed, “Conduits of Culture and Control: Roads, States, and Users in French Central Africa, 1890–1960” (PhD diss., University of Wisconsin–Madison, 2006).

102. Gray, *Colonial Rule*, 103.

103. André Gide, *Voyage au Congo* (Paris: Gallimard, 1981 [1927]), 116–117.

104. ANOM, AGEFOM 914/2741, Memorandum of Picanon, Inspector General of the Colonies, Yaoundé, January 15, 1927, 3–4.

105. Jan Vansina, *Paths in the Rainforests: Toward a History of Political Tradition in Equatorial Africa* (Madison: University of Wisconsin Press, 1990), 41, 43.

106. Tony Ballantyne, “Mobility, Empire, Colonisation,” *History Australia* 11, no. 2 (2014): 25; Kudzai Matereke, “‘Africa, Are We There Yet?’: Taking African Mobilities Seriously—Concluding Remarks,” *Transfers* 6, no. 2 (2016): 113.

107. Cooper, *Decolonization*, part 1.

108. Maître-Devallon, “Considérations,” 1284–1286.

109. Capot-Rey, *Géographie*, 21.

110. ANOM, AGEFOM 928/2907, “Projet de route de Bartoua vers Bétaré-Oya, [ill.] et l’A.E.F.,” April 17, 1934, 30–31.

111. ANOM, ITP/34/9, Jules Brévié to Minister of Colonies, April 6, 1935, 27–28.

112. A. I. Asiwaju, “Migrations as Revolt: The Example of the Ivory Coast and the Upper Volta before 1945,” *JAHS* 17, no. 4 (1976): 589.

113. Goerner and Krüger, *Straßenbau*, 75.

114. Nancy Rose Hunt, *A Colonial Lexicon: Of Birth Ritual, Medicalization, and Mobility in the Congo* (Durham, NC: Duke University Press, 1999), 174–175.

115. Luise White, *Speaking with Vampires: Rumor and History in Colonial Africa* (Berkeley: University of California Press, 2000), chap. 4.

116. Marcus Filippello, *The Nature of the Path: Reading a West African Road* (Minneapolis: University of Minnesota Press, 2017), 68, 94.

117. Gray and Ngolet, “Lambaréné,” 87.

118. Daughton, “‘Pacha,’” 505.

119. ANOM, MAD GGM D/6(5)/18, “Compte-rendu des travaux de prestations effectués en 1931 dans le District de Tsihombe.”

120. Keese, “Hunting ‘Wrongdoers,’” 161.

121. Asiwaju, “Migrations,” 577; Domenico Cristofaro, “From Caravans to Lorries: Shifting Patterns of Mobility and Colonial Roadmaking in Northern Ghana (1896–1936),” *International Journal of African Historical Studies* 53, no. 3 (2020): 306.

122. ANOM, ITP/34/8, “Rapport,” 6–7, 28, 31, 33, 38–39, 42. A Public Works inspection in Guinea raised similar complaints about local officials ignoring the recommendations of technical experts, because following their recommendations would require “too much work.” ANOM, ITP/34/11, Inspector General Launay to Governor General, March 9, 1934, 10.

123. ANOM, ITP/34/8, “Rapport,” 43, 54.

124. See Pedersen, *Guardians*, chap. 8.
125. ANOM 1TP/34/8, “Rapport,” 21, 32.
126. Gide, *Voyage*, 95.
127. ANOM, 1TP/34/8, “Rapport,” 16.
128. ANOM, 1TP/153/8, Inspector General Kair to Minister of Colonies, August 2, 1929, 2–5.
129. ANOM, 1TP/153/11, Rapport concernant la vérification du service automobile Tchad à Fort-Lamy, observations du Gouverneur Général, July 4, 1932; Governor-General (Antonetti) to Lieutenant Governor of Chad (Coppet), June 27, 1932, 3, 7.
130. Henri Cornu, “L’Automobile à Madagascar,” *AC*, October 1930, 11, 13.

7. THE ITALIAN MODEL

1. ASD, MAECI, MAI II, 181/20/96, Dichiarazione di Baldassare Damiani.
2. ASD, MAECI, MAI II, 181/20/96, Director of Fratelli Gondrand (Asmara/Mas-sawa) to Government of Eritrea, March 13, 1936.
3. ASD, MAECI, MAI II, 181/20/96, Memo n°1324 from Melotti to Vice-Governor Guzzoni, February 18, 1936. Workers described their fear in interviews decades later: Irma Taddia, *La memoria dell’impero: Autobiografie d’Africa Orientale* (Manduria: Piero Lacaita Editore, 1988), 92–94, 138.
4. Death figures: Giorgio Rochat, *Il colonialismo italiano* (Turin: Loescher, 1973), 185.
5. Contemporaries used the exonym Abyssinia interchangeably with Ethiopia; this chapter uses Ethiopia, except when quoted from contemporary documents. “Communication from the Italian Government: Abyssinian Atrocities Committed against Italian Workmen: Protest by the Italian Government to the League of Nations,” League of Nations document 208481/9, March 9, 1936, Official No. C. 123. M. 62 (Geneva: Series of League of Nations Publications, 1936). Italian original: ASD, MAECI, MAI II, 181/20/96, “Atrocità abissine contro operai italiani: Denuncia del Governo Italiano alla Società delle Nazioni,” March 9, 1936.
6. “Communication from the Italian Government.”
7. Stephanie Hom Cary, “Destination Italy: Tourism, Colonialism, and the Modern Italian Nation-State, 1861–1947” (PhD diss., University of California, Berkeley, 2007), 290.
8. Matteo Nardozi, “The Economic Policy of the Italian Administration in the Eritrean Colony in the Early 1920s: The Case of the Asmara Chamber of Commerce,” *Journal of European Economic History* 50, no. 1 (2021): 140, 142.
9. Ruth Ben-Ghiat and Mia Fuller, introduction to *Italian Colonialism*, ed. Ben-Ghiat and Fuller (New York: Palgrave Macmillan, 2005), 3. On *impero straccione*: Angelo Del Boca, *Gli Italiani in Africa Orientale* (Bari: Laterza, 1976), 3–4; Claudio Segrè, “Beggar’s Empire: Ideology and the Colonialist Movement in Liberal Italy,” *Proceedings of the Meeting of the French Colonial Historical Society* 4 (1979): 174–183; Nicola Labanca, *Oltremare: Storia dell’espansione coloniale italiana* (Bologna: Il Mulino, 2002), 12.
10. The regime’s goals in the colonial realm “were far more political than economic.” Gian Luca Podestà, “Eurafrica. Vital Space, Demographic Planning, and the Division of Labour in the Italian Empire: The Legacy of Fascist Autarky,” *Journal of European Economic History* 50, no. 1 (2021): 21.
11. On metropolitan *autostrade*: Massimo Moraglio, *Driving Modernity: Technology, Experts, Politics, and Fascist Motorways, 1922–1943*, trans. Erin O’Loughlin (New York: Berghahn Books, 2017).
12. Mark Choate, *Emigrant Nation: The Making of Italy Abroad* (Cambridge, MA: Harvard University Press, 2008), 1, 32. Compare Donna R. Gabaccia, *Italy’s Many Diasporas* (Seattle: University of Washington Press, 2000).

13. Gian Paolo Calchi Novati, *L'Africa d'Italia: Una storia coloniale e postcoloniale* (Rome: Carocci, 2011), 15–16, 23–26.

14. Rochat, *Colonialismo*, 62–63.

15. Calchi Novati, *L'Africa*, 122; Vanda Wilcox, *The Italian Empire and the Great War* (New York: Oxford University Press, 2021), 109.

16. Rocco Lauzi, Lodovico Bonamico, and Alfredo Strada, “The Construction of Roads in New Countries, Such as Colonies and Undeveloped Regions” (pamphlet 3-N), in *Sixth Congress, Washington, 1930: Reports*, ed. Permanent International Association of Road Congresses (Washington, DC: Government Printing Office, 1930), 2.

17. Italo Balbo, “La Litoranea Libica,” in *ACVIII*, vol. 2, 1196.

18. ASD, MAECI, MAI III, B.56, folder “Le opere ed i servizi civili: a) Le opere pubbliche,” “Le Opere Stradali in Tripolitania”; *La strada litoranea della Libia* (Verona: Mondadori, 1937), 11.

19. ASD, MAECI, MAI III, B.56, folder “Le opere ed i servizi civili: a) Le opere pubbliche,” untitled printed manuscript (title page missing), heading “Opere Stradali,” 3; Balbo, “Litoranea,” in *ACVIII*, 1195.

20. ACS, MAI, B. 94/6, Gabelli to Cabinet of the Minister of Colonies, December 2, 1928.

21. Lauzi, Bonamico, and Strada, “Construction,” 10.

22. On Italy in Libya before 1932: Ali Abdullatif Ahmida, *The Making of Modern Libya: State Formation, Colonization, and Resistance, 1830–1932* (Albany: State University of New York Press, 1994), chap. 6.

23. Rochat, *Colonialismo*, 99–101; R. J. B. Bosworth, *Italy and the Wider World, 1860–1960* (London: Routledge, 1996), 104–105; David Atkinson, “Geographical Knowledge and Scientific Survey in the Construction of Italian Libya,” *Modern Italy* 8, no. 1 (2003): 14. In total, scholars estimate that one hundred thousand of Libya’s total population of eight hundred thousand had died by 1931. Patrick Bernhard, “Behind the Battle Lines: Italian Atrocities and the Persecution of Arabs, Berbers, and Jews in North Africa during World War II,” *Holocaust and Genocide Studies* 26, no. 3 (2012): 427.

24. ACS, MAI, B.120/5, De Bono to Minister of Finance, December 9, 1929.

25. ASD, MAECI, MAI III, B.56, untitled printed manuscript (title page missing), heading “Opere Stradali,” 3.

26. ACS, MAI, B.123/2, Graziani to Minister of Colonies, March 12, 1932.

27. See Stephanie Malia Hom, *Empire’s Mobius Strip: Historical Echoes in Italy’s Crisis of Migration and Detention* (Ithaca, NY: Cornell University Press, 2019), 148–151.

28. Bosworth, *Italy and the Wider World*, 97–98, 100.

29. ASD, MAECI, MAI III, B.64, “La Linea Aerea Mogadiscio-Cartum: Da Roma al Benadir in 6 giorni,” Aviazione Nord Orientale Italiana, October 1934. On the economy of colonial Eritrea: Morton Jerven, Donatella Strangio, and Jacob Weisdorf, “A Case of Its Own? A Review of Italy’s Colonisation of Eritrea, 1890–1941,” *Journal of European Economic History* 50, no. 1 (2021): 99–132.

30. TNA, CO 533/430/6, Report of Arthur Bentinck for Sidney Barton, March 22, 1933. Various documents in this file recommend that the British develop trade with southern Ethiopia as a form of economic competition against Italy.

31. Labanca, *Oltremare*, 274–276.

32. ASD, MAECI, MAI III, B.63, Italo Papini, *La produzione dell’Etiopia* (Rome: L’Economia Italiana, 1938), 1–2, 8–9, 12. On the appeal of Ethiopia as “earthly paradise” and “agricultural El Dorado”: Haile Larebo, *The Building of an Empire: Italian Land Policy and Practice in Ethiopia 1935–1941* (Oxford: Clarendon, 1994), 65; Calchi Novati, *L’Africa*, 282.

33. Larebo, *Building*, 277–288.

34. Tekeste Negash, *Italian Colonialism in Eritrea, 1882–1941: Policies, Praxis and Impact* (Uppsala: Acta Universitatis Upsaliensis, 1987), 41; Abdussamad H. Ahmad, “Trade Relations of Northern Ethiopia with Italian Eritrea 1903–1935,” *Africa: Rivista trimestrale di studi e documentazione dell’Istituto Italiano per l’Africa e l’Oriente* 52, no. 3 (1997): 421, 430.

35. ASD, MAECI, MAI, AP 13/103, De Bono to “Eccellenza,” May 27, 1931.

36. Attilio Arcangeli, *La camionale Mar Rosso–Altipiano Eritreo (Massaua–Nefasit–Decameré)* (Rome: Istituto Grafico Tiberino, 1936), 19–20, 32–33, 35.

37. Pietro Badoglio, *La Guerra d’Etiopia* (Milan: Mondadori, 1936), 6–7.

38. Harold G. Marcus, *A History of Ethiopia*, updated ed. (Berkeley: University of California Press, 2002), 110–118, 125–130.

39. ASD, MAECI, MAI, AP 13/103, De Bono to “Eccellenza.” On this policy: Gian Luca Podestà, *Il mito dell’impero: Economia, politica e lavoro nelle colonie italiane dell’Africa orientale, 1898–1941* (Turin: G. Giappichelli Editore, 2004), 194.

40. Marcus, *Ethiopia*, 126; Podestà, *Mito*, 241.

41. ASF, FCS, CEACS 47, Fasc. 420/47.

42. On this debate: ASD, MAECI, MAI, AP 13/103, De Bono to Director General, Africa Orientale, March 6, 1931; Telegram #208833, Ministero degli Affari Esteri (MAE) to Ministero delle Colonie (MC), March 16, 1931.

43. Caitlin Collis, “Paving the Way to Empire: Roads in Ethiopia from Menelik to Mussolini” (PhD diss., University of Pennsylvania, 2022), chap. 1; Richard Pankhurst, “Transport and Communications in Ethiopia, 1835–1935 (I),” *JTH* 5, no. 2 (1961): 69–88.

44. Giuseppe Cobolli Gigli, *Strade imperiali* (Milan: Mondadori, 1938), 40, 75.

45. ASD, MAECI, MAI, AP 13/103, Italian Legation in Ethiopia to MAE, MC, and Governments of Eritrea and Somalia, February 21, 1933.

46. ASD, MAECI, MAI, AP 98/354, “Une concession suisse de réseau routier pour l’Éthiopie,” M. F. Köppel to the 23rd General Assembly of the *Union des Professionels Suisses de la Route*, May 26, 1935, 2–5, 11–12.

47. See Patricia Purtschert, Francesca Falk, and Barbara Lüthi, “Switzerland and ‘Colonialism without Colonies’: Reflections on the Status of Colonial Outsiders,” *Interventions* 18, no. 2 (2016): 286–302.

48. Collis, “Paving,” 7, 43–45.

49. ACS, ARG, 11/14/7, “Discorso 25–2–1934,” 4–5.

50. Claudio Segrè, *Fourth Shore: The Italian Colonization of Libya* (Chicago: University of Chicago Press, 1974), 82–88.

51. Labanca, *Oltremare*, 276.

52. Simonetta Falasca-Zamponi, *Fascist Spectacle: The Aesthetics of Power in Mussolini’s Italy* (Berkeley: University of California Press, 1997), 90–95.

53. Benito Mussolini, “Al Gran Rapporto del Fascismo: Discorso pronunciato il 14 settembre a Palazzo Venezia,” in *Scritti e discorsi di Benito Mussolini, edizione definitiva*, vol. 7 (Milan: Ulrico Hoepli, 1934), 130.

54. Paul Baxa, *Roads and Ruins: The Symbolic Landscape of Fascist Rome* (Toronto: University of Toronto Press, 2010), 38, 144. On the relation between “glorious past” and forward movement into the future through the myth of *romanità*: Claudia Lazzaro, “Forging a Visible Fascist Nation: Strategies for Fusing Past and Present,” in *Donatello among the Blackshirts: History and Modernity in the Visual Culture of Fascist Italy*, edited by Claudia Lazzaro and Roger J. Crum (Ithaca, NY: Cornell University Press, 2005), 13–31.

55. Richard Pankhurst, “Road-Building during the Italian Fascist Occupation of Ethiopia (1936–1941),” *Africa Quarterly* 15, no. 3 (1975): 37.

56. ACS, MAI, B.123/1, “Relazione: Gestione lavori stradali,” August 12, 1931; Pankhurst, “Road-Building,” 28–29.

57. ACS, ARG, 11/14/10, Italo Balbo, “La Litoranea libica,” *Nuova antologia* anno 72, fasc. 1559 (March 1, 1937), 7.

58. *La strada litoranea*, 16.

59. *La strada litoranea*, 24, 34. ACS, ARG, 11/14/10, Balbo, “Litoranea,” *Nuova antologia*, 7–9.

60. ACS, MAI, B.122, folder “Pratica Epifani,” Ugo Marchetti, “La grande strada dell’Africa romana,” *Il giornale d’Italia*, February 9, 1937, 5.

61. Balbo, “Litoranea,” ACVIII, 1199–1202; *La strada litoranea*, 43, 50.

62. *La strada litoranea*, 65.

63. *La strada litoranea*, 37–38.

64. ASD, MAECI, MAI IV, 45/4, “Le Vie di comunicazione,” [typed manuscript paginated 15–25], 18–19.

65. *La strada litoranea*, 69.

66. Podestà, Mito, 241.

67. Negash, *Italian Colonialism*, 130–131.

68. Nicola Labanca, *La guerra d’Etiopia 1935–1941* (Bologna: Il Mulino, 2015), 48–49; R. J. B. Bosworth, *Mussolini and the Eclipse of Italian Fascism: From Dictatorship to Populism* (New Haven, CT: Yale University Press, 2021), 126–127.

69. Pankhurst, “Road-Building,” 22–23.

70. Badoglio, *Guerra*, 5.

71. ASD, MAECI, MAI II, 181/3/16, Visconti Prasca, “Ricognizione sull’organizzazione militare eritrea,” May 25, 1934, 1–2, 9–10.

72. ASD, MAECI, MAI III, B.3/1, “La campagna Italo-Etiopica (1935–1936): Capitolo I,” typescript, 5.

73. ASD, MAECI, MAI III, B.56, Fasc. O.O.P.P. in Generale—Relazioni—Eritrea, “Appunto sulle spese e le attività di carattere civile compiute nelle Colonie dell’Africa Orientale nel 1933/34,” 1.

74. Arcangeli, *Camionale*, 14; Pankhurst, “Road-Building,” 25.

75. Pankhurst, “Road-Building,” 28.

76. Arcangeli, *Camionale*, 60, 63.

77. Taddia, *Memoria*, 124.

78. Arcangeli, *Camionale*, 22, 142.

79. TNA, CO 535/109/1/24, B. H. Bell to High Commissioner for Egypt and the Sudan, March 21, 1935.

80. TNA, CO 535/109/1/c.i.title; TNA, CO 535/109/1/38, F. G. Tyrrell to Malcolm Macdonald, June 12, 1935.

81. Arcangeli, *Camionale*, tavola V.

82. Arcangeli, 22, 25, 93, 102, 132–135, 142.

83. Roger Griffin, *Modernism and Fascism: The Sense of a Beginning under Mussolini and Hitler* (New York: Palgrave Macmillan, 2007), 222, 244.

84. Pankhurst, “Road-Building,” 40.

85. Arcangeli, *Camionale*, 139.

86. On corruption: Paolo Giovannini and Marco Palla, eds., *Il fascismo dalle mani sporche: Dittatura, corruzione, affarismo* (Bari: Laterza, 2019).

87. Victoria de Grazia, *The Perfect Fascist: A Story of Love, Power, and Morality in Mussolini’s Italy* (Cambridge, MA: Belknap Press of Harvard University Press, 2020), 253; Bosworth, *Mussolini*, 180–181.

88. Labanca, *Guerra*, 49, 89–90.

89. ASD, MAECI, MAI II, 181/36, Fasc. A.O.I.—Campagna—Organizzazione Automezzi—Milizia delle strade, “L’organizzazione dei trasporti,” 1; Rodolfo Graziani, *Il fronte sud* (Milan: Mondadori, 1938), 58, 87, 97–99.

90. Marcus, *Ethiopia*, 138–142; Robert Mallett, *Mussolini in Ethiopia, 1919–1935: The Origins of Fascist Italy's African War* (New York: Cambridge University Press, 2015), 50; Christian Goeschel, *Mussolini and Hitler: The Forging of a Fascist Alliance* (New Haven, CT: Yale University Press, 2018), 61–62; Bosworth, *Mussolini*, 182–186.

91. ASD, MAECI, MAI III, B.3/2, Rodolfo Graziani, “La preparazione militare etiopica, con particolare riferimento allo scacchiere somalo,” 2, 8.

92. ASD, MAECI, MAI III, B.3/1, “Capitolo I,” 13.

93. ASD, MAECI, MAI III, B.3/1, “Capitolo I,” 5, 19; ASD, MAECI, MAI III, B.3/2, Graziani, “Preparazione,” 28.

94. ASD, MAECI, MAI III, B.3/2, Memorandum n°1259 from Badoglio to Mussolini, April 29, 1935, 1–2.

95. ASF, “La Fiat in A.O.I.,” 3.

96. De Grazia, *Perfect Fascist*, 260.

97. Marcus, *Ethiopia*, 142.

98. Benito Mussolini, “Prefazione,” in Badoglio, *Guerra*, vii–ix.

99. Labanca, *Oltremare*, 189.

100. Matteo Dominioni, *Lo sfascio dell'impero: Gli italiani in Etiopia 1936–1941* (Rome: Laterza, 2008), 5–6.

101. ASD, MAECI, MAI III, B.3/1, “Capitolo I,” 1.

102. LUCE, D037101, *Il cammino degli eroi*, 1936.

103. On Italian colonial films: Ruth Ben-Ghiat, *Italian Fascism's Empire Cinema* (Bloomington: Indiana University Press, 2015).

104. De Grazia, *Perfect Fascist*, 260, 262.

105. ASD, MAECI, MAI II, 181/20/97, “La colonna autocarrata del corpo d'occupazione di Addis Abeba,” 10–11, 13.

106. ASD, MAECI, MAI V, ASMAI 15, Badoglio to Alto Commissario per le Colonie dell'Africa Orientale, May 7, 1936, 3:15 p.m., 11.

107. ASD, MAECI, MAI II, 181/36, “L'organizzazione,” 7–8.

108. Valerio Castronovo, *Fiat 1899–1999: Un secolo di storia italiana* (Milan: Rizzoli, 1999), 495.

109. Mira Wilkins and Frank Ernest Hill, *American Business Abroad: Ford on Six Continents* (Detroit: Wayne State University Press, 1964), 259–260.

110. Castronovo, *Fiat*, 495–496.

111. ASF, “Fiat in A.O.I.,” 4.

112. LUCE, D037101, *Cammino*.

113. De Grazia, *Perfect Fascist*, 263.

114. ASD, MAECI, MAI V, ASMAI 15, Badoglio to Alto Commissario, 6.

115. Badoglio, *Guerra*, 226.

116. ASD, MAECI, MAI V, ASMAI 15, Quirino Armellini, “La marcia su Addis Abeba,” 3; ASD, MAECI, MAI V, ASMAI 15, “Rapporto di Badoglio circa la marcia su Addis Abeba,” May 11, 1936, 5.

117. ASD, MAECI, MAI V, ASMAI 15, Armellini, “Marcia,” 1.

118. ASD, MAECI, MAI V, ASMAI 15, Badoglio to Alto Commissario, 1–4; Badoglio, *Guerra*, 229.

119. ASD, MAECI, MAI V, ASMAI 15, Badoglio to Alto Commissario, 12; Badoglio, *Guerra*, 231.

120. ASD, MAECI, MAI V, ASMAI 15, Badoglio to Alto Commissario, 13.

121. ASF, “Fiat in A.O.I.,” 8; ASD, MAECI, MAI V, ASMAI 15, Badoglio to Alto Commissario, 14.

122. De Grazia, *Perfect Fascist*, 265, 278.

123. Ben-Ghiat and Fuller, introduction to *Italian Colonialism*, 2.

124. E. W. Polson Newman, *The New Abyssinia* (London: Rich & Cowan, 1938), 277–278.
125. On metropolitan *autostrade* as Fascist propaganda in the 1920s: Moraglio, *Driving*, chap. 3.
126. These include: LUCE, D048804, *Strade romane in terra d'oltre mare*, 1936; B/ B1154, “La rete stradale,” August 25, 1937; D008504, *La strada Dancala: Tronco Assab–Sardò costruito dall'impresa Romolo Vaselli*, 1937.
127. Patricia Hayes, “Empty Photographs: Ethnography and the Lacunae of African History,” in *Ambivalent: Photography and Visibility in African History*, ed. Patricia Hayes and Gary Minkley (Athens: Ohio University Press, 2019), 60.
128. On making empire “consumable”: Diana Garvin, “Building Pasta’s Empire: Barilla in Italian East Africa,” *Modern Italy* 28, no. 2 (2023): 97–126.
129. Manlio Morgagni, ed., *Italia imperiale: Edizione speciale della rivista illustrata del popolo d'Italia* (Milan: Popolo d'Italia, 1937).
130. *Napoli–Addis Abeba* (Naples: no publisher, 1937).
131. ASF, FTF, album 83, 46 verso.
132. WOLF, XB1992.1822, “Volete diventare automobilisti?” (Milan: Fiat, 1937).
133. See ASF, FTF, album 83, 10 recto.
134. ACS, MAI, B.122, Marchetti, “Grande strada,” 5.
135. *La strada litoranea*, 9.
136. ASD, MAECI, MAI IV, 45/4, “Vie di comunicazione,” 15–17.
137. *La strada litoranea*, 127; Balbo, “Litoranea,” ACVIII, 1204.
138. Balbo, “Litoranea,” *Nuova antologia*, 5.
139. ACS, ARG, 11/14/10, Rodolfo Graziani, “Le strade della Cirenaica,” typescript sent to *Nuova antologia*, April 21, 1937. Quotations on p. 5.
140. ACS, ARG, 11/14/10, correspondence.
141. Balbo, “Litoranea,” *Nuova antologia*, 11.
142. Balbo, “Litoranea,” ACVIII, 1205.
143. *La strada litoranea*, 140–141.
144. ACS, MCP, B.105/622/4, “Viaggio del Duce in Libia per l'inaugurazione della Litoranea: Programma sommario,” February 18, 1937.
145. Mabel Berezin, “The Festival State: Celebration and Commemoration in Fascist Italy,” *JMEH* 4, no. 1 (2006): 60; Falasca-Zamponi, *Fascist Spectacle*, 146.
146. John L. Wright, “Mussolini, Libya, and the Sword of Islam,” in *Italian Colonialism*, ed. Ruth Ben-Ghiat and Mia Fuller (New York: Palgrave Macmillan, 2005), 121–122.
147. LUCE, D032101, *Il Duce in Libia*, March 1937.
148. On similar dynamics in Nazi propaganda: Andrew Denning, “‘Life Is Movement, Movement Is Life!’: Mobility Politics and the Circulatory State in Nazi Germany,” *AHR* 123, no. 5 (2018): 1490.
149. On the arch: Jobst Welge, “Fascism *Triumphans*: On the Architectural Translation of Rome,” in Lazzaro and Crum, *Donatello among the Blackshirts*, 83–94.
150. On the implantation of settlers in Libya as legitimating claim: Roberta Pergher, *Mussolini’s Nation-Empire: Sovereignty and Settlement in Italy’s Borderlands, 1922–1943* (Cambridge: Cambridge University Press, 2018).
151. Massimo Zaccaria, “Italian Colonialism in Africa as a Connected System: Institutions, Men and Colonial Troops,” *JICH* 47, no. 4 (2019): 718–741.
152. Rochat, *Colonialismo*, 104.
153. ASD, MAECI, MAI V, MRN 8, E. Cozzani, “L’epopea della Balbia,” undated typescript, 2.
154. Segrè, *Fourth Shore*, 131.
155. ACS, MAI, B.125/1, “Copia delle Riserve agli Stati d’avanzamento per la costruzione del 15° Tronco della Litoranea Libica, avanzata dall’Impresa S.A.I.D.A.,” 3–4.

156. ACS, MAI, B.125/1, Memorandum of Consiglio Superiore dei LL.PP, August 28, 1939; ACS, MAI, B.119, folder “Lavori di sistemazione e manutenzione delle strade della Tripolitania,” Director General of Civil Affairs del Giudice to Undersecretary of State, January 7, 1938; ACS, MAI, B.126, Report of Head Engineer N. Troilo re. Contratto N. 1893 with Impresa Pietro Cidonio, VII Tronco, November 1, 1937.

157. ACS, MAI, B.94/1, folder “Manutenzione strade di grande comunicazione della Libia (1938–39),” Giuseppe Piergianni to Director General MAI, October 18, 1938.

8. ACCELERATION AND CRASH IN ITALIAN EAST AFRICA

1. Gian Luca Podestà, *Il mito dell'impero: Economia, politica e lavoro nelle colonie italiane dell'Africa orientale, 1898–1941* (Turin: G. Giappichelli Editore, 2004), 170.

2. Nicola Labanca, *Oltremare: Storia dell'espansione coloniale italiana* (Bologna: Il Mulino, 2002), 195; Victoria de Grazia, *The Perfect Fascist: A Story of Love, Power, and Morality in Mussolini's Italy* (Cambridge, MA: Belknap Press of Harvard University Press, 2020), 301; Alessio Gagliardi, “La mancata ‘valorizzazione’ dell'impero. Le colonie italiane in Africa orientale e l'economia dell'Italia fascista,” *Storicamente* 12, no. 3 (2016): 17–18.

3. Matteo Dominioni, *Lo sfascio dell'impero: Gli italiani in Etiopia 1936–1941* (Rome: Laterza, 2008), 11.

4. Nicola Labanca, *La guerra d'Etiopia 1935–1941* (Bologna: Il Mulino, 2015), 14–17.

5. Indeed, Gian Luca Podestà divides an Italian “colonial” era (1885–1935) from a distinct “imperial” era (1935–1941). Podestà, “Building the Empire. Public Works in Italian East Africa (1936–1941),” *Entreprises et Histoire* 70 (April 2013): 39. On *impero straccione*: Angelo Del Boca, *Gli italiani in Africa Orientale* (Bari: Laterza, 1976), 3–4; Claudio Segrè, “Beggars’ Empire: Ideology and the Colonialist Movement in Liberal Italy,” *Proceedings of the Meeting of the French Colonial Historical Society* 4 (1979): 174–183; Labanca, *Oltremare*, 12.

6. ASD, MAECI, MAI III, B.56, Fasc. O.O.P.P. in Generale—Relazioni—Eritrea, Governor of Eritrea to Ministry of Colonies, June 18, 1936.

7. ASD, MAECI, MAI III, B.73/1, “Riassunto Generale delle Spese per Opere Pubbliche o di Pubblica Utilità nelle Colonie: Sub-Allegato IV: Eritrea, Esercizi dal 1913–14 al 1936–37.”

8. Alberto Sbacchi, *Ethiopia under Mussolini: Fascism and the Colonial Experience* (London: Zed Books, 1985), 72–75.

9. ASD, MAECI, MAI III, B.73/1, “Riassunto Generale . . . Sub-Allegato VI: Africa Orientale Italiana, Esercizi dal 1937–38 al 1940–41.” Budget projection from Podestà, *Mito*, 246.

10. Haile Larebo, “Empire Building and Its Limitations: Ethiopia (1935–1941),” in *Italian Colonialism*, ed. Ruth Ben-Ghiat and Mia Fuller (New York: Palgrave Macmillan, 2005), 85. Compare de Grazia, *Perfect Fascist*, 308.

11. Giuseppe Cobolli Gigli, *Strade imperiali* (Milan: Mondadori, 1938), 74.

12. TNA, FO 371/22030/4677, Katherine Fannin, “Report on Italian East Africa,” attachment to a letter from W. Cavendish-Bentinck to L. B. Freeston, December 28, 1938, 21.

13. For an overview of roads in AOI see Caitlin Collis, “Paving the Way to Empire: Roads in Ethiopia from Menelik to Mussolini” (PhD diss., University of Pennsylvania, 2022); Stefano Cecini, “La realizzazione della rete stradale in Africa orientale italiana (1936–41)” (thesis, Università di Roma La Sapienza, 2007).

14. Labor/capital distinction: Myron Echenberg and Jean Filipovich, “African Military Labour and the Building of the Office du Niger Installations, 1925–1950,” *JAH* 27, no. 3 (1986): 536. For an overview of Italian colonial economics: Mattia C. Bertazzini, “Towards an Economic History of Italian Colonialism,” *Rivista di storia economica* 36, no. 3 (2020): 299–343.

15. Ian L. Campbell, "Italian Atrocities in Ethiopia: An Enquiry into the Violence of Fascism's First Military Invasion and Occupation," *Journal of Genocide Research* 24, no. 1 (2022): 119–133. See also Ian Campbell, *The Addis Ababa Massacre: Italy's National Shame* (New York: Oxford University Press, 2017).

16. Harold G. Marcus, *A History of Ethiopia*, updated ed. (Berkeley: University of California Press, 2002), 148–152.

17. ASD, MAECI, MAI, GAS, B.276/473, MAI, Commissione Suprema di Difesa, XV Sessione—Febbraio 1938—XVI, Argomento XIV, "Organizzazione delle terre italiane d'oltremare," 20.

18. ASD, MAECI, MAI V, MRN 8/90, Angelo Piccioli, "Un miracolo di energia: La grande strada attraverso il deserto Dancalo," 1.

19. Giuseppe Pini, "Le strade fondamentali," in *L'industria in A.O.I.*, ed. Confederazione Fascista degli Industriali (Rome: U.S.I.L.A.—Società Anonima Editrice de "L'Organizzazione Industriale" e delle Altre Pubblicazioni Confederali, 1939), 53.

20. Gigli, *Strade*, 71.

21. ASD, MAECI, MAI V, MRN 11/131, "Principi della politica coloniale italiana," 3–4.

22. Attilio Arcangeli, *La camionale Mar Rosso–Altipiano Eritreo (Massaua–Nefasit–Decameré)* (Rome: Istituto Grafico Tiberino, 1936), 123.

23. ASD, MAECI, MAI V, MRN 18/244, "Le industrie e il commercio," typescript for inclusion in *La costruzione dell'impero*, 5. NB: although finding aids indicate that this file should be housed in MRN 18, I discovered it in MRN 19.

24. ASD, MAECI, MAI III, B.58/110, "L'arteria Gondar–Addis Abeba . . ." *L'azione coloniale*, July 7, 1938; ASD, MAECI, MAI III, B.63, introduction by Luigi Lojacono to Italo Papini, *La produzione dell'Etiopia* (Rome: L'Economia Italiana, 1938), n.p.

25. ASD, MAECI, MAI III, B.63, Ing. Cecchini, "Le opere stradali," in "Le opere pubbliche in OO.PP. in A.O.I.," 3.

26. Pini, "Le strade fondamentali," 51.

27. ASD, MAECI, MAI III, B.63, Cecchini, "Opere stradali," 8. The Archivio Centrale dello Stato in Rome possesses forty-two linear meters of material related to the activities of the AASS in the colonies. As of this writing, the inventory of those materials is not yet complete, and they remain unavailable for consultation.

28. Richard Pankhurst, "Road-Building during the Italian Fascist Occupation of Ethiopia (1936–1941)," *Africa Quarterly* 15, no. 3 (1975): 35.

29. Ruth Ben-Ghiat and Mia Fuller, introduction to *Italian Colonialism*, 12.

30. Paolo d'Agostino Orsini, "Das Verkehrsproblem in Italienisch-Ostafrika," *Afrika-Nachrichten* 18, no. 7 (1937): 169–170.

31. ASD, MAECI, MAI III, B.58/110, "L'arteria." Addis Ababa and Eritrea were meant to be colonial industrial zones, with the remainder of Ethiopia dedicated to agriculture. Gian Luca Podestà, "Eurafrica. Vital Space, Demographic Planning, and the Division of Labour in the Italian Empire: The Legacy of Fascist Autarky," *Journal of European Economic History* 50, no. 1 (2021): 20.

32. Haile Larebo, *The Building of an Empire: Italian Land Policy and Practice in Ethiopia 1935–1941* (Oxford: Clarendon, 1994), 186.

33. BL, IOR/R/20/C/59, File 57/38, Noel Charles to Secretary of State of Foreign Affairs, February 25, 1938.

34. ASD, MAECI, MAI III, B.63, Cecchini, "Opere stradali," 15.

35. BL, IOR/R/20/C/59, File 57/38, F. H. W. Stonehewer-Bird to Secretary of State of Foreign Affairs, March 9, 1939.

36. TNA, FO 371/22030/4677, Fannin, "Report," 20. On Fannin's report: Judith Aldrick, "An Ethiopian Escapade," *Africa: Rivista trimestrale di studi e documentazione dell'Istituto Italiano per l'Africa e l'Oriente* 50, no. 3 (1995): 387–398.

37. ASD, MAECI, MAI II, 181/58/281, Graziani to Cabinet of the Minister of Colonies, July 8, 1936, 1, 4; Graziani to Cabinet of the Minister of Colonies, August 22, 1936, 2.
38. E. W. Polson Newman, *The New Abyssinia* (London: Rich & Cowan, 1938), 101.
39. ASD, MAECI, MAI III, B.58/92, Giuliano Ongaro, “Tremiladuecentottantaquattro chilometri di strade,” *L’azione coloniale*, May 9, 1938.
40. ASD, MAECI, MAI III, B.58/110, “L’arteria.”
41. Larebo, *Building*, vii.
42. Gigli, *Strade*, 100; Pini, “Strade fondamentali,” 70–71.
43. ASD, MAECI, MAI II, 181/58/290/150, foglio 4508 from Governor Geloso to Ministry of Colonies, 1, 3.
44. Gigli, *Strade*, 95; Emanuele Ertola, “‘White Slaves’: Labor, Whiteness, and Settler Colonialism in Italian East Africa (1935–1941),” *Labor History* 61, no. 5–6 (2020): 552–553.
45. Irma Taddia, *La memoria dell’impero: Autobiografie d’Africa Orientale* (Manduria: Piero Lacaita Editore, 1988), 94.
46. ASF, FTF, album 82, 21 verso; LUCE, D048804, *Strade romane*; D037101, *Il cammino degli eroi*.
47. Larebo, *Building*, 156–157; Labanca, *Oltremare*, 309.
48. Emanuele Ertola, *In terra d’Africa: Gli italiani che colonizzarono l’impero* (Bari: Laterza, 2017), 102–115; Photos in ASF, FTF, album 82, 30 verso.
49. ASD, MAECI, MAI V, MRN 12/159, “L’Etiopia sotto il dominio italiano nella significativa testimonianza di una viaggiatrice inglese,” 1.
50. ASD, MAECI, MAI V, MRN 12/159, “L’Etiopia,” 2. My translation from Italian officials’ translation of original English.
51. ASD, MAECI, MAI II, 181/58/290/150, foglio 4508, 1.
52. Gigli, *Strade*, 90–91, 94, 99.
53. LUCE, D008504, *La strada Dancala*.
54. ASD, MAECI, MAI II, 181/58/283, Graziani to Governo Generale AOI, September 25, 1937, 1.
55. Ertola, “‘White Slaves,’” 553, 557.
56. ASD, MAECI, MAI II, 181/20/96, Minuta n°725 from Cesare Renzi to Stato Maggiore, Sede di Intendenza A.O., March 13, 1936.
57. ASD, MAECI, MAI II, 181/58/283, Memorandum N° 96/17 from Tommaso Fisco to Commissario Regionale di Assab, April 28, 1937.
58. ASD, MAECI, MAI II, 181/58/283, Graziani to Governor of Eritrea, June 28, 1937.
59. Ertola, “‘White Slaves,’” 553; Collis, “Paving,” 125; Giulia Barrera, “Mussolini’s Colonial Race Laws and State-Settler Relations in Africa Orientale Italiana (1935–41),” *Journal of Modern Italian Studies* 8, no. 3 (2003): 427–431.
60. ASD, MAECI, MAI II, 181/58/283, L. Petrucci to Ministry of Foreign Affairs, June 28, 1937, 1, 4.
61. ASD, MAECI, MAI II, 181/58/283, Graziani to Governo Generale, 1–2.
62. Gigli, *Strade*, 107.
63. ASD, MAECI, MAI III, B.63, Cecchini, “Opere stradali,” 9.
64. Gigli, *Strade*, 79–81.
65. Ernst Wiese, “Ethiopia Now,” *Harper’s Magazine*, March 1938, 411–412.
66. TNA, FO 371/22030/4677, Fannin, “Report,” 17.
67. Pini, “Strade fondamentali,” 75.
68. ASD, MAECI, MAI III, B.62/1, “Relazione illustrativa dell’elenco delle OO.PP. eseguite in Etiopia,” memorandum to Cerulli, May 19, 1945, 1°–3°.
69. Sbacchi, *Ethiopia*, 43.
70. ASD, MAECI, MAI III, B.73/1, “E. Spese del Governo Italiano per la valorizzazione dell’Etiopia,” 1; ASD, MAECI, MAI III, B.62/1, “Relazione illustrativa,” 1°–3°.

71. ASD, MAECI, MAI II, 181/36, Fasc. A.O.I.—Campagna—Organizzazione Automezzi—Milizia delle strade, Letter n°2362 from Vice Governatore AOI, May 8, 1936.
72. Ertola, *Terra*, 49.
73. ASD, MAECI, MAI II, 181/36, Fasc. A.O.I.—Campagna—Organizzazione Automezzi—Milizia delle strade, Captain Giuseppe Angelotti (ed.), “Relazione sulla industria e sulla organizzazione degli autotrasporti,” February 9, 1937, 1–3.
74. ASD, MAECI, MAI II, 181/36, Angelotti, “Relazione,” 4.
75. ASD, MAECI, MAI, GAS, B.276/473, “Organizzazione,” 68.
76. ASD, MAECI, MAI II, 181/36, Angelotti, “Relazione,” 17–18.
77. ASD, MAECI, MAI II, 181/36, Angelotti, “Relazione,” 5.
78. ASD, MAECI, MAI V, MRN, 18/244, “Industrie,” 7. Across AOI as a whole, motor transport comprised 31.5 percent of private businesses and absorbed 62.2 percent of invested capital. Podestà, “Eurafrica,” 29.
79. ASD, MAECI, MAI V, MRN, 18/244, “Industrie,” 12.
80. ASD, MAECI, MAI III, B.63, “L’industria automobilistica e l’organizzazione dell’A.O.I.,” *L’organizzazione industriale*, January 13, 1939.
81. ASD, MAECI, MAI V, MRN, 18/244, “Industrie,” 5.
82. Matteo Pasetti, “Un ‘colonialismo corporativo’? L’imperialismo fascista tra progetti e realtà,” *Storicamente* 12, no. 3 (2016): 50–51; Gian Luca Podestà, “Building,” 42.
83. Polson Newman, *New Abyssinia*, 70.
84. Karl Remy, “Neuzeitliche koloniale Verkehrspolitik in Afrika,” in *Kolonien: Ein Kraftfeld Großdeutschlands. Das Deutsche koloniale Jahrbuch 1941* (Berlin: Wilhelm Süßerot Verlag, n.d.), 102–103.
85. ASD, MAECI, MAI II, 181/58/290/26, “Relazione sui lavori in corso affidati all’ufficio, mese di maggio 1936.”
86. Taddia, *Memoria*, 96, 100, 112.
87. ASF, FTF, album 82, 23 recto.
88. ASD, MAECI, MAI V, MRN, 18/244, “Industrie,” 24–26.
89. Pini, “Strade fondamentali,” 63.
90. Wiese, “Ethiopia,” 412.
91. ASD, MAECI, MAI III, B.58/1/29, A. V. Pellegrineschi, “I materiali per le costruzioni,” *L’azione coloniale*, May 9, 1938.
92. Wiese, “Ethiopia,” 412. On food imports and autarky: Michele Sollai, “How to Feed an Empire? Agrarian Science, Indigenous Farming, and Wheat Autarky in Italian-Occupied Ethiopia, 1937–1941,” *Agricultural History* 96, no. 3 (2022): 379–416.
93. ASD, MAECI, MAI II, 181/36, Angelotti, “Relazione,” 6–7, 11.
94. Podestà, *Mito*, 198; Giorgio Rochat, *Il colonialismo italiano* (Turin: Loescher, 1973), 147.
95. Valerio Castronovo, *Fiat 1899–1999: Un secolo di storia italiana* (Milan: Rizzoli, 1999), 497–498.
96. Podestà, *Mito*, 249.
97. ASD, MAECI, MAI IV, Pacco 54, Fondo Statistica 3, folder: Rete Stradale, Ministero dell’Industria e del Commercio, “Notizie economiche sulle colonie italiane Libia—Eritrea—Somalia,” September 1945, 32.
98. ASD, MAECI, MAI V, MRN, 18/244, “Industrie,” 12.
99. Podestà, *Mito*, 249, 255, 259–260; Castronovo, *Fiat*, 496.
100. Pankhurst, “Road-Building,” 42; Mia Fuller, *Moderns Abroad: Architecture, Cities and Italian Imperialism* (London: Routledge, 2007), 38.
101. Larebo, “Empire Building,” 85–86. Compare Rochat, *Colonialismo*, 219.
102. ASD, MAECI, MAI III, B.63, Cecchini, “Opere stradali,” 16.
103. BL, IOR/R/20/C/59, file 57/38, Noel Charles to Secretary of State for Foreign Affairs, February 25, 1938.

104. Gigli, *Strade*, 26, 191.
105. In 1939, Asmara housed fifty-three thousand Italians and forty-five thousand Eritreans. Tekeste Negash, *Italian Colonialism in Eritrea, 1882–1941: Policies, Praxis and Impact* (Uppsala: Acta Universitatis Upsaliensis, 1987), 53.
106. Polson Newman, *New Abyssinia*, 21.
107. TNA, CO 535/121/4/38, Helm to Eden, October 25, 1937, 1.
108. Ertola, *Terra*, 32–35.
109. Wiese, “Ethiopia,” 412.
110. Polson Newman, *New Abyssinia*, 26, 74, 86, 218–219, 274, 281.
111. Wiese, “Ethiopia,” 410.
112. Charles S. Maier, *Once within Borders: Territories of Power, Wealth, and Belonging since 1500* (Cambridge, MA: Belknap Press of Harvard University Press, 2016), 11.
113. Wiese, “Ethiopia,” 410.
114. Polson Newman, *New Abyssinia*, 33, 94.
115. Rochat, *Colonialismo*, 185.
116. Larebo, “Empire Building,” 85.
117. Polson Newman, *New Abyssinia*, 57–58, 61.
118. TNA, FO 371/22030/4677, Fannin, “Report,” 21.
119. TNA, FO 371/22030/4677, Fannin, “Report,” 15.
120. R. J. B. Bosworth, *Italy and the Wider World, 1860–1960* (London: Routledge, 1996), 49. On Italian Eurafrica: Podestà, “Eurafrica.”
121. TNA, CO 535/121/4/39, Memorandum of November 19, 1937.
122. Wiese, “Ethiopia,” 409.
123. Larebo, *Building*, 287; Sbacchi, *Ethiopia*, 99.
124. Yemane Mesghenna, “The Impact of the 1935–1941 Economic Boom on the Eritrean Labor Market,” *Africa: Rivista trimestrale di studi e documentazione dell’Istituto Italiano per l’Africa e l’Oriente* 58, no. 1 (2003): 96–98; Gagliardi, “Mancata ‘valorizzazione,’” 38.
125. Wiese, “Ethiopia,” 416.
126. TNA, FO 371/22030/4677, Fannin, “Report,” 40.
127. Polson Newman, *New Abyssinia*, 279.
128. TNA, FO 371/23377/1461, “Impressions of Three Weeks in Abyssinia,” notes of Evelyn Emmett, April 6, 1939, 3.
129. ACS, MAI, B.89, Pro-memoria of President of INCIS to Minister of Italian Africa, December 23, 1937; Ertola, *Terra*, 64.
130. Wiese, “Ethiopia,” 412.
131. Polson Newman, *New Abyssinia*, 86.
132. ASD, MAECI, MAI II, 181/58/290/3, “Lavori stradali,” memorandum of September 29, 1936, 1.
133. TNA, CO 535/121/3/82, Memorandum from Consul R. Eldon Ellison, November 2, 1937, 1–3.
134. TNA, CO 535/121/4/38, Helm to Eden, 3–4.
135. TNA, CO 535/121/4/38, Helm to Eden, 4. Graziani translation into English by Helm.
136. ACS, ARG, 44/36/1, Folio: Autonomia dalla Madre Patria—Combustibili, Carburanti, Lubrificanti, Letter n. 534 from Governor of Galla e Sidamo to Graziani, May 6, 1937.
137. TNA, CO 535/121/4/38, Helm to Eden, 1.
138. ASD, MAECI, MAI II, 181/58/281, sub-folder Ferrovie—Gibuti-Addis Abeba, “Technico della ferrovia per A.A.,” 1.
139. TNA, CO 535/121/4/38, Helm to Eden, 1.

140. TNA, FO 371/22030/4677, R. J. W. Hooper, Minute of December 21, 1938.
141. ASD, MAECI, MAI II, 181/58/281, sub-folder Ferrovie—Gibuti-Addis Abeba, “Allegato 2: Assemblée Générale Ordinaire du 9 Juin 1938, Rapport du Conseil d’administration, Compagnie du Chemin de Fer Franco-Ethiopien de Djibouti à Addis-Abeba,” 2.
142. Polson Newman, *New Abyssinia*, 266–268; ASD, MAECI, MAI II, 181/58/281, sub-folder Legione Milizia Ferroviaria in A.O.I., Graziani to Minister of Colonies, July 28, 1936.
143. TNA, CO 535/121/4/38, Helm to Eden, 4–5.
144. ASF, Lancia Archive, B.77, Memorandum of Felice Visetti, September 8, 1938.
145. ASD, MAECI, MAI III, B.56, folder: Le opere ed i servizi civili: a) Le opere pubbliche, “Promemoria riservato per la Direzione Generale Affari Civili,” July 1, 1938; Podestà, “Building,” 44n16.
146. ASF, FTF, album 150, 58 recto.
147. Famously, see Aimé Césaire, *Discours sur le colonialisme* (Paris: Éditions Réclame, 1950); Hannah Arendt, *The Origins of Totalitarianism* (New York: Schocken, 1951); Frantz Fanon, *Le Damnés de la terre* (Paris: F. Maspero, 1961). More recently, see Mark Mazower, *Hitler’s Empire: How the Nazis Ruled Europe* (New York: Penguin, 2008); Robert Gerwarth and Stephan Malinowski, “Hannah Arendt’s Ghosts: Reflections on the Disputable Path from Windhoek to Auschwitz,” *Central European History* 42, no. 2 (2009): 279–300.
148. On fascism’s “alternative modernity,” rebirth through the state, and project of reclamation: Roger Griffin, *Modernism and Fascism: The Sense of a Beginning under Mussolini and Hitler* (New York: Palgrave Macmillan, 2007), esp. introduction and chap. 8.
149. On the intersections of speed culture and imperialism: Enda Duffy, *The Speed Handbook: Velocity, Pleasure, Modernism* (Durham, NC: Duke University Press, 2009), 1–58.
150. ASD, MAECI, MAI III, B.45, Landa Vigo [pseudonym], “Strade fiorite e filo spinato,” unpaginated typescript.
151. ASD, MAECI, MAI III, B.45, Vigo, “Strade.” In September 1940, AOI nationalized and militarized all the parastatal organizations in the transport sector, including AGIP, CITAO, Fiat, Alfa Romeo, and Pirelli. ASF, Lancia Archive, B.78, Decree n°1380, September 24, 1940.
152. ASD, MAECI, MAI III, B.45, Vigo, “Strade.”

CONCLUSION

1. On Nazi debates over and designs for Africa: Klaus Hildebrand, *Vom Reich zum Weltreich: Hitler, NSDAP und koloniale Frage 1919–1945* (Munich: Wilhelm Fink Verlag, 1969); Karsten Linne, *Deutschland jenseits des Äquators? Die NS-Kolonialplanungen für Afrika* (Berlin: Ch. Links Verlag, 2008); Chantal Metzger, *L’Empire colonial français dans la stratégie du Troisième Reich (1936–1945)*, 2 vols. (Brussels: Peter Lang, 2002); Alexandre Kum’a N’Dumbe III, *Hitler voulait l’Afrique: Les plans secrets pour une Afrique fasciste* (Paris: Harmattan, 1980); Willeke Sandler, *Empire in the Heimat: Colonialism and Public Culture in the Third Reich* (New York: Oxford University Press, 2018); Wolfe W. Schmokel, *Dream of Empire: German Colonialism, 1919–1945* (New Haven, CT: Yale University Press, 1964); Andrew Denning, “Unscrambling Africa: From Eurafican Technopolitics to the Fascist New Order,” *JMH* 95, no. 3 (2023): 627–667.
2. BAB, NS 52/101, “Zusammenfassung der wichtigsten Erkenntnisse der Abteilung IV ‘Verkehr und Technik’ vom Beginn ihrer Tätigkeit bis zur Stilllegung im Februar 1943,” *March* 1943, 1, 21, 64.
3. BAB, NS 52/99, “Grundzüge der kolonialwirtschaftlichen Verkehrsarbeit,” Blatt 10.
4. BAB, NS 52/101, “Zusammenfassung,” 16

5. BAB, NS 52/99, “Grundzüge,” Blatt 10.
6. BAB, NS 52/101, “Zusammenfassung,” 11.
7. R. H. Kakembo, *An African Soldier Speaks* (London: Edinburgh House, 1946), 8.
8. Ken Gwilliam, Vivien Foster, et al., “The Burden of Maintenance: Roads in Sub-Saharan Africa,” *Africa Infrastructure Country Diagnostic*, Background Paper 14 (Phase 1) (Washington, DC: World Bank, 2009), iv.
9. BAB, NS 52/101, “Zusammenfassung,” 3, 7, 21, 68.
10. TNA, FCO 141/5516, Memorandum TPB/37/4: “Memorandum by the General Manager, Tanganyika Railways,” January 8, 1937, 2.
11. Frederick Cooper, *Colonialism in Question: Theory, Knowledge, History* (Berkeley: University of California Press, 2005), 91–92.
12. Karl Krüger, *Die Straßen der Welt: Eine Straßengeographie* (Berlin: Volk und Reich Verlag, 1937), 118; BAB, NS 52/101, “Zusammenfassung,” 1. On internationalism and empire: Susan Pedersen, *The Guardians: The League of Nations and the Crisis of Empire* (New York: Oxford University Press, 2015).
13. Megan Hutching, ed., with Ian McGibbon, *The Desert Road: New Zealanders Remember the North African Campaign* (Auckland: Harper Collins, 2005), 29.
14. Miguel Bandeira Jerónimo, “Repressive Developmentalism: Idioms, Repertoires, and Trajectories in Late Colonialism,” in *The Oxford Handbook of the Ends of Empire*, ed. Martin Thomas and Andrew S. Thompson (Oxford: Oxford University Press, 2018), 537–554. On development as postwar legitimization of empire: Frederick Cooper, *Africa in the World: Capitalism, Empire, Nation-State* (Cambridge, MA: Harvard University Press, 2014), 26. On African development in particular: Corrie Decker and Elisabeth McMahon, *The Idea of Development in Africa: A History* (New York: Cambridge University Press, 2020). On “development” as a particularity of the Cold War world: Sara Lorenzini, *Global Development: A Cold War History* (Princeton, NJ: Princeton University Press, 2019).
15. Heather J. Sharkey, “African Colonial States,” in *OHMAH*, 165. For definitions of the “late colonial” state: John Darwin, “What Was the Late Colonial State?” *Itinerario* 23, no. 3/4 (1999): 73–82.
16. The late 1930s saw these challenges arise, and they accelerated after World War II. Cooper, *Africa in the World*, 1, 4.
17. Kakembo, *African Soldier*, 19.
18. Charles S. Maier, *Once within Borders: Territories of Power, Wealth, and Belonging since 1500* (Cambridge, MA: Belknap Press of Harvard University Press, 2016), 190. In his famous theorization of nationalism as the creation of “imagined communities,” Benedict Anderson remarks on the importance of physical mobility and multiplying personal contacts to imagining the nation. Anderson, *Imagined Communities: Reflections on the Origin and Spread of Nationalism*, rev. ed. (London: Verso, 1991), chap. 4.
19. Marcus Filippello, *The Nature of the Path: Reading a West African Road* (Minneapolis: University of Minnesota Press, 2017); Joshua Grace, *African Motors: Technology, Gender, and the History of Development* (Durham, NC: Duke University Press, 2021); Lindsey B. Green-Simms, *Postcolonial Automobility: Car Culture in West Africa* (Minneapolis: University of Minnesota Press, 2017); Jennifer Hart, *Ghana on the Go: African Mobility in the Age of Motor Transportation* (Bloomington: Indiana University Press, 2016); Kenda Mutongi, *Matatu: A History of Popular Transport in Nairobi* (Chicago: University of Chicago Press, 2017).
20. On avoiding the teleology of nationalism and recapturing the “multiple possibilities” of the post-1945 era: Cooper, *Africa in the World*, 68. The role of roads and automobiles in nationalist and anticolonial political campaigns, labor organizing, and other political and social projects in the late-colonial era warrants further study to examine how African actors used colonial technology and infrastructure, noted for their “uncontrolled individuality,” to pursue their own ends.

21. Daniel Immerwahr, *How to Hide an Empire: A History of the Greater United States* (New York: Picador, 2019), 17–18, 295.

22. Adeline Masquelier, “Road Mythographies: Space, Mobility, and the Historical Imagination in Postcolonial Niger,” *American Ethnologist* 29, no. 4 (2002): 829.

23. Kurt Beck, Gabriel Klaeger, and Michael Stasik, “An Introduction to the African Road,” in *The Making of the African Road*, ed. Beck, Klaeger, and Stasik (Leiden: Brill, 2017), 4–5, 9–10, 12.

24. On the historical and social dynamics of unfinished infrastructures see Ashley Carse and David Kneas, “Unbuilt and Unfinished: The Temporalities of Infrastructure,” *Environment and Society: Advances in Research* 10 (2019): 9–28.

25. Priya Satia, *Time’s Monster: How History Makes History* (Cambridge, MA: Belknap Press of Harvard University Press, 2020), 264.

26. Decker and McMahon, *Development*, 143–144; Aïssatou Mbodj-Pouye, “Radio and the Road: Infrastructure, Mobility, and Political Change in the Beginnings of Radio Rurale de Kayes (1980–early 2000s),” *JAH* 62, no. 1 (2021): 125–149.

27. Kenny Cupers and Prita Meier, “Infrastructure between Statehood and Selfhood: The Trans-African Highway,” *Journal of the Society of Architectural Historians* 79, no. 1 (2020): 63–64.

28. Maier, *Borders*, 3.

29. Cupers and Meier, “Infrastructure,” 63, 67, 77.

30. Frederick Cooper, “Writing the History of Development,” *JMEH* 8, no. 1 (2010): 11.

31. Peo Hansen and Stefan Jonsson, “Eurafrika Incognita: The Colonial Origins of the European Union,” *History of the Present: A Journal of Critical History* 7, no. 1 (2017): 27. The urtext on this topic is Walter Rodney, *How Europe Underdeveloped Africa* (London: Bogle L’Ouverture, 1972).

32. Kenneth Gwilliam with Heinrich Bofinger et al., *Africa’s Transport Infrastructure: Mainstreaming Maintenance and Management* (Washington, DC: World Bank, 2011), chap. 1.

33. Vivien Foster and Cecilia M. Briceño-Garmendia, eds., *Africa’s Infrastructure: A Time for Transformation* (Washington, DC: World Bank, 2009), Overview, Finding 3.

34. John Iliffe, *Africans: The History of a Continent*, 3rd ed. (New York: Cambridge University Press, 2017); Jeffrey Herbst, *States and Power in Africa: Comparative Lessons in Authority and Control* (Princeton, NJ: Princeton University Press, 2014).

35. Foster and Briceño-Garmendia, *Africa’s Infrastructure*, Recommendation 6.

36. Gwilliam et al., “Burden,” vii–ix.

37. Beck, Klaeger, and Stasik, “Introduction,” 6–7; Gwilliam et al., “Burden,” iv, vii.

38. Reid Standish, “Global Gateway: Can the EU’s Giant Infrastructure Plan Rival China’s Belt and Road?,” *Radio Free Europe/Radio Liberty*, November 30, 2021, <https://www.rferl.org/a/eu-infrastructure-rival-china/31587365.html>; Daniel F. Runde, Conor M. Savoy, and Janina Staguhn, “China and SMEs in Sub-Saharan Africa: A Window of Opportunity for the United States,” *CSIS Briefs*, Center for Strategic & International Studies, October 15, 2021, <https://www.csis.org/analysis/china-and-smes-sub-saharan-africa-window-opportunity-united-states>; Andrew Chatzky and James McBride, “China’s Massive Belt and Road Initiative,” *Council on Foreign Relations*, January 28, 2020, <https://www.cfr.org/background/chinas-massive-belt-and-road-initiative>; Andreas Eckert, “Mit Mao nach Daressalam,” *Die Zeit*, March 29, 2019.

39. Adelaja Odutola Odukoya, “Settler and Non-settler Colonialism in Africa,” in *The Palgrave Handbook of African Politics, Governance and Development*, ed. Samuel Ojo Olorunmba and Toyin Falola (New York: Palgrave Macmillan, 2018), 186.

40. Ewout Frankema and Marlous van Waijenburg, “Metropolitan Blueprints of Colonial Taxation? Lessons from Fiscal Capacity Building in British and French Africa, c.

1880–1940,” *JAH* 55 (2014): 372; Leigh Gardner, *Taxing Colonial Africa: The Political Economy of British Imperialism* (Oxford: Oxford University Press, 2012), 9; Ewout Frankema, “Colonial Taxation and Government Spending in British Africa, 1880–1940: Maximizing Revenue or Minimizing Effort?,” *Explorations in Economic History* 48 (2011): 143. Compare Thandika Mkandawire, “On Tax Efforts and Colonial Heritage in Africa,” *Journal of Development Studies* 46, no. 10 (2010): 1647–1669.

41. Elise Huillery, “The Black Man’s Burden: The Cost of Colonization of French West Africa,” *JEH* 74, no. 1 (2014): 4, 6, 23, 28, 34.

42. Ian L. Campbell, “Italian Atrocities in Ethiopia: An Enquiry into the Violence of Fascism’s First Military Invasion and Occupation,” *Journal of Genocide Research* 24, no. 1 (2022): 119–133.

43. Istituto Agricolo Coloniale, *Some Data on Italian Activity in the Colonies* (Florence: Istituto Agricolo Coloniale, 1945), n.p. Compare Società Geografica Italiana, *L’Italia in Africa: Incivillimento e sviluppo dell’Eritrea, della Somalia e della Libia* (Rome: Editrice Italiana Arti Grafiche, 1948).

44. Istituto Agricolo Coloniale, *Main Features of Italy’s Action in Ethiopia, 1936–1941* (Florence: Istituto Agricolo Coloniale, 1946), plates 1, 2, 95.

45. Patrick Joyce and Tony Bennett, “Material Powers: Introduction,” in *Material Powers: Cultural Studies, History and the Material Turn*, ed. Bennett and Joyce (London: Routledge, 2010), 10.

46. ASD, MAECI, MAI IV, FUSM, Pacco 24: Fotografie Lavoro Italiano in Africa, Fasc. 6: Strade, ponti, ferrovie. Another post-1941 celebration of the Italian road worker: ASD, MAECI, MAI V, MRN, 19/253, Valerio Taramelli, “Il lavoro italiano nelle costruzioni ferroviarie e stradali dell’Oriente e dell’Occidente Africano,” 3.

47. Ruth Ben-Ghiat, *Strongmen: Mussolini to the Present* (New York: W. W. Norton, 2020), 248.

48. ASD, MAECI, MAI V, MRN, 8/89, E. Cozzani, “L’epopea della Balbia,” 1–2, 4.

49. TNA, FO 371/31604, J 4280/1686/1, Baillie-Scott, “Ethiopian Trunk Road System: Factors Governing the Scale of Road Maintenance and Reconstruction Work,” October 1942.

50. The Italians claimed that only three stone bridges existed before Italian rule, and that those had been built by Portuguese Jesuits in the seventeenth century. ASD, MAECI, MAI V, MRN 12/169, “Risposta a Mr. Eden,” 1–4.

51. Haile Larebo, *The Building of an Empire: Italian Land Policy and Practice in Ethiopia 1935–1941* (Oxford: Clarendon, 1994), 294.

52. Richard Pankhurst, “Road-Building during the Italian Fascist Occupation of Ethiopia (1936–1941),” *Africa Quarterly* 15, no. 3 (1975): 55–56.

53. Alberto Sbacchi, *Ethiopia under Mussolini: Fascism and the Colonial Experience* (London: Zed Books, 1985), 216.

54. TNA, FO 371/31604, J 4280/1686/1, Minute of October 23, 1942.

55. TNA, WO 252/572/14, “Route No. 14 Addis Ababa–Dessie,” May 1, 1945.

56. Edmond J. Keller, *Revolutionary Ethiopia: From Empire to People’s Republic* (Bloomington: Indiana University Press, 1988), 97, 99–100.

57. Megan Brown, “Le Rallye Méditerranée–Le Cap: Racing towards Eurafrica?,” *French Politics, Culture & Society* 38, no. 2 (Summer 2020): 80–104.

58. Cathal Kilcline, *Sport and Society in Global France: Nations, Migrations, Corporations* (Liverpool: Liverpool University Press, 2019), chap. 3.

59. “Bwana Tucke-Tucke,” accessed April 29, 2022, <https://www.bwana.de>.

60. “Paul Graetz Pionier-Tour 2016,” accessed April 29, 2022, <http://www.paulgraetz.de/safari>.

61. “Paul Graetz: Der deutsche Indiana Jones,” accessed April 29, 2022, <http://www.paulgraetz.de>.

62. “Die Kreuzzüge des André Citroëns / Autour du monde en Citroën,” accessed April 29, 2022, <https://www.youtube.com/watch?v=zrF6LN99PAE>.

63. “Sur la piste de la Croisière noire,” accessed April 29, 2022, <https://www.youtube.com/watch?v=kWbbBHyqPRQ>.

64. Robert Capot-Rey, *Géographie de la circulation sur les continents*, 6th ed. (Paris: Gallimard, 1946), 48.

65. Stephen Smith, “Interview: Bongo: ‘Notre argent est je ne sais où,’” *Libération*, September 18, 1996, https://www.liberation.fr/planete/1996/09/18/bongo-notre-argent-est-je-ne-sais-ou_181930/.

66. On the postcolonial African state as “gatekeeper”: Cooper, *Africa in the World*, 30.

Archives and Publications

FRANCE

- ANOM—Archives Nationales d’Outre-Mer, Aix-en-Provence
- AFFECO—Direction des Affaires Économiques
- AFFPOL—Direction des Affaires Politiques
- AGEFOM—Agence Économique de la France d’Outre-Mer
- ALG—Algérie
 - GGA—Gouverneur Générale d’Algérie
- BIB—Bibliothèque
 - AOM—Archive d’Outre-Mer
 - ECOL—L’École Coloniale
 - SOM—Section Outre-Mer
- FM MIS—Administration Centrale, Missions
- MAD—Madagascar
 - GGM—Gouverneur Générale de Madagascar
- TP—Inspection Générale des Travaux Publics
- MQB—Musée du Quai Branly—Jacques Chirac, Paris
- FGMH—Fonds Georges-Marie Haardt

GERMANY

- BAB—Bundesarchiv, Berlin-Lichterfelde

ITALY

- ACS—Archivio Centrale dello Stato, Rome
- ARG—Archivio Rodolfo Graziani
- MAI—Ministero dell’Africa Italiana
- MCP—Ministero della Cultura Popolare
- ASD—Archivio Storico Diplomatico, Rome
 - MAECI—Ministero degli Affari Esteri e della Cooperazione Internazionale
 - AE—Archivio Eritrea
 - MAI—Ministero Africa Italiana
 - AP—Affari Politici
 - GAS—Gabinetto Archivio Segreto
 - MAI I—Ministero Africa Italiana Vol. 1, 1857–1939
 - MAI II—Ministero Africa Italiana Vol. 2, 1859–1945
 - MAI III—Ministero Africa Italiana Vol. 3, 1879–1955
 - MAI IV—Ministero Africa Italiana Vol. 4, 1855–1962
 - FRSI—Fondo Repubblica Sociale Italiana
 - FS—Fondo Statistica
 - FUSM—Fondo Ufficiali Studi Ministeriale AOI
 - MAI V—Ministero Africa Italiana Vol. 5, Inventari e supplementi
 - ACSC—Archivio Consiglio Superiore Coloniale
 - ASMAI—Archivio Storico del Ministero Africa Italiana
 - MRN—Materiale recuperato al Nord

ASF—Archivio Storico Fiat, Turin
 FCS—Fondo Centrale dello Stato
 FTF—Fondo tematici—fotografico
 LUCE—Archivio Storico Istituto LUCE, Rome

UNITED KINGDOM

BL—British Library, London
 IOR—India Office Records
 LSE—London School of Economics, London
 RJC—Rees Jeffreys Collection
 IWM—Imperial War Museum, London
 TNA—The National Archives, Kew, Richmond
 ADM—Admiralty
 CAB—War Cabinet
 CO—Colonial Office
 DO—Dominions Office
 FCO—Foreign and Commonwealth Office
 FO—Foreign Office
 HO—Home Office
 WO—War Office

UNITED STATES

WOLF—Wolfsonian—Florida International University, Miami Beach

PUBLICATIONS

AC *Annales Coloniales*
 ACVIII Reale Accademia d'Italia, Fondazione Alessandro Volta, eds., *Atti di Convegni VIII: Convegno di scienze morali e storiche, 4–11 Ottobre 1938–XVI, Tema: L'Africa*, 2 vols. (Rome: Reale Accademia d'Italia, 1939)
 AEH *African Economic History*
 AHR *American Historical Review*
 CEH *Contemporary European History*
 CSSH *Comparative Studies in Society and History*
 EHR *English Historical Review*
 H&T *History and Technology*
 JAH *Journal of African History*
 JEH *Journal of Economic History*
 JGH *Journal of Global History*
 JICH *Journal of Imperial and Commonwealth History*
 JMEH *Journal of Modern European History*
 JMH *Journal of Modern History*
 JTH *Journal of Transport History*
 OHMAH John Parker and Richard Reid, eds., *The Oxford Handbook of Modern African History* (New York: Oxford University Press, 2013).
 RDM *Revue des Deux Mondes*
 T&C *Technology and Culture*
 TCS *Theory, Culture & Society*

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