

**Subterranean Histories:
Making 'Artisanal' Miners on the West African Sahel**

by

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This dissertation is dedicated to my mom, Linda Pegg d'Avignon

And it is in the memory of Djiba Diallo and Manga Kamara

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NOTE ON ORTHOGRAPHY

Any consistent approach to orthography in this dissertation proved elusive. For non-English words and phrases in French, Fulfulde, and Maninkakan (and occasionally Arabic), I rely on two systems of orthography: French and simplified phonetic. Simplified phonetic transcriptions almost always appear italicized to transcribe words from either Fulfulde or Maninkakan. To avoid confusion, I have kept the French spelling of place names, such as colonial “Soudan.” There is considerable debate over the most appropriate terminology for different ethno-linguistic groups and languages in West Africa. I use the term Mande to refer to the family of languages and culture of people who claim the Mali Empire, founded in the thirteenth century, as part of their heritage. I use the term Maninkakan (“the language of the Mande”) to refer to the Mande dialect spoken in eastern Senegal and western Mali. Speakers of this dialect in Kedougou refer to their language as Maninkolu. I use the term Maninkakan to reference a broader group of dialects referred to in the French literature as “Malinké.” Because Mande linguists have broadly rejected the term Malinké, I avoid the term unless I am directly quoting a French source. Maninkakan is a northern Mande dialect mutually intelligible with Bambara, but with key differences, including increased use of tonal syllables. I avoid the use of the term, which is now rejected by linguists of Mande, unless quoting a source. I indicate spoken plurals in Maninkakan by adding the suffix “lu” or “nu” (rather than “w”). I use the term Fulbe to refer to people who claim association with the Muslim polities of Fouta Djallon or Fouta Toro. I use the term Fulfulde (which is known regionally as Pullo Fouto) to refer to the dialect of the Fulbe language spoken in southern Senegal and northern Guinea. I retain the French spelling of the ethnic affiliation known as Diahanke and Diallonke (Jakhanke and Jallonke in English).

My use of the accented “é” in transcribing family and place names is inconsistent. I generally avoided its use unless authors or individuals employ it in writing their own names or those of their villages, such as Souaré or Kérékonko. In Senegal “Kedougou” is spelled both with or without the “é.” I chose to use Kedougou, but retained the accent in “Kédoviens,” which is the term used by self-identified members of Kedougou’s diaspora in blogs and other written media.

ABSTRACT

Since the late 1990s, in the context of rising gold prices and pro-market legal reforms, dozens of multi-national corporations have opened gold mines across the West African Sahel. Increasingly, corporate security forces enter into violent conflicts with so-called “artisanal” miners who extract gold with handpicks and dynamite. Social scientists and journalists have slotted conflicts between these two categories of miners into narratives of Africa’s neoliberal resource “curse” and problems of governance. By focusing on longer histories of extraction and empire, I reframe this “clash” as one node in a far-reaching debate over the rights of agrarian residents, the state, and private capital to the Sahel’s mineral resources. Since French conquest of this region in the 1890s, private prospectors and geologists have systematically appropriated the gold discoveries of West African miners while simultaneously degrading their extractive practices as primitive, criminal, and wasteful. While the criminalization of “informal” economic practices is a central feature of the power dynamics that constitute “development” in much of Africa, scholars have largely overlooked these dynamics in the extractive sector. Scholarship on mining focuses almost exclusively on the exploitation of land, labor, and ecologies. By contrast, I argue that the co-option of African mineral knowledge, and not only nature, is central to the reproduction of mining capitalism in West Africa, and likely elsewhere. This project also details how the racial geographies of imperialism became incorporated into post-colonial regulations of technological practice. Rooted in a deep historical account of gold mining in eastern Senegal, this dissertation is based on two years of field research in Senegal, Guinea, and France.

PART I

Reframing The 21st Century ‘Scramble’ For Africa’s Resources



(Figure 1: “Artisanal” mining team operating a pulley system, Tinkoto, Senegal, 2014)

Introduction

Nightfall descends quickly over the western ridge of the village of Tinkoto, the population of which fluctuates from 2,000 to 12,000 based on the season and the global price of gold. Located in Kedougou, a region occupying the southeastern reaches of Senegal, Tinkoto is the country's most legendary "artisanal" gold mining village. For over a century, men and women have migrated here to pass the Sahelian dry season (December to April) digging for gold. After erecting makeshift huts of palm fronds, they descend into desiccated riverbeds to extract ancient deposits of gold buried under meters of sterile laterite rock. In the past, men used hand picks forged by local blacksmiths to dig vertical shafts into the surface of the earth. Remaining at the surface, women used calabashes tied to rope to hoist rock excavated from below.

In the early 1980s, at the height of prolonged droughts that earned the "Sahel" an international reputation as a place of destitution and starvation, several families moved to Tinkoto year-round. They transformed what was once a dry-season goldfield, called a *dioura* in Maninkankan, into a permanent village. They cleared trees, grew crops and expanded their families, and searched the surrounding valleys and rock escarpments for fresh gold deposits. Among them was Bambo Cissokho, a charismatic man then in his 20s, the eldest son of a family of multi-generational gold miners from the pre-colonial province of Beledougou. With the steady rise of global gold prices in the 1990s, dozens of young men from Mali, Guinea, and elsewhere in Senegal migrated to Tinkoto. They integrated into the village as guests of households established in the 1980s and joined the village's multi-ethnic mining teams. State agents, thin on the ground in Senegal's most remote and sparsely populated region, largely ignored the budding

village. When the rains began to fall in May, Tinkoto's residents farmed millet, sorghum, and rice like most citizens of the Kedougou region. But with the start of the Harmattan winds in January, they began prospecting for gold, digging subterranean caverns, and processing the precious metals in streams. Every month, merchants from Mali passed by Tinkoto, purchasing the gold dust amassed by men and women, peddling the metal to Bamako.

Cissokho organized a traditional police force for the mines, called *tomobolman*, and a "chief of the mines" (*diourakuntigi*) charged with ensuring the fertility of the *dioura* and the well being of miners by conducting sacrifices to *jinne*—spirits who are the true owners of gold. These traditional authorities are found on goldfields across the West African Sahel, which stretches from Tinkoto to the gold provinces of Lobi in Burkina Faso and Bouré in Guinea. By popular vote, the male heads of household in Tinkoto elected Cissokho as the "chief of the village" (*dugutigi*), an office discrete from the chief of the mines. In the mid-2000s, the Senegalese state recognized the village of Tinkoto. Today the name Bambo Cissokho is synonymous with gold.

It is March of 2014, the height of the Sahelian dry season. The days are long and the mid-day sun is searing, the savannah plains stripped of all color save rusty brown. Tinkoto is swollen with migrants and merchants, diviners and praise singers. During the day, able-bodied men and women disperse from the village to search for gold in the surrounding forest. They travel by foot, bicycle, motorcycle, and in pick-up trucks operated for a fee by men from Guinea. *Tomobolman* monitor goldfields where hundreds of mining teams excavate deep mining shafts. Teams range from six to sixteen, composed mostly of men and an occasional woman. They alternate the arduous work of digging a vertical shaft into the belly of hillsides and into ancient riverbeds. Two men dig at the base of the shaft, filling buckets with sterile rock hoisted to the surface by teammates operating a pulley-system above. Women weave among the gaping mining pits,

carrying baskets of fruit, hot tea, and fried bean-cakes. Before teams reach auriferous soils, they live largely on credit extended by boutique owners or financiers from Dakar or Bamako.

Back in the village of Tinkoto the central thoroughfare is bustling. Tinkoto's dirt streets are lined with wooden tabletops featuring vegetables, kola nuts, used clothing, and snacks of sliced mango and roasted peanuts wrapped in plastic sachets. Young women sit beside oversized Styrofoam coolers containing cold cans of Coca-Cola and Fanta nestled among blocks of ice. These coolers arrive each morning in Tinkoto strapped to the roof of "bush taxis" that ferry merchants, financiers, and miners between Tinkoto and Kedougou. Interspersed among these traders are motorcycle and cellphone dealers awaiting miners who strike upon a large gold deposit underground. Every morning the butchers of Tinkoto, who install on a series of bloodstained wooden tables at the center of town, purchase a cow from Fulani herders who circle through the region's different artisanal mines. Slaughtered and quartered, the fresh meat is sold before high noon to hundreds of households and to women who prepare and sell rice dishes for a fee to the hundreds of miners who migrate to Tinkoto alone—without their families. On the side paths that feed Tinkoto's central thoroughfare, women from Cote d'Ivoire and Burkina Faso operate clandestine bars, consisting of little more than blue tarps draped over wooden posts and pegged to the ground with heavy rocks. They serve fried plantains, palm wine, and warm cans of beer. Cold beer, cooled in several generator-powered refrigerators, sells at triple the price.

Tinkoto is as diverse as any neighborhood in Dakar or Bamako. On the *diouras*, Christians, Muslims, and traditionalists, ethnic Mande, Fulfulde, Diahanke, Tenda, Djallonke, Kpelle, Wolof, Susu, Mossi, and Bambara socialize and labor, intermarry and quarrel. Day and night over two-dozen *tombolman* patrol Tinkoto village and the most popular mining sites of the season. They forbid cooking fires past noon to reduce the chance of fires when most of the

village is in the mines. Residents are banned from riding motorcycles through the village after dusk to avoid hitting the children who play soccer on the dusty pathways. Any disputes the *tombolman* cannot resolve are brought to Cissokho's compound for public "judgment."

Cissokho's compound is situated in Tinkoto's "old neighborhood" (*l'ancien quartier*) to which the village was confined prior to the rise in gold prices in the late 1990s. Cissokho's traditional Mande-style mud and thatch hut is surrounded by several concrete buildings, one for each of his four wives. The concessions of Cissokho's three eldest sons, who have their own families, adjoin the central compound of their fathers. Cissokho's court—called *le tribunal* in Tinkoto—is comprised of a concrete platform protected by a massive awning of woven bamboo that extends from the roof of Cissokho's hut. The male heads of Tinkoto's founding families, roughly fifteen men, assemble in green plastic chairs in the court. They assist Cissokho as he deliberates over requests and disputes. This evening the chairs are arranged in a semi-circle facing two polyester recliners covered in weathered brown velour. A *gendarme* from Kedougou occupies one of the recliners.¹ Emerging from the doorway of his hut in a bright blue kaftan, Cissokho settles into the other recliner. Cissokho waves his hand to a young *tombolman* who enters the court accompanying a shirtless man covered in rust-colored dust. A generator sputters to life from behind Cissokho's hut, illuminating light bulbs hung from bamboo poles overhead. Curious observers surround the court. The young man falls to his knees. Court is convened.

The question on hand is whether the kneeling man is in violation of a court date issued by the state's *tribunal* rather than the informal court presided over by Cissokho. Early this morning Cissokho received a call from the *gendarme* describing a man suspected of "fleeing" to the

¹ Modeled on the French system, there are two policing forces in Senegal: the *gendarme* and the *police*. The *policerie* is a civilian force primarily responsible for major cities and urban areas in Senegal. By contrast, the *Gendarmerie Nationale* is a branch of the Senegalese military and is responsible for policing smaller towns, rural areas, military installations, ports, and highways. Until 2014, there were no police in the region of Kedougou, only a *gendarmerie*.

mines in violation of a court date. Cissokho dispatched a group of his most trusted *tombolman* to search for the man among the thousands of migrants laboring on Tinkoto's goldfields spread in a fifteen-kilometer radius of the village. Within hours, the *tombolman* found "the suspect" laboring with a team composed largely of Malian miners at *dioura ba* (the "big mine" in Maninkakan).

The *gendarme* interrogates the kneeling man, alternating between French and Wolof, the language most widely spoken in Senegal but rarely used in Tinkoto. Here the *lingua franca* is Fulfulde and Maninkakan, the dominant languages of northern Guinea and southern Mali. The man replies in a broken mixture of French and Fulfulde, revealing a distinctively Guinean accent. Not more than a minute passes before the *gendarme* gestures to the shadowy corners of the courtyard. Two other *gendarmes* emerge, wrestle the man to his feet, and usher him to a pick-up truck idling at the entryway of the court. Cissokho shakes hands with the head *gendarme* and deplores the man in the truck in Fulfulde for "breaking the law of the state." The *gendarmes* depart quickly into a starless night and the court turns to a range of more routine problems paraded before Cissokho and the other assembled men. A Malian man asks Cissokho and the council for a space in the market to open a cellphone shop, another man asks forgiveness for riding a motorcycle after dusk, a *damantigi* accuses a member of his team of smuggling gold. Cissokho listens, weighs in on the disputes, and refers to the assembly for dissenting opinions. Together they accord permissions to open new boutiques on Tinkoto's thoroughfare, grant forgiveness to others, and order others to repay debts or to leave the village.

Two days ago the recliner opposite Cissokho's own was occupied by a very different authority: the Senegalese camp manager of Randgold, a South African mining company whose research permit encompasses the entire village of Tinkoto and its surrounding "artisanal" mines.²

² Randgold was founded in South Africa, but it is incorporated in Jersey and headquartered in St. Helier, both of which are British dependencies and used as "off shore" tax havens for dozens of mining

While Cissokho collaborates with state authorities to pursue those in violation of “the law,” the artisanal mining that is the lifeblood of Tinkoto’s economy is, in fact, illegal. Randgold holds four exploration permits in the region of Kedougou and is in a joint venture agreement with a Canadian gold mining company for a fifth. The five permits cover a total of 1,650 km² and accord Randgold the exclusive right to prospect for gold within these territories, rendering illegal the extractive activities of Tinkoto’s long-term residents and seasonal migrants.³ Randgold, which operates five gold mines in Mali, Cote d’Ivoire, and the Democratic Republic of Congo, has been exploring for gold in Kedougou since 2003. Mohamed David Mbaye, the head geologist and country manager for Randgold in Senegal has known Bambo Cissokho, employed his sons, and interacted with artisanal miners in the village of Tinkoto for close to fifteen years. These two men have seen each other’s children grow into adults and witnessed Kedougou’s emergence as a major frontier for industrial and artisanal gold exploration. In 2013, Randgold announced the discovery of a 3.7 million ounce gold deposit called “Massawa,” located 15 kilometers from Tinkoto. Technical difficulties associated with the deposition of the gold, however, have slowed the prospects of transforming this discovery into an active mine. In the meantime, Randgold continues exploration of their permit based at a camp five kilometers from Tinkoto. The company employs local residents to dig exploration trenches for geologists.

The relationship between Tinkoto and Randgold, represented by Bambo Cissokho and David Mbaye, has been uneven, contentious, and very intimate. Tinkoto’s residents have engaged in “wars” with Randgold, when local employees returned at night to exploration trenches they dug during the day with Randgold’s geological team to “dig out” the pits—

companies Randgold is listed on the London Stock Exchange and NASDAQ. It is focused on exploring and developing gold mines in West and Central Africa.

³ These permits are Kounemba, Miko, Dalema and Tomboronkoto. Through a 2007 joint venture agreement with IAMGOLD, Randgold also holds an interest in the Bambadji permit. For details on Randgold’s exploration activities in Kedougou, see: <http://www.randgoldresources.com/massawa>.

transforming corporate exploration activities into an artisanal gold mine. The company sent private security forces to expel local miners from the trenches. Several residents and (former) employees of Randgold were arrested, including one of Cissokho's sons. The goldfield where this encounter transpired was renamed "Gulf," a reference to the Gulf Wars portrayed in movies that often screen on national television stations in Senegal. At the same time, when most of Tinkoto's village was burned to the ground in a grease fire in 2008, Randgold provided assistance in food aid and clothing. The company also financed a women's garden and built a chicken coop, latrines, and installed solar panels at Tinkoto's school. Randgold also leased an expensive diamond bore drill—sub-contracted by gold exploration companies to extract core samples of earth from hundreds of meters underground—to dig three deep-bore wells, operated by hand-powered leverage pumps, for the "women of Tinkoto."



(Figure 2: Randgold's trenches on the left, artisanal pitson the right, Tinkoto, Senegal, 2014)

Cissokho describes his relationship with Randgold and David Mbaye as “familial,” a reference to the intimate obligations and betrayals of which blood ties are capable. The problem brought to Bambo Cissokh’s “court” by David Mbaye the previous week concerned a young man from Tinkoto employed by the company’s geological research camp. According to Mbaye, the young man returned to one of the exploration trenches at night. Cissokho reassured Mbaye that the problem would be resolved. Cissokho dispatched two of his most trusted *tombolman* to reprimand the man in question for violating the promise forged by Cissokho and the camp manager years ago to respect a “boundary” between Randgold’s active research areas to the north and the broad zone to the south where the population of Tinkoto was informally permitted to dig for gold. While Mbaye allows Tinkoto’s population to mine within a large portion of Randgold’s exploration permit, Cissokho protects Randgold’s corporate property by drawing on a customary police to ensure the company’s “no go” zone is respected.

While Cissokho deploys the metaphors of family to describe this fragile and tempestuous relationship with corporate capital, Randgold refers to this informal agreement with Cissokho as their “social license to operate.” Over the past decade the global mining industry has taken up this term, which has roots in the timber industry, to describe a range of extralegal agreements that “secure” corporate property and favorable relationships with communities and other “host country stakeholders” surrounding sites of extraction.”⁴ In auriferous zones, where local populations search for the same substance as multi-national firms, the “social license” often involves allowing local communities to mine a portion of the company’s research permit. More

⁴ The concept of the “social license” used by the mining industry has no legal status. It grew out of corporate responsibility programs. For an overview, see Kieren Moffat and Airong Zhang, “The paths to social licence to operate: An integrative model explaining community acceptance of mining,” *Resources Policy*, Vol. 39 (Mar. 2014), 61-70; The International Finance Corporation, *Strategic Community Investment: A Good Practice Handbook for Companies Doing Business in Emerging Markets* (Washington, D.C., 2010); Business for Social Responsibility, *The Social License to Operate* (2003).

benign articulations of the “social license” involve investing in local infrastructure, such as building schools, distributing mosquito bed-nets, and financing the HIV/AIDS prevention campaigns of local non-governmental organizations (NGOs); in short, the suite of activities associated with “corporate social responsibility” (CSR) programs of industries worldwide.

Over the past decade, historians and anthropologists have generated a rich literature on the historical emergence and contemporary politics of CSR.⁵ Arguably, the best scholarship on CSR concerns the extractive sector, which pioneered the movement as a response to transnational activism against the sector’s notoriously negative impacts on local ecologies, labor, and the social and moral fabric of everyday life. While focused on the extractive sector, this research is part of a broader effort to understand how the newly declared “moral mandates” of global capitalism—ranging from fair trade to working wage movements—return benefits to the places and communities from which food, mining, and clothing industries generate their profits.

But CSR programs are only the formal face of the interaction of corporate capital with local communities. In the mineral industry, in particular, it can take years and even decades of intensive mineral exploration before a company locates a deposit that they can mine profitably. Mineral exploration is a risky business. It involves maintaining protracted relationships with governments and rural communities with no guarantee of developing a future mine. These relationships are based on futures and are constantly remade in tandem with shifting mineral prices, changes in extractive technologies, and mineral discoveries elsewhere on the globe.

This dissertation unpacks the messy, informal, and deeply historical relationships that converged in recent decades to make West African Sahel a global gold mining frontier. In particular, it focuses on the exchange of expertise, labor, and security forces between local

⁵ Dinah Rajak, *In Good Company: An Anatomy of Corporate Social Responsibility* (Stanford, 2011); Marina Welker, *Enacting the Corporation: An American Mining Firm in Post-Authoritarian Indonesia* (Berkeley, 2014).

communities, the state, and corporate capital that takes place during the mineral exploration “phase.” The global mining industry considers southeastern Senegal an “emerging gold belt,” an important node in a transnational gold boom unfolding on the savannah plains of Guinea, Mali, Burkina Faso, and northern Cote d’Ivoire since the late 1990s. Along the “Kenieba inter-alia belt”—a geological formation that straddles the border of Mali and Senegal—companies listed on the stock exchanges of Toronto, London, Sydney, and Johannesburg have opened no less than eight open-pit gold mines. There is only one open-pit gold mine in operation in Senegal today, but gold exploration permits cover over three quarters of the region of Kedougou. Three companies have announced their intention to open mines within the next two years.⁶

With rising gold prices and stagnant rural economies, African citizens have intensified so-called “artisanal” mining across the region.⁷ The legal framework governing artisanal mining in Senegal is rapidly changing, but in many contexts it is illegal. It is estimated that between six to eight million people in sub-Saharan Africa alone depend on “artisanal” mining as their primary income source, with more than 15 million engaged in the sector indirectly through commerce.⁸ This twinned mineral frontier—one industrial, the other artisanal—has placed gold at the heart of struggles over land and resource rights on the West African Sahel today. Through coordinated lobbies with African states and news media outlets, mining corporations argue that

⁶ Teranga Gold, a Canadian company who purchased the project from an Australian firm in 2008-2009, operates Senegal’s only open-pit gold mine to-date. IAMGOLD, Toro Gold, and Bassari Resources are currently transitioning from exploration permits to extraction or concessionary permits. Several other companies—including Goldstone Resources and Axmin—hold exploration permits in Kedougou. Many of these companies operate mines or hold exploration permits in the neighboring states of Mali and Guinea.

⁷ In tandem with the larger commodity price boom of the early 2000s, the price of gold increased by a factor of five between 2000 and 2011. Prices have stagnated over the past few years.

⁸ These statistics are based on estimates from the following reports: World Bank, *The millennium development goals and small-scale mining: A conference for forging partnerships for action*, (Washington, DC: 2005); United Nations, *Artisanal and small-scale mining and technology challenges in Africa* (Addis Ababa, 2003); and Gavin Hilson and J. McQuilken, “Four decades of support for artisanal and small-scale mining in sub-Saharan Africa,” *The Extractive Industries and Society* 1 (2014), 104-118.

the “artisanal” miners who occupy and neighbor their permits are criminal and wasteful, destroy the local environment, and pirate the discoveries of professional geologists. Corporations further argue that increasingly violent encounters with their private security forces and “artisanal” miners are new—the outcome of an unfettered “informal” economy and the expansion of “customary” toolkits to include dynamite and mortar-pickers. Bambo Cissokho and other prominent chiefs of indigenous mining communities counter these claims. They maintain that generations of expatriate prospectors and state geologists have “stolen” their—and their ancestors’—gold discoveries. What are we to make of these mutual accusations of piracy and appropriation? What do they reveal about the relationship of corporate and local expertise in what has become coined as the 21st century “scramble” for Africa’s natural resources?

To answer these questions, I triangulate hundreds of oral histories, archival sources collected in Senegal, Guinea, and France, and nearly two years of ethnographic research conducted in multi-generational “artisanal” gold mining villages in Senegal. Embracing a temporal frame far deeper than the working lives of David Mbaye and Bambo Cissokho, I argue that artisanal and industrial gold mining in West Africa are interrelated components of a single extractive system rather than discrete “sectors” or accidental “neighbors.” I demonstrate this by locating the contemporary “scramble” for Africa’s resources within two histories. The first is the indigenous institutions and logics that governed pre-colonial extraction on the Sahel and continue to exercise considerable control over “artisanal” extraction today. Secondly, I examine how the colonial state and its post-colonial successor regulated, denigrated, and appropriated African gold discoveries. Since French conquest in the 1890s, European and West African gold miners have competed and collaborated, exchanging extractive techniques, labor and gold discoveries. A central claim of this dissertation is that state geologists and private prospectors

have systematically appropriated the gold discoveries of African miners, while simultaneously degrading African extractive practices as primitive, wasteful, and criminal. Subterranean knowledge has not flowed in one direction. African miners also learned new techniques and pirated discoveries from interloping geologists. For generations mineral missions and companies have employed expert artisanal miners from southeastern Senegal as skilled laborers, bush guides, and geological aides. These men carried knowledge acquired from one realm into the other, blurring distinctions between licit and illicit economies, artisanal and industrial extraction, and local and global knowledge. Highly unequal colonial and post-colonial property regimes ensured that the benefits of this “open economy” of subterranean knowledge accrued largely to the state and to private mining companies. Grievances over these unequal exchanges endure, however, and shape protests and increasingly violent encounters between artisanal miners and representatives of corporate gold mining companies as well as the post-colonial state.

The transformation of West Africans into “artisanal” miners is part of a broader legal transformation that reduced African hunters into poachers and healers into witches. The bifurcation of artisanal and industrial mining aligns with the colonial dualisms of subject and citizen. By documenting how artisanal miners became classified as the criminal, primitive, and customary counterpart to modern industry in the first place, I explain how the geographies of imperialism have become re-inscribed on the regulation of extraction in the post-colonial world.

Further, by placing questions of knowledge exchange and appropriation at the heart of a study of extraction and state formation in West Africa, I challenge the overwhelming focus of environmental and social histories of extraction on the exploitation of land, labor and local ecologies, and the emergence of working class politics.⁹ Historians of the environment and labor

⁹ Influential contributions to this rich literature include James Ferguson, *Expectations of Modernity*; Michael T. Taussig, *The Devil and Commodity Fetishism in South America* (Chapel Hill, 1980); June

have established that capitalism derives power and profit from the co-option of nature and local political institutions. By drawing on the arguments and life histories of artisanal miners and geologists, I argue that the appropriation and use of knowledge tied to natural resources is also central to the reproduction of gold mining capitalism in West Africa.

West Africa's Gold Frontier: A Tale of Two Miners

From 400 CE until Europe's "discovery" of the Americas in the fifteenth century, West Africa was the most important source of gold for the Mediterranean world.¹⁰ For centuries outsiders imagined huge open-pit mines in West Africa powered by slave labor. The reality was far different. The steady flow of gold by camel trade across the Sahara was the accumulated labor of thousands of men and women who mined gold across a vast zone—stretching from present-day Senegal to the far eastern reaches of Burkina Faso and south to the coast of Ghana. It was precisely because gold deposits were so widespread, and exploitable with a narrow range of locally forged tools, that West Africa produced such a significant quantity of gold.¹¹ While different kingdoms taxed the gold trade, production and processing remained in the hands of

Nash, *We Eat the Mines and the Mines Eat Us: Dependency and Exploitation in Bolivian Tin Mines* (New York, 1993); Elizabeth Emma Ferry, *Not Ours Alone: Patrimony, Value, and Collectivity in Contemporary Mexico* (New York, 2005); Janet Finn, *Tracing the Veins: Of Copper, Culture, and Community from Butte to Chuquicamata* (Berkeley, 1998); Anna Lowenhaupt Tsing, *Friction: An Ethnography of Global Connection* (2005); Thomas G. Andrews, *Killing for Coal: America's Deadliest Labor War* (2008); Alex Golub, *Leviathans at the Gold Mine: Creating Indigenous and Corporate Actors in Papua New Guinea* (Durham, 2004); Chris Ballard and Glenn Banks, "Resource Wars: The Anthropology of Mining," *Annual Review of anthropology*, Vol 32 (2003). 287-313.

¹⁰Cameron Gokee, *Assembling the Village in Medieval Bambuk: An Archaeology of Interaction at Diouboye, Senegal* (Forthcoming, 2016); Jean Girard, *L'or du Bambouk. Une dynamique de civilisation ouest-africaine. Du royaume de Gabou à la Casamance* (Geneva, 1992); Nehemia Levtzion, *Ancient Ghana and Mali* (London, 1973); Raymond Mauny, *Tableau Géographique de l'Ouest Africain au Moyen Age* (Dakar, 1961); Roderick J. McIntosh, *Ancient Middle Niger: Urbanism and the Self-Organizing Landscape* (Cambridge, 2005).

¹¹ Gokee, *Assembling the Village*.

families. It was in search of the fabled sources of West African gold that Portuguese boats first ventured down the West African coast in the fifteenth century. French, British, and Dutch merchants followed suit. They traded cloth, libations, and other manufactured goods with local populations for gold. It was while capturing slaves from elsewhere on the African coast to trade with indigenous gold merchants that Europeans began to shift the focus of their commerce to a trans-Atlantic slave trade—which became the focus of Euro-African trade for several centuries.

As evidenced by archeology and textual sources, from 1300-1900 CE, West African miners, blacksmiths, and traders significantly expanded indigenous mining frontiers, settling new villages and even polities while in search of fresh iron and gold deposits. African gold mining intensified greatly under colonialism, leading to the discovery of dozens of new gold mining zones, including some that had been mined by “the ancients” hundreds of years prior. And so it is with some irony that gold corporations based in Australia, South Africa, Canada, and London have declared the West African Sahel an “emerging gold belt” that is “virtually unexplored.”

As anthropologist Anna Tsing argues, resource frontiers are built from conquest and the production of “wilderness, the edge of the known world—so that some, and not others may reap its rewards.”¹² Terms such as “underexplored” or “emerging” evoke the frontier in discourse and give the impression of fresh discoveries. In mining industry promotion videos these phrases are conveniently paired with descriptions of Kedougou as “sparsely populated.” This communicates to potential investors the possibility of extraction with minimal human friction.¹³

Such descriptions are as inaccurate today as they were at conquest in the late nineteenth century. Military officers and colonists erroneously described African lands as “vacant” and

¹² Anna Tsing, *Friction: An Ethnography of Global Connection* (Princeton, N.J., 2001).

¹³ Quotes taken from the following promotional videos: Toro Gold Mako Project, Promotional Video, Accessed on October 1, 2015 (<https://www.youtube.com/watch?v=9c0Hgg9NuvY>); “CNBC Africa, The positive impact of Teranga Gold’s Sabodala Mine in Senegal” Accessed on October 1, 2015, (<https://www.youtube.com/watch?v=aouwo7jAC-0>).

decried them as “under-populated,” reducing complex settlement and civilizational histories to lists of “natural resources” or “commodities” that could be “rationally” exploited by Europeans.¹⁴ Such frontier talk rests awkwardly in a region where “local” populations conducted gold research of their own for over a millennium, where the “sparsely populated” villages occupying the fragile soils of western Mali and eastern Senegal were settled by Africans in search of fresh gold deposits of their own.¹⁵ Moreover, in living memory, generations of local men have labored as guides for geologists from the USSR, France, Switzerland, South Africa, Britain, Australia, Canada, and the Senegalese capital of Dakar. Villagers collaborated with expatriate and Senegalese geologists to scour the landscape for underlying gold deposits. Their discoveries were collaborative. This is not a new mineral frontier but a very old one.

This account of competitive extraction forces a reconsideration of the received narrative of “Africa’s 21st century resource scramble,” a phrase coined by economists, political scientists, and policy analysts to describe the resurgence of global interest in Africa’s mineral, marine, fuel, and agricultural resources since the late 1990s and early 2000s.¹⁶ The interest of China, India, Brazil, and Japan in Africa’s “natural resources” has generated considerable debate over the parallels and divergences between the current “scramble” and that of late nineteenth century European imperial powers from which the term “scramble” is drawn. The gold industry, along with fuel and gas companies, has considerably expanded its assets and net profits across sub-

¹⁴ Mary Louise Pratt, *Imperial Eyes: Travel Writing and Transculturation* (London, 1992), 152; William Cronon, *Changes in the Land: Indians, Colonists, and the Ecology of New England* (New York, 1983).

¹⁵ Gokee, *Assembling the Village*.

¹⁶ For academic perspectives, see Padraig Carmody, *The New Scramble for Africa* (Cambridge, 2011); M. Klare, *The Race for What’s Left: The Global Scramble for the World’s Resources* (New York, 2001); Roger Southall and Henning Melber (eds.), *A New Scramble for Africa? Imperialism, Investment, and Development* (Kwa-Zulu Natal, 2009). Influential policy positions on the “new scramble” include McKinsey Global Institute, *Lions on the Move: The progress and potential of African Economies* (June 2010); *The Economist*, “Africa Rising: A Hopeful Continent,” (Mar. 2, 2013), *The Economist*, “Africa’s Natural Resources: Blood Earth” (Apr 11, 2015); Africa Progress Panel, “Equity in Extractives: Stewarding Africa’s Natural Resources for All” (Geneva, 2013).

Saharan Africa over the past fifteen to twenty years. China, Brazil, and India have focused on extracting industrial metals, such as bauxite, iron, copper, phosphates. But in West Africa, Australian, Canadian, and South African capital dominates regional gold mining.

Policy analysts and economists argue that the rapid expansion of gold mining in Western and Eastern Africa was born of a fertile conjuncture. This included rising gold prices, technological advances in the mining industry and global infrastructure logistics, and the depletion of more accessible deposits in traditional gold countries, such as Australia, Canada, and South Africa. The World Bank and the International Finance Corporation also encouraged foreign investments in Africa's subsoil. One of the major conditions of the pro-market reforms "structural adjustment" programs in the 1970s through the 1990s, encouraged by the World Bank and the IFC, included the liberalization of national mining codes, the privatization of national mining industries, and the lowering of taxes and fees for expatriate exploration firms.¹⁷

Clearly, this accounts for why the enclosure of West Africa's auriferous zones took place when it did and why corporate miners can operate "like off-shore oil companies"—highly integrated into global financial centers, but largely cut off from local economies and labor markets.¹⁸ Yet these factors are not sufficient to account for the wild and rapid productivity of West Africa's recent corporate gold boom, and the particular grievances and forms of protest it engenders locally. Rather, the "scramble" for West African gold is a partial and ongoing co-

¹⁷ *Ibid.* On pro-market reforms to mining codes, see Bonnie Campbell, "Revisiting the Reform Process of African Mining Regimes," *Canadian Journal of Development Studies* 30:1-2 (2010), 197-217; Campbell, *Mining in Africa: Regulation and Development* (New York, 2009); Campbell, ed, *Regulating Mining in Africa: For whose benefit?* (Uppsala, 2004); and G. Bridge, "Mapping the bonanza: geographies of mining investment in an era of neoliberal reform," *Professional Geographer* 56:3 (2004), 406-21.

¹⁸ James Ferguson, *Global Shadows: Africa and the Neoliberal World Order* (Durham, 2006); see also Ferguson, "Seeing Like an Oil Company: Space, Security, and Global Capital in Neoliberal Africa," *American Anthropologist* 107:3 (2005), 377-82.

option of mineral exploration conducted by generations of “artisanal” gold miners in collaboration with state geologists and private prospectors over the long twentieth century.

Consider that many of the gold mines opened by private enterprises in West Africa in the late 1990s and 2000s were revitalized “shelf projects” or “reserves.” These were known gold deposits “discovered” by earlier mineral missions led by the colonial and post-colonial state or private prospectors. When African states revised their mining codes to make them more attractive to foreign investors—namely through a reduction in tax burdens—African states opened these shelf projects to bids by private investors. The availability of so many “shelf projects” in West Africa was a crucial and often overlooked component of the techno-political system that allowed global corporations to rapidly transform rocks and sands into commodities and market share value. Further, the mineral missions that produced these “shelf projects” relied on the knowledge of indigenous miners. Under both colonial and post-colonial conditions, professional geologists sampled “native” mining pits and shadowed expert African prospectors, learning from these men and women how to scour the landscape for tree formations, termite mounds, and other natural features that “indexed” the presence of underlying gold. Beginning in the 1890s, colonial and post-colonial geologists used maps of African gold mines to draw the region’s first mineral maps and advertise propitious gold “discoveries” to metropolitan investors. This practice continued throughout the colonial period and early decades of independence. Until the 1980s, most of the known gold reserves in West Africa had been discovered by local populations or through intimate collaborations between geologists and expert “artisanal” miners.

This knowledge appropriation is direct and ongoing. So-called “junior” gold exploration companies hold most of the permits in Senegal, Guinea, and Mali. These are relatively small outfits staffed by a few geologists and financed by venture capital. This research is risky and

speculative and tied to price fluctuations in centers of global capital. These companies keep a low profile, hire host country geologists, and operate out of modest “bush camps.” They employ locals to construct, furnish and often cook for the camp “traditional style.” Holding combined permits for thousands of square kilometers, geologists orient and focus their prospecting activities by tracking “artisanal” gold workings—both active and abandoned. They collaborate with local populations, paying experienced miners to serve as guides and geological aides.



(Figure 3: Mother and son of an artisanal mining family, Kerekonko, Senegal, 2014)

The importance of these local collaborations varies greatly depending on the size of the company, their budget, and the type of gold deposit for which they prospect. Most local miners do not dig deeper than thirty feet into the surface of the earth, while many of the larger mining

companies in operation in Senegal, Guinea, and Mali extract gold from open-pit mines up to several hundred meters underground. However, there are many smaller-scale outfits that target shallow deposits, most commonly alluvial gold, which are the focus of local extraction as well. But even larger-scale companies searching for deep lode ore use maps of alluvial deposits, located first by artisanal miners, to trace the origins of this gold back to parent-rock deposits. Regardless of the target gold deposits of the research company, discoveries by local populations are often of direct economic interest to the prospecting team and future industrial prospects. This mineral frontier is at once collaborative and competitive—profoundly global in its financial infrastructure, while intensely local in the kinds of expertise and resources it seeks. This is a “scramble” not only for nature and a state-backed sanction to mine, but also for knowledge.

Competition on Senegal’s mineral frontier is not limited to Africans and Euro-Americans. The stable price of gold, coupled with diminishing farm-based opportunities for young people, has sparked intense competition among different groups of West Africans for access to gold deposits and the techniques and political relations necessary to exploit them. This dissertation traces two intertwined histories of competition and exchange of subsoil knowledge across the past 150 years. I analyze how pre-colonial idioms and practices of extraction influenced the claims of different groups of Africans to subterranean resources. I examine how social and class differences, and the distribution of power within West African societies, impacts access to gold in multi-generational ‘artisanal’ mining villages. A deeply historicized view from within West African households challenges the characterization of artisanal mining as a “creative response” to late modern capitalism. Much like the “global” corporations with whom they compete, artisanal mining chiefs recruit transnational experts. Guinean prospectors, Burkinabe rock

crushers, and Malian shaft diggers swell the villages of southeastern Senegal, generating social and technical labor hierarchies as complex as those of corporate mining camps.

As in many parts of the Sahel, Mande “traditionalist” institutions oversaw gold mining in Upper Gambia. Gold was considered a form of ritual labor based on exchanges with the nonhuman world, namely land spirits (*jinne*). The importance of non-Muslim “traditionalist” institutions to gold extraction structured the claims and interaction of different ethno-linguistic groups to auriferous zones. Most Fulbe and Diahanke Muslims argued that gold mining, and by extension Mande ritual practices, were *haram*. Since the recent gold boom, when Muslims have entered the “artisanal” sector in unprecedented numbers, Mande clans have worked to defend their rights as “masters of the soil.” While most environmental histories in Africa focus on divergences between “Shona” or “Swahili” uses of the land, trees, and minerals to “British” or “French” notions, this dissertation explores how social and class differences, and the distribution of power within West African societies, impacts access to gold in multi-generational “artisanal” mining villages. I explore relationships among different groups of miners with expatriate geologists, the land, and the nonhuman world of *jinne*. These spirits are widely recognized as the true proprietors of minerals. *Jinne* demand sacrifices of animals to release gold to human hands. As a result, “artisanal” mining cannot be neatly categorized as “ritual” or “technological.” Rather, extraction blends the two realms into a coherent set of practices and prohibitions.

I argue that there are also political reasons for attending to the imbrication of ritual and technical forms in the African past. Recognition of the sacred dimensions of extraction is more than an exegesis of a parallel symbolic realm in which “pre-colonial” extraction took place, a sort of foil to “modern” or “European” gold mining practices. Understanding the ritual logic of artisanal mines is crucial to understanding what West Africans lost—and fought to regain—after

goldfields became imperial property. Grounding this dissertation in the late pre-colonial spaces of the goldfield helps explain why conflicts over access to mineral deposits among contemporary inhabitants of southeastern Senegal have fractured along ethno-religious divisions rather than strictly territorial ones. Today many Mande clans argue that they have gained proprietary access to the subsoil because of blood sacrifices made by their ancestors to the *jinne*—the true proprietors of mineral resources. Turning to a deeper past thus generates the necessary “context” for interpreting contemporary claims to subterranean property in Senegal.

This dissertation breaks out of the colonial and postcolonial frame in which much of contemporary African history is situated. It is designed as a “history of the present” as Michael Foucault conceived of the concept.¹⁹ It is an account of how colonial and post-colonial policies—and disputes among colonial scientists, administrators, African subjects, citizens and politicians—shape the governance of resource rights today. Equally important, it explains how and why different groups in West Africa draw on history to make claims on property and nature in the present. The arguments of “artisanal” miners in southeastern Senegal today are both historically grounded and strategically deployed in encounters with the state and corporate capital. Part history and part ethnography, the structure of this dissertation reflects my approach to history as both a material set of events, structures, and ambitions—and as a resource for contemporary politics. The remainder of this introduction situates my central arguments within ethnographic and historical scholarship on extraction, the role of indigenous or local knowledge in capitalist accumulation, and in the broader literature on informal economies, particularly in Africa. I then detail the methods and geographic and temporal scope of the dissertation.

¹⁹ Michel Foucault, *The Archaeology of Knowledge*, A. M. Sheridan Smith, trans., (New York, 1976).

Out of the Enclave: Thick, Thin, and Competitive Extraction



(Figure 4: The airstrip at Teranga Gold’s Sabodala mine, Senegal, 2014)

In tandem with growing capital investments in Africa’s energy resources and hard metals over the past fifteen years, considerable scholarship and political attention has been drawn to life and labor beneath the surface of the earth. In Africa this literature has centered around studies of “industrial” or corporate extractive enclaves, on one hand, and a growing literature on “artisanal” production on the other. However, this scholarly bifurcation unwittingly reproduces the notion that “industrial” and “artisanal” mining constitute discrete “sectors.” By drawing on core insights from both literatures, I develop a framework for the study of artisanal and industrial extraction as competitive components of a single historic and contemporary extractive system.

The ethnography and historiography of mining is a rich one, particularly in Africa. In South Africa, a critical school of Marxist historiography cut its teeth on studies of wage labor, capitalist expansion, and protest within gold and diamond mines. Historians documented the

politics and cultures produced through long-distance labor migration, African families, and the limits to collective politics produced by colonial and Apartheid mining based on spatial segregation and a racist division of labor.²⁰ Meanwhile, southeastern Africa's "copper belt" inspired a new ethnographic tradition of studies of urbanization, "detrribalization," and ethnic mixing. The Rhodes-Livingstone Institute and allied researchers revealed how trade union activism and organized politics challenged tribal affiliations by generating a politics of class.²¹

Until the 1990s, much social and historical research on the mining industry in Africa and elsewhere in the formerly colonized world centered on questions of labor, capitalism and modernity.²² A smaller niche literature focused on the "symbolism" of pre-colonial extraction and smelting and the incorporation of "pre-capitalist" rituals into capitalist production.²³ If early studies of mining explored the socially "thick" worlds of colonial and national industrial mines questions about corporate personhood, resource enclaves, and materiality have introduced new

²⁰ Keith Breckenridge, "'Money with dignity': Migrants, mine lords and the cultural politics of the South African gold standard crisis, 1920-33," *The Journal of African History* 36:2 (1995), 271-304; Jonathan Crush, Alan Jeeves, and David Yudelman, *South Africa's Labor Empire: A History of Black Migrancy to the Gold Mines* (Westview, 1991); Dunbar T. Moodie and Vivienne Ndatshe, *Going for Gold: Men, Mines, and Migration* (Berkeley, 1994); Robert J. Gordon, *Mines, Masters, and Migrants: Life in a Namibian Mine Compound* (Ravan, 1977); Jeff Guy and Motlasti Thabane, Technology, ethnicity, and ideology: Basotho mines and shaft-sinking on the South African gold mines, *Journal of Southern African Studies* 14:2 (1988), 257-278; Charles Van Onselen, *Chibaro: African mine labour in Southern Rhodesia, 1900-1933* (London, 1976); Harold Wolpe, *Race, Class, and The Apartheid State* (London, 1988).

²¹ Powdermaker, *Copper Town; Max Gluckman*, "Anthropological Problems Arising from the African Industrial Revolution," *In Social Change in Modern Africa*. A. Southall, ed. (London, 1961). For an overview of the mid-century "Copper belt" ethnography, see James Ferguson, "The Copperbelt in Theory: From 'Emerging' Africa to the Ethnography of Decline," *In Expectations of Modernity: Myths and Meanings of Urban Life on the Zambian Copperbelt* (Berkeley, 1999), and Lyn Schumaker, *Africanizing Anthropology: Fieldworks, Networks, and the Making of Cultural Knowledge in Central Africa* (Durham, 2001). Robert Bates, *Rural Responses to Industrialization: A Study of Village Zambia* (New Haven, 1976), Michael Buroway, *The Colour of Class on the Copper Mines: From African Advancement to Zambianization* (Manchester, 1972); A.L. Epstein, *Politics in an Urban African Community* (Manchester, 1958); Hortense Powdermaker, *Copper Town: Changing Africa: The Human Situation on the Rhodesian Copperbelt* (New York, 1962).

²² See footnotes 11, 14, and 15.

²³ Beatrice Appia, "Les forgerons du Fouta Djallon," *Journal de la Société des Africanistes*, 35:2 (1965), 317-352; Eugenia Herbert, *Red gold of Africa: copper in precolonial history and culture* (Madison, 1984); Patrick McNaughton, *The Mande Blacksmiths: Knowledge, Power, and Art in West Africa* (Bloomington, 1988); Taussig, *The Devil and Commodity Fetishism*.

actors and units of analysis to the study of resource extraction. These research agendas are tied to massive changes in the global mining industry since mid-century, including the introduction of open-cut mines and heavily capitalized techniques that require a small and highly skilled work force compared to the state-led mines of the colonial and early post-colonial state. The radical liberalization of national mining codes in the 1990s and early 2000s further dismantled many of the nominal protections of labor, the environment, and persons displaced by mining projects.²⁴ Temporary and subcontracted labor has weakened labor organizing. This has encouraged a new generation of scholars to study resource contracts and financial institutions rather than labor.²⁵

In a field defining series of essays published in 2006 James Ferguson drew attention to the proliferation of private extractive enclaves in Africa. He argued that Africa was on the forefront of highly flexible and globalized forms of extraction and late “neoliberal” capitalism. Global logistics and capital-intensive technologies requiring a few skilled workers connect these enclaves to global centers of mining finance, while retaining few links to the local economy and labor base. For Ferguson corporate extractive enclaves are symptomatic of a larger feature of neoliberal capital. Capital does not “flow” across or encompass the globe, metaphors deployed by many globalization theorists of the 1990s and early 2000s. Rather, capital “hops, skips, and jumps” from New York to Angola’s oil fields, from London to Ghana’s gold mines, while “neatly skipping over most of what lies between.”²⁶ Further, political disorder and war generated no apparent barrier to Africa’s selective and spatially discrete engagement with “flows” of capital investment. To the contrary, some of the most productive extractive enclaves are found in

²⁴ Campbell, *Mining in Africa*.

²⁵ Stuart Kirsch, *Mining Capitalism: The Relationship between Corporations and their Critics* (Berkeley, 2014) and Jennifer Smith and Frederico Helfgott, “Flexibility or exploitation? Corporate social responsibility and the perils of universalization,” 26:3 (June 2010), 20-3.

²⁶ Ferguson, *Global Shadows*. For critical overviews of globalization literature in this vein, see Tsing, *Friction*; Ferguson, *Global Shadows*; Frederick Cooper, “Globalization,” In *Colonialism in Question: Theory, Knowledge, History* (Berkeley, 2005).

violent undemocratic states, contra the insistence of the authors of Africa's pro-market reforms that democracy, rule of law, and political order were essential for attracting foreign capital.

This productive disorder has generated very specific and spatially fixed pockets of prosperity in the midst of large corridors of poverty and infrastructural disconnection.²⁷ Ferguson compared these “socially thin” extractive enclaves to the “socially thick” company towns common in colonial-era mines that employed up to 100,000 workers. Based on a model of corporate paternalism, Copperbelt company towns came with far-reaching social investments, including schools, houses, roads, and unionized workers. By comparison, the forms of corporate extraction entering Africa in the 1990s and 2000s have been socially “thin”—staffed with expatriate personnel and guarded by private security forces.²⁸ Nowhere is this pattern more visible than in the “off-shore” oil industries of Nigeria, Angola, Gabon, and Equatorial Guinea. As Ferguson so deftly observed, many land-based extractive industries are becoming more “oil like,” with the increasing mechanization of the industry, a minimal regularized work force, and private security. Ferguson's insights were intentionally schematic, a call for more ethnographic and historic research on capital investment in Africa. A generation of scholars has responded, documenting the imbrication of “off-shore” oil companies with “on-shore” economies and labor; the dialectical relationship between corporations and their critics; and the paradoxes of

²⁷ On this point, see Frederick Cooper, *Africa since 1940: The Past of the Present* (Cambridge, 2002); Cooper, *Africa in the World: Capitalism, Empire, Nation-State* (Cambridge, 2014); Graham Harrison, *Neoliberal Africa: The Impact of Global Social Engineering* (London, 2010); Harvey, *The New Imperialism*; Steve Graham and Simon Marvin, *Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition* (London, 2001).

²⁸ Hannah Appel, “Offshore Work: Oil, Modularity, and the How of Capitalism in Equatorial Guinea,” *American Ethnologist* 39:4 (2011); Hannah Appel, “Walls and White Elephants: Oil Extraction, Responsibility, and Infrastructural Violence in Equatorial Guinea,” *Ethnography* 13 (4).

“sustainable” mining reforms.²⁹ Corporate social responsibility programs and critiques of the externalization of the true costs of extraction on local communities and ecologies have “re-thickened” relationships between mining companies and “local” communities.³⁰ In sum, recent literature on corporate extraction and its critics has generated sophisticated reflections on “neoliberal” or “late” capitalism in Africa as in Wyoming and Indonesia.

At the same time, a separate stream of research, conducted largely by anthropologists and political scientists, has shed light on the social and political formations that cohere around so-called “artisanal” miners.³¹ One strain of this literature examines the environmental impacts of artisanal mining, particularly mercury contamination and disease transmission at these cosmopolitan sites.³² Development studies scholars have documented barriers to “formalizing” artisanal mining and emphasized its capacity to reduce rural poverty and urban outmigration.³³ Anthropologists have characterized “artisanal” extraction as iconic of the growth of “popular”

²⁹ Stuart Kirsch, “Sustainable Mining,” *Dialectical Anthropology* (2010) 34:87-93; Kirsch, *Mining Capitalism*; and Kirsch, “Imagining Corporate Personhood,” *Political and Legal Anthropology Review* 37:2 (2014), 207-217.

³⁰ Dinah Rajak, *In Good Company: An Anatomy of Corporate Social Responsibility* (Stanford, 2011); Marina Welker, *Enacting the Corporation: An American Mining Firm in Post-Authoritarian Indonesia* (Berkeley, 2014); Katherine Fultz, *Economies of Representation: Communication, Conflict, and Mining in Guatemala* (Unpublished PhD, Department of Anthropology, University of Michigan, 2015); Fabiana Li, *Unearthing Conflict: Corporate Mining, Activism, and Expertise in Peru* (Durham, 2015).

³¹ William Reno, *Warlord Politics and African States* (Boulder, 1999)

³² Out of a vast literature, see N.S. Jennings, “Addressing labour and social issues in small-scale mining,” In Gavin Hilson (Ed.), *The Socio-economic Impacts of Artisanal and Small-Scale Mining in Developing Countries* (Balkema, 2003), 151-60; *Human Rights Watch*, “Toxic Toil: Child Labour and Mercury Exposure in Tanzania’s Small-Scale Gold Mines” (2013); T. Hentschel, F. Hruschka, M Priester, “Global Report on Artisanal and Small-Scale Mining, *International Institute for Environmental Development* (London, 2002); Seydou Keita, “Study on Artisanal and Small-Scale Mining in Mali,” *Mining, Minerals, and Sustainable Development, Institute for Environment and Development* (Aug 2001), no 80; *International Labour Organization*, “Social and Labour Issues in Small-Scale Mines,” (Geneva, 1999).

³³ On West Africa, see G. Hilson, “‘Once a miner, always a miner’: Poverty and livelihood diversification in Akwatia, Ghana,” *Journal of Rural Studies* (2010) 26: 296-307; S. M. Banchirigah and G. Hilson, ‘Degrarianization, re-agrarianization and local economic development: Re-orienting livelihoods in African artisanal mining communities’ *Policy Sciences* (2010) 43:157-80; R. Machonachie, ‘Re-agrarianising livelihoods in post-conflict Sierra Leone? Mineral wealth and rural challenges in artisanal and small-scale mining communities’, *Journal of International Development* (2011) 23, 1054-1067.

and “improvisational” economies in Africa with the transition of the “patronage” state toward “market-based tactics” and “non-bureaucratic organization.”³⁴ These studies examine the social meaning of money in artisanal mines, where young men engage in “daring” or “conspicuous consumption” and gold money is considered “hot” “bitter” and “wild.”³⁵ Anthropologists have traced how these unregulated mining sites contribute to the global production and consumption of cellphones, wedding rings, and AK-47s, and produce distinctive forms of political subjectivity.³⁶ In these studies, artisanal miners emerge as the “underbelly” of late capitalism and as the “productive foundation of the digital age, neoliberalism, and postmodernism.”³⁷

Literature focused almost exclusively *either* on industrial and artisanal mining gives the impression that these forms of extraction are related only through their structural relationship to global capitalism or the “privatization” of the state in Africa. This analytical bifurcation unwittingly reinforces a narrative in which post-colonial states and mining corporations have

³⁴ Elizabeth Hull and Deborah James, “Introduction: Popular Economies in South Africa,” *Africa: The Journal of the International African Institute*, Vol. 82, 1 (2012), 1-19; Mantz, “Improvisational Economies”; James H. Smith, “Tantalus in the Digital Age: Coltan Ore, Temporal Dispossession, and “Movement” in the Eastern Democratic Republic of the Congo,” *American Ethnologist*, Vol. 38, No. 1 (2011) 17–35; Cristiana Panella, “Ethique sociale du damnsen: Education familiale et orpaillage artisanal dans le Basidibe (Wasalon, Mali),” *Cahiers d’Etudes Africaines*, Vol 47, Cahier 186 (2007), 345-370; James H. Smith and Jeffrey Mantz, “Do cellular phones dream of civil war? The Mystification of production and the consequences of technology fetishism in the eastern Congo,” In *Inclusion and Exclusion in the Global Arena* (New York, 2006); Gratz 2003. “Gold Mining and Risk Management: A Case Study from Northern Benin,” *Ethnos* 68-2: 192-2008.

³⁵ A. Walsh, “Hot Money”; K. Werthmann, ‘Cowries, Gold and “Bitter Money”: Gold-Mining and Notions of Ill-Gotten Wealth in Burkina Faso’, *Paideuma* (2003) 49:105–124; Parker Shipton, “Bitter Money: Cultural Economy and Some African Meanings of Forbidden Commodities,” *American Ethnological Society Monograph Series*, 1 (Washington, DC, 1989); Filip De Boeck, Domesticating diamonds and dollars: identity, expenditure and sharing in southwestern Zaire (1984-1997), In *Globalization and Identity: Dialectics of Flow and Closure* (Oxford, 1999). For a comparative example, see Mette M. High, “Polluted money, polluted wealth: Emerging regimes of value in the Mongolian gold rush,” *American Ethnologist*, Vol 40, 4, 676-688.

³⁶ Paul Richards, *Fighting for the Rainforest: war, youth and resources in Sierra* (Oxford, 1996); Jeffrey W. Mantz, “Improvisational Economies: Coltan Production in the Eastern Congo,” *Social Anthropology* (2008) 16: 1, 34–50; James Smith, “Tantalus in the Digital Age: Coltan Ore, Temporal Dispossession, and “Movement” in the Eastern Democratic Republic of the Congo,” *American Ethnologist*, 38:1 (2011).

³⁷ James H. Smith and Jeffrey Mantz, “Do cellular phones dream of civil war? The Mystification of production and the consequences of technology fetishism in the eastern Congo,” In *Inclusion and Exclusion in the Global Arena* (New York, 2006), 78,

invested considerable public relations labor: that artisanal and industrial extraction are categorically distinct. From this debate, the following categories emerge:

Artisanal miner = Third world, illegal, primitive, local, customary, creative

Industrial miner = First world, legal, technologically advanced, global, modern

This dissertation challenges this “technological” binary, showing that it has origins in the colonial regulation and degradation of African technological practice. The category of the “artisanal” miner was produced through competition with European miners. Two methodological moves trouble the discursive and analytical bifurcation of industrial and artisanal mining. First I broaden my temporal frame to encompass the moment in which the categories of artisanal and industrial were produced—a process that emerged from the violence of colonial conquest and the establishment of the so-called “rule of law” in the federation of French West Africa. Second, as previewed above, I focus on the prolonged phase of mineral exploration that precedes the creation of a mine, or the extractive phase proper. Scholarship on extraction pivots around the social, environmental, and political effects of active mines or the “social experience of decline” “after the rush,” while largely ignoring mineral research.³⁸ In many zones of Africa, mineral exploration is a far more ubiquitous activity than extraction. Geologists can spend decades studying a zone before a mine is launched—if ever. Some villages in southeastern Senegal have hosted diverse geological camps for a combined total of sixty years. The research “phase” involves far more intimate and flexible relations with local populations than extraction. It is during this time that geologists study, map, and learn from local miners and prospectors. Corporate responsibility programs and public relations campaigns are insipient or ad-hoc, as is

³⁸ Ferguson, *Expectations of Modernity*; and Andrew Walsh, “After the Rush: Living with Uncertainty in a Malagasy Town,” *Africa* (2012) 82:2, 235-51.

organized opposition to mining enterprises.³⁹ A broader temporal frame reveals the “enclave” to be a short-lived illusion of isolation within a web of competitive labor, expertise, and research.

Pulling artisanal and industrial mining out of their analytical silos takes inspiration from a critique forwarded almost thirty years ago by political theorist Janet Roitman. Roitman pushed beyond conventional depictions of the “informal” and “formal” economy in Africa as separate “sectors” that actors “straddled.”⁴⁰ Rather “the formal and informal constitute an entire system of production, distribution, and exchange” rather than a “set of alternatives from which one chooses.”⁴¹ Roitman also pointed out that formal/ informal divides were an artifact of colonial law making, and that many so-called formal institutions were built upon complex connections to “informal” African institutions. Indeed, it was by building collaborations with African traders, political authorities, and religious leaders that European trading houses, indirect rule, and concessionary companies legitimated their enterprises and generated profits.⁴²

The post-colonial state also benefited from such “institutional bricolage” and the interpenetration of formal economic arrangements with those less visible and less regulated.⁴³

Keith Hart—who coined the term “informal economy” in 1973—recently argued that informality

³⁹ On an interesting exception to this rule from Central America, see Fultz (2015).

⁴⁰ Janet Roitman, “The Politics of Informal Markets in Sub-Saharan Africa,” *The Journal of Modern African Studies* (Dec. 1990) 28:4, 671-696, 685; *Fiscal Disobedience: An Anthropology of Economic Regulation in Central Africa* (Stanford, 2005). See also Kate Meagher and Ilda Lindell (eds.), “Engaging with African Informal Economies: Social Inclusion or Adverse Incorporation?” *African Studies Review*, (Dec. 2013) 56:3, 57-76, Catherine Dolan and Kate Roll, “Capital’s New Frontier: From ‘Unsuable Economies to Bottom-of-the-Pyramid Markets in Africa,” *African Studies Review*, (2013) 56:3, 123-146.

⁴¹ Janet Roitman, “The Politics of Informal Markets.”

⁴² Peter T. Bauer, *West African Trade* (Cambridge, 1954); A.G. Hopkins, *Economic History of West Africa* (Oxford, 1978); Odile Goerg, *Commerce et Colonisation en Guinée, 1850–1913* (Paris, 1986); Mbembe, *On the Postcolony*; Joseph Hellweg, *Hunting the Ethical State: The Benkadi Movement of Cote d’Ivoire* (Chicago, 2011).

⁴³ Jean-Francois Bayart, *The State in Africa: The Politics of the Belly* (Heinemann, 1993); Jane Guyer, *Marginal Gains: Monetary Transactions in Atlantic Africa* (Chicago, 2004); Janet MacGaffey, *The Real Economy of Zaire: An Anthropological Study* (Philadelphia, 1991); Janet MacGaffey and Rémy Bazenguissa-Ganga, *Congo–Paris: Transnational traders on the margins of the law* (Bloomington, 2000); Karen Tranberg Hansen and Mariken Vaa, “Introduction,” In *Informality Reconsidered: Perspectives from Urban Africa* (Uppsala, 2004).

proliferates at the core of the state and within the global financial system itself.⁴⁴ Stated otherwise, informality is not the exclusive purview of the peripheral, the unemployed, or those sequestered to racialized spaces—such as “artisanal” mines. In fact, there are few industries more notorious for ignoring international and national environmental laws and seeking out and actively producing zones of transnational “de-regulation” than the gold industry.⁴⁵

For example, while Kedougou’s *gendarmes* visit Bambo Cissokho’s court in search of local “bandits” they also police criminality within the gates of “formal” mines and exploration camps. Numerous prospectors have spent the night in Kedougou’s jail and many more have been fined for smuggling gold, environmental infractions, and undertaking research and exploitation activities after the expiration of their permits. Bambo’s court and Randgold’s exploration camp are part of a “continuum rather than a dichotomy between alternative institutional systems.”⁴⁶ The next section details how the exchange of expertise further blurs the boundaries between informal and formal bodies of skill and local and global knowledge on the Western Sahel.

⁴⁴ Mbembe, *On the Postcolony*; Ananya Roy, *Poverty Capital: Microfinance and the Making of Development* (London, 2010).

⁴⁵ Kirsch, *Mining Capitalism*; Ly, *Unearthing Conflict*; Golub, *Leviathans at the Gold Mine*.

⁴⁶ Roitman, “The Politics of Informal Markets,” 683.

Mining Capitalism and Mineral Knowledge in West Africa

“Regarding the situation from nearby, one rests convinced that Europeans profit from the previous work of natives by installing where natives have mined since time immemorial.”⁴⁷

Generally, before large-scale mines acquire concessions, artisanal and small-scale miners are working in the same area. These miners are the un-glorified pathfinders to many gold deposits, using local knowledge to pinpoint economic mineral reserves.”⁴⁸

The first quote is taken from a letter written in 1913 by a French colonial administrator in Guinea to his superiors in Conakry and Dakar. He writes about recent conflicts between “European” and “native” miners in his district. The second quote is taken from a manual published by the International Finance Corporation in 2009 offering “large-scale” mining companies advice on abetting conflicts with “artisanal” miners “working in the same area.” Written nearly a century apart, the vocabulary has shifted from one of race (native and European) to that of scale (artisanal and large-scale). Yet both accounts speak to the vagrant appropriation of African mineral discoveries and the violence of competitive extraction. Considering the rich literature generated on plant or “bio” prospecting in Africa and elsewhere in the global South, it is surprising that so few scholars and activists have examined debates over the “taking” of indigenous mineral prospecting.⁴⁹ This is all the more striking because the mining industry and post-colonial states have so openly mapped and studied indigenous gold miners, while simultaneously denigrating their extractive practices as wasteful, destructive, and criminal.

⁴⁷ Archives de la Direction des Mines et de la Géologie du Sénégal, Dakar, Orpaillage en Guinée, Letter from the Commandant of Siguiri to the Governor General of French Guinea, 6 Sep. 1913.

⁴⁸ International Finance Corporation’s Oil, Gas and Mining Sustainable Community Development Fund, and International Council on Mining & Metals, *Working together: how large-scale miners can engage with artisanal and small-scale miners* (2009), 69.

⁴⁹ Abena Dove Osseo-Asare, *Bitter Roots: The Search for Healing Plants in Africa* (Chicago, 2014); Judith A. Carney and Richard Rosomoff, *In the Shadow of Slavery: Africa’s Botanical Legacy in the Atlantic World* (Berkeley, 2009); Londa L. Schiebinger, *Plants and Empire: Colonial Bioprospecting in the Atlantic World* (Cambridge, 2004); For a comparative overview of post-colonial bioprospecting, see Cori Hayden, *When Nature Goes Public: The Making and Unmaking of Bioprospecting in Mexico* (Princeton, 2003).

This dissertation contributes to a growing field in the history of science concerned with how the co-option and study of indigenous or local knowledge by field scientists articulated with colonial and post-colonial property regimes that restricted the rights of indigenous groups to the plants, trees, and minerals upon which their knowledge was based. Over the past decade, historians of science have documented the contributions of non-western experts to technological, scientific, and medical developments typically credited to the West.⁵⁰ This scholarship takes part in a broader effort to destabilize the global conceits of Western science, locating scientific production in precise contexts of time and place.⁵¹ Scholars have challenged the notion that centers and peripheries of technological production align with metropolises and colonies and that scientific knowledge “diffused” from Europe to the non-Western world.⁵² These studies insert non-Western assistants, healers, miners, and farmers in the heart of global techno-scientific networks, documenting how knowledge is “co-produced” in hybrid “contact zones.”⁵³

A crucial question remains. Despite evidence that African environmental knowledge is incorporated into national and global forms of capital, why do scholars, policy makers, and journalists continue to classify this expertise as local and artisanal? I locate one answer in colonial and post-colonial legal frameworks that codified and bounded knowledge: permits, property regimes, and patents that truncated what were once fluid networks of exchange and

⁵⁰ For an overview, see Kapil Raj, *Relocating Modern Science: Circulation and the Construction of Knowledge in South Asia and Europe, 1650-1900* (Palgrave, 2007); Chambers, David Wade, and Richard Gillespie, “Locality in the History of Science: Colonial Science, Technoscience, and Indigenous Knowledge,” *Osiris* (2000) 221–40.

⁵¹ Steven Shapin, “Placing the View from Nowhere: Historical and Sociological Problems in the Location of Science” *Transactions of the Institute of British Geographers* 23, no. 1 (1998): 5–12; Jan Golinski, *Making Natural Knowledge: Constructivism and the History of Science* (Chicago, 1998).

⁵² Akhil Gupta, *Postcolonial Developments: Agriculture in the Making of Modern India* (Durham, 1998); Gyan Prakash, *Another Reason: Science and the Imagination of Modern India* (Princeton, 1999); Helen Tilley, *Africa as a Living Laboratory: Empire, Development, and the Problem of Scientific Knowledge, 1870-1950* (Chicago, 2011); Peter Redfield, *Space in the Tropics from Convicts to Rockets in French Guiana* (Berkeley, 2000)

⁵³ Cf. Pratt, *Imperial Eyes*, quoted in Raj, *Relocating Modern Science*.

collaboration.⁵⁴ This inquiry returns to central questions about property and access to ground rents in the reproduction of capitalism. According to Karl Marx, “primitive accumulation” was the original seizure of common or collective property rights and their transformation into private estates. The enclosure of commons created new criminals, including vagabonds and poachers. This “rural proletariat” was divorced from their “means of production” and forced to sell their labor power.⁵⁵ The buying and selling of labor distinguished “capitalist” production from local or more subsistence oriented economies.⁵⁶ While Marx understood “primitive” accumulation to be an original and singular event, geographer David Harvey has argued that accumulation is an ongoing process of the forcible appropriation of land and other natural resources in order to constitute new forms of private property and the expansion of capitalist markets.⁵⁷ Harvey calls this ongoing cycle “accumulation by dispossession,” which includes the enclosures, expulsions, and commodification(s) tied to phenomena as diverse as the slave trade, the production of the modern credit system, intellectual property rights, orchestrated currency devaluations, and the privatization of previously “common” goods such as water and human genetic resources. Recent conversions of state-owned mining enterprises into private ones and the “opening up” of new territories for mineral exploration and extraction are also crucial components of this process.

Environmental historians and anthropologists have nuanced this argument further, demonstrating how the materiality of nature impacts “primitive” accumulation and the

⁵⁴ Marilyn Strathern, “Cutting the Network,” *The Journal of the Royal Anthropological Institute*, 2:3 (Sep., 1996), 517- 535, 524.

⁵⁵ Karl Jacoby, *Crimes Against Nature: Squatters, Poachers, Thieves, and the Hidden History of American Conservation* (Berkeley, 2001); E.P. Thompson, *Whigs and Hunters: The Origins of the Black Act* (New York, 1975). In the African context, see Clapperton Mavhunga, *Transient Workspaces: Technologies of Everyday Innovation in Zimbabwe* (Cambridge, 2014); Roderick P. Neuman, *Imposing Wilderness: Struggles over Livelihood and Nature Preservation in Africa* (Berkeley, 1998); Thaddeus Sunseri, *Vilimani: Labor Migration and Rural Change in Early Colonial Tanzania* (Portsmouth, 2001);

⁵⁶ Cronon, *Nature’s Metropolis: Chicago and the Great West* (New York 1991).

⁵⁷ Harvey, *The New Imperialism*, 133, 141.

production of value. For Marx, and other classical economists who embraced Adam Smith's "labor theory of value," commodities acquired their worth "only because abstract human labor [is] objectified and materialized in it."⁵⁸ In sum, commodities are the product of social relations. The "fetish" of the commodity is its power to obscure its origins as derived from labor power in specific times and places. But the labor theory of value fails to explain the production of wealth derived directly from the bounty of nature. For example, in his majestic study of Chicago, environmental historian William Cronon argues that the city's success had "far less to do with human labor than with autonomous ecological processes" that people consumed, rather than produced, from the fertility of Illinois' prairie soils and Michigan's northern forests.⁵⁹ Fernando Coronil made a similar point in theorizing the relationship of oil rents to Venezuela's national development. The defining difference between the so-called "Third" and "First" world, he argued, was the "international division of nature." The "Third World" exported nature and relied on ground and forest rents.⁶⁰ While Marx assumed capital would absorb land and move on to other projects, this process proved far messier in practice.⁶¹ The state is a capitalist and a landlord. Land carries multi-vocal claims not easily subsumed by capitalist logics of exchange.⁶²

I draw on these insights to examine how transformations in property regimes—associated with colonialism, independence, and pro-market reforms in the extractive sector of the 1980s-2000s—impact who can derive benefits from the subsoil and to what effects. My contribution to this broader analysis of the modes of capitalist reproduction is to detail how "accumulation by

⁵⁸ Karl Marx, *Capital: A Critique of Political Economy* (New York, 1967).

⁵⁹ Cronon, *Nature's Metropolis*, 149-50.

⁶⁰ Fernando Coronil, *The Magical State: Nature, Money, and Modernity in Venezuela* (Chicago, 1997), 45-8.

⁶¹ David Harvey, *The New Imperialism* (New York, 2003).

⁶² *Ibid*, see also Cooper, *Africa since 1940*; Tsing, *Friction*; Stuart Kirsch, *Reverse Anthropology: indigenous analysis of social and environmental relations in New Guinea* (Stanford, 2006); Marilyn Strathern, *Property, Substance, and Effect: Anthropological Essays on Persons and Things* (London, 1999); Jacoby, *Crimes Against Nature*; Thompson, *Whigs and Hunters*.

dispossession” derives power and profit not only from the co-option of material resources but also of different forms of knowledge tied to these resources. Harvey admits that capitalism “entails appropriation and co-optation of pre-existing cultural and social achievements.”⁶³ Another example of this process was the colonial state’s co-option of local political authorities through “indirect rule.”⁶⁴ More recently anthropologists have argued that extractive industries co-opt the “discourses” of their critics by promoting the industry as responsible, transparent, and sustainable.⁶⁵ In a study of corporate social responsibility on South Africa’s “platinum belt,” anthropologist Dinah Rajak further reveals how mining companies broker partnerships with local businesses and NGOs. In so doing, corporations “tap into” or “incorporate” a wealth of “social expertise, political agency, and even financial resources.”⁶⁶ This dissertation documents how some mining corporations, and their sub-contractors, also “tap into” African mineral expertise.

The materiality of gold generates the unique condition of possibility for knowledge co-option and exchange.⁶⁷ The geological distribution of gold in much of Africa makes it highly accessible to a diverse range of “local” miners using locally forged handpicks, hallowed gourds, and occasionally fire to dislodge the metal from surrounding ores, sands, and silts. In West Africa, gold is distributed in a variety of deposits, which can be roughly classified as alluvial, elluvial and parent-rock deposits. Alluvial and elluvials are produced from the weathering of primary, or parent-rock deposits. Generally located near the surface or covered in no more than

⁶³ Harvey, *The New Imperialism*, 146.

⁶⁴ See Mahmood Mamdani, *Citizen and Subject: Contemporary Africa and the Legacy of Late Colonialism* (Princeton, NJ, 1996); Mbembe, *On the Postcolony*.

⁶⁵ For example, see Kirsch, *Mining Capitalism*; Ly, *Unearthing Conflict*.

⁶⁶ Dinah Rajak, *In Good Company: An Anatomy of Corporate Social Responsibility* (Stanford, 2011).

⁶⁷ On the importance of the “materiality” of specific minerals and metals for labor and political claims making, see Jessica Smith Rolston, “The Politics of the Pits and the Materiality of Mine Labor: Making Natural Resources in the American West,” *American Anthropologist* 115:4 (2013), 582–594; Timothy Mitchell, *Carbon Democracy: Political Power in the Age of Oil* (London, 2013); Michael Watts and Ed. Kashi, *Curse of the Black Gold: 50 Years of Oil in the Niger Delta* (Brooklyn, 2008); Gabrielle Hecht, *Being Nuclear: Africans and the Global Uranium Trade* (Cambridge, 2011).

thirty meters by more recent sedimentary deposits, gold in these deposits is “free.” This means that gold disaggregated from other minerals, quartz, and rock to which gold is frequently amalgamated in parent-rock deposits. Parent-rock deposits—which are the focus of much “industrial” open-pit gold mining in West Africa—can be located hundreds of meters underground. Due to considerable weathering from geological processes over the millennia, these parent rocks do occasionally protrude to the surface—rendering them accessible to the “traditional” tools of local miners. In sum, at many times and places, today and in the past, artisanal and industrial miners compete directly for access to the same gold deposits and at similar depths. We can thus expect questions of property and markets tied to gold to diverge from those of oil, which local populations cannot exploit, and coltan and sapphire, which have a shallow history of extraction and consumption in Africa.⁶⁸ By contrast, gold is deeply embedded in African cultural history, trade circuits and art forms. The next section introduces one region in which gold played a crucial role in regional trade and household production: Upper Gambia.

Mining the West African Sahel and Upper Gambia

This study moves between several scales of analysis. Anchored in a deeply historicized account of ‘artisanal’ gold mining in southeastern Senegal, it tracks policies, miners, traders, and expertise outward across the goldfields of the West African Sahel. While there is some debate about the origins of the word, Sahel is derived from the Arabic word for shore (*sahil*). Initially used to describe the northwestern edge of the Sahara, Europeans later applied the term to the band of arable land bordering the southern edge of the Sahara desert, stretching from the Atlantic

⁶⁸ A. Walsh, “‘Hot Money’ and Daring Consumption in a Northern Malagasy Sapphire-Mining Town”, *American Ethnologist* (2003) 30(2): 290–305; Jeffrey W. Mantz, “Improvisational Economies: Coltan Production in the Eastern Congo,” *Social Anthropology* (2008) 16, 1 34–50; Hecht, *Being Nuclear*.

coast of Mauritania and Senegal to the vicinity of Lake Chad in the east.⁶⁹ The Sahel was the historical gateway to West Africa from the desert to the north, home to great medieval empires and commercial towns, and the place where Islam was first adopted more than a thousand years ago.⁷⁰ By the late nineteenth century, the French and British controlled this region. Yet migratory, religious and kinship networks continued to link this zone across imperial boundaries.

In this dissertation, I focus on the goldfields of the Western Sahel that came under French rule in the nineteenth century: Bambuk, Bouré, and Lobi. Bambuk aligns with a geological formation today divided between southeastern Senegal and Western Mali. Bouré (also known as Bouré-Sieke) was the most important goldfield of the medieval kingdom of Mali. Today this geological belt is shared between northeastern Guinea and southwestern Mali. Lobi, located in contemporary Burkina Faso (known as Haute Volta by the French) was less central to colonial policies toward African miners and only features occasionally in my account. Few Europeans ventured into Lobi until the interwar years due to the staunch resistance of local populations to colonialism. Most residents of this historic gold mining region abandoned *orpaillage* under colonialism to pursue more lucrative labor migration to Cote d'Ivoire.⁷¹ Competition between French and West African miners was most intense in Bambuk and Bouré.

The British-controlled goldfields of northern and southern Ghana (the colonial Gold Coast) fall outside of the purview of this study. In the more distant past, Soninke traders—known formerly as Wangara—traveled between the goldfields of Ghana, Bouré, and Lobi. But movement across these sites was minimal during the nineteenth and twentieth centuries due to

⁶⁹ Ghislaine Lydon, *On Trans-Saharan Trails: Islamic Law, Trade Networks and Cross-Cultural Exchange in Nineteenth-Century Western Africa* (Cambridge, 2009).

⁷⁰ Gokee, *Assembling the Village*; McIntosh, *Ancient Middle Niger*.

⁷¹ The process of French conquest and consolidation in inland West Africa began in the middle decades of the nineteenth century with expansion up the Senegal River. It did not end until the 1920s, when French forces finally established control over the remotest corners of the Sahara Desert.

regional upheaval and restrictions placed on trans-imperial movement by colonial states.⁷² The proximity of Ghana’s goldfields to the southern coastline made them far more accessible to European traders and influence. By the late fifteenth century, Portuguese and Dutch traders had established forts at “El Mina” to trade for gold—and shortly thereafter slaves.⁷³ By the 1870s, the British had launched a successful mining industry in the southern Gold Coast.⁷⁴ By contrast, despite occasional incursions, Bambuk, Bouré and Lobi remained far outside of European control until conquest. French presence was thin on the ground in the vast auriferous zones of the “interior,” distant from the central arteries of colonial export economies. For this reason, indigenous institutions retained remarkable control over mining in colonial French West Africa.

This dissertation joins a growing number of scholars who approach the Sahel as a historical unit of analysis bound through migration and interconnection. Recently historians and anthropologists have demonstrated how trade diasporas, race formation, Qur’anic schooling and Muslim reform movements have linked disparate groups and places across the Sahel.⁷⁵ This dissertation shows how indigenous institutions tied to gold extraction—particularly Mande “traditionalist” ritual authorities—have traveled with migrant miners across vast expanses of the West African Sahel. This contrasts with a historiography on “traditionalist” religions in West

⁷² Ivor Wilks, “Wangara, Akan and Portuguese in the Fifteenth and Sixteenth Centuries. I. The Matter of Bitu,” *Journal of African History* 23: 3 (1982): 333-349; Wilks, *Forests of Gold: Essays on the Akan and the Kingdom of Asante* (Athens, 1993).

⁷³ Raymond E. Dumett, *El Dorado in West Africa: The Gold Mining Frontier, African Labor, and Colonial Capitalism in the Gold Coast, 1875-1900* (Athens, 1998). See also the opening chapters of Robert Harms, *The Diligent: A Voyage Through the Worlds of the Slave Trade* (New York, 2002).

⁷⁴ Dumett, *El Dorado in West Africa*:

⁷⁵ Sean Hanretta, *Islam and Social Change in French West Africa: History of an Emancipatory Community* (Cambridge, 2009), 6; Bruce Hall, *A History of Race in Muslim West Africa, 1600-1960* (Cambridge, 2011); Rudolph Ware III, *The Walking Qur’an: Islamic Education, Embodied Knowledge, and History in West Africa* (Chapel Hill, 2014); Judith Scheele, *Smugglers and Saints of the Sahara: Regional Connectivity in the Twentieth Century* (Cambridge, 2015). See also Gregory Mann, *From Empires to NGOs on the West African Sahel: The Road to Nongovernmentality* (Cambridge 2015).

Africa that are highly local in their geographic purview.⁷⁶ While there are a number of local specificities concerning the ritual protocols of extraction, a remarkably uniform set of prohibitions and notions of use rights govern extraction across Bambuk, Bouré and Lobi.

While I attend to broader histories of extraction on the West African Sahel, the primary historical setting I explore is the sub-region of Upper Gambia. This is the land stretching between the headwaters of the Faleme and Gambia Rivers. Over the past 150 years, this region has gone by many names and fallen under a variety of administrative jurisdictions of the French colonial state and of independent Senegal. In this dissertation, I reference the region by the name used by contemporaries during the time under discussion: Upper Gambia (early colonial period), Senegal Oriental (late colonial period and independence-era), and the department and region of Kedougou.⁷⁷ The remainder of this section offers a brief political biography of this region. This is crucial for understanding the unique relationship of Kedougou to the colonial and post-colonial state and to the migrants from Guinea, Mali, and Burkina, who, since the late 1990s, have swollen the region's artisanal gold mining households.

Upper Gambia, A Natural Refuge

Before conquest, Upper Gambia was home to highly decentralized polities. There were two ethnic majorities in the zone: Mande, speakers of Maninkakan concentrated in the northern savannah plains near the border of contemporary Mali and Fulbe, speakers of Fulfulde, concentrated in the south near the border of contemporary Guinea. Tenda (Bassari, Bedik, and

⁷⁶ Robert M. Baum, *Shrines of the Slave Trade: Diola Religion and Society in Pre-colonial Senegambia* (New York, 1999); Robin Horton, "Stateless Societies in the History of West Africa." In *History of West Africa I*, edited by J.F.A. Ajayi and Michael Crowder, (New York: 1972), 78–119; Walter Hawthorne, *Planting Rice and Harvesting Slaves: Transformations along the Guinea-Bissau Coast, 1400–1900* (Portsmouth, N.H, 2003); Rosalind Shaw, *Memories of the Slave Trade: Ritual and the Historical Imagination in Sierra Leone* (Chicago, 2002).

⁷⁷ Many people still refer to the administrative units of Kedougou and Tambacound as "Senegal Oriental."

Coniagui) villages are located throughout the south and west, Djallonke to the southwest, and Diahanke along the Gambia River and among Mande villages to the east. Beginning in the second half of the nineteenth century, French travelers and military officers referred to this territory as Upper Gambia (*Haute Gambie*). After signing treaties with polities in this region, the French incorporated the provinces of Niokholo, Dentilia, Sirimana, Bademba, Bafe-Satadougou, Beledougou and Badon into the *cercle* of Upper Gambia.⁷⁸ The village of Kedougou, a Diahanke trading post along the Gambia River, became the chief post of the *cercle*.

In 1919, Upper Gambia was joined with the *cercle* of Niani-Ouli to the north to form the single *cercle* of Tambacounda—the name of the contemporary crossroads town located 250 miles north of Kedougou. In 1924, Upper Gambia was reconstituted as its own *cercle*. Around this time, the colonial administration began to refer to the *cercles* of Upper Gambia, Niani-Ouli and Bakel as “Senegal Oriental” or the “Oriental Provinces.” At independence in 1960, the Senegalese state replaced colonial *cercles* with larger regional units to facilitate economic planning. Kedougou was reclassified as a department of the region of Senegal Oriental, later renamed Tambacounda. In 2008 Kedougou was named the fourteenth official region of Senegal.

Upper Gambia is the most geographically and perhaps ethnically distinctive region within contemporary Senegal. Most of Senegal is less than 300 feet above sea level and is covered by sedimentary deposits. The landscape is flat and monotonous, marked with few changes in elevation or natural landmarks and studded with sparse grasses and woody shrubs. By contrast, Senegal Oriental occupies an ancient geological formation that stretches across much of West Africa. Iron-laden volcanic rock covers this terrain. Tree coverage thickens to the south,

⁷⁸ The French “pacified” Upper Gambia region after chasing the anti-French Diahanke cleric and state-builder, Mamadou Lamine, where he was seeking refuge in Diahanke villages along the Senegal River. At the time of conquest, the estimated population of Dantila was 8000; Niokholo, 7000; Beledougou, 1200; Sirimana, 2400; Badon, 1300. The French observed that these polities were independent from each other.

culminating in the dense gallery forests that line the Gambia River and its tributaries. Prior to French conquest, Upper Gambia was a political borderland situated just beyond the reach of the Fulbe Muslim polities of Fouta Djallon to the south and Bundu to the northeast. With its rocky escarpments, thick bamboo forests, and swollen rainy-season maze of rivers, Upper Gambia was a “natural refuge” for ethnic minorities—namely those who refused conversion to Islam—during the intensive slaving and raiding of the seventeenth through nineteenth centuries in Western Africa. The foothills of the Fouta Djallon range hid fertile valleys below and created natural fortifications and lookout points. Rapids and waterfalls on the Gambia River and near the source of the Faleme River prevent access from the coast by water to Upper Gambia. The distinctive terrain created a natural buffer from interlopers, making the region ideal for those on the run. Upper Gambia was also a trading crossroads. Since at least the fifteenth century, trade caravans originating from Mauritania, Guinea, Mali, and Senegal convened at the headwaters of the Gambia to exchange kola nuts, hides, wax, salt, cloth, gold, and slaves. To the arid savannah in the northeast, the region was tied to French trading posts on the Senegal and to the desert side trade in salt and gold. To the east, traders accessed the Gambia River, a stronghold of British traders and their African intermediaries since the 1600s.

As far back as written records and oral histories will transport us, Upper Gambia was rich in land and resources, but poor in people. Similar to many regions of pre-colonial Africa, labor rather than land was the limiting factor in agricultural production, which is why many polities measured “wealth in people.”⁷⁹ This is likely a legacy of environmental and political factors. For one, much of the zone was covered in laterite rock—created from ancient volcanic activity—that is uncultivable, but contains iron and gold deposits. As a result, there were relatively few fertile

⁷⁹ On this hypothesis, see Jane Guyer and Samuel Belinga. “Wealth in People as Wealth in Knowledge: Accumulation and Composition in Equatorial Africa,” *Journal of African History* 36: 1 (1995): 91–120.

valleys and river-ways that could sustain large populations. Further, it is clear that the men and women who settled Upper Gambia since at least the seventeenth century, sought autonomy and resisted enslavement. As a result, they established small settlements, protected from incursions by the region's natural topography and rarely allied with other villages. Generations of colonial and post-colonial administrators would describe this region as "under-populated." It was also geographically marginal to centers of emergent colonial powers on the coast and in regions more accessible by rails and roads for the evacuation of cash crops. As a result, Kedougou's legacy of "under-population" was reinforced by the requisition of labor from this peripheral zone to enhance the agricultural productivity of the central-west peanut basin of Senegal and the coast, which at independence was home to 1/3 of Senegal's population.

Upheaval, population movements, and long-distance trade made Upper Gambia home to remarkably diverse ethnic, religious, and linguistic groups. It is common for historians of Francophone West Africa to write about single ethnic or linguistic groups, such as the Wolof, Bambara, or Fulbe. This tendency is particularly strong in the historiography of Senegal, which has focused on ethnic Wolof and, to a lesser extent, Hal-Pulaar (Fulani) speakers on the Senegal River and the Sereer of Siin-Saloum. These ready-made cultural zones do not apply to Upper Gambia. The landscape of contemporary Kedougou is a mosaic of Diahanke, Mande, Fulfulde, Diallonke, and Tenda villages—with Wolof largely focused in administrative or trade centers. Ethnic and religious mixing has long been the norm and remains the case today.

Upper Gambia's distinctive ethno-linguistic composition shaped French administration of the region. On one hand, the French took a protectionist stance toward ethnic minorities who populated portions of Upper Gambia. Colonial administrators described these groups as quintessential good "natives" and as victims devastated by centuries of pillage by Muslim

jihadists, who were the primary adversaries of the French military. At the same time, the French recognized that the pre-colonial provinces of Upper Gambia had actively resisted governance by any centralized administration, seeding concern that the region could be politically recalcitrant. These concerns motivated the French to assign Amadou Ndiaye, an ethnic Wolof from coastal Senegal, to govern the “oriental provinces” in 1908. In contrast, “native chiefs,” selected under the pretense of respecting “native customs,” governed in coastal regions of Senegal. By appointing Ndiaye as canton chief of Senegal Oriental, the French hoped to create order among divided polities.⁸⁰ This marked the beginning of a long-standing practice of the colonial and post-colonial state: to assign coastal Senegalese to Kedougou’s administration.⁸¹

Under French colonialism, Kedougou earned a reputation as a place of punishment and banishment for bureaucrats who were non-conformists or fell into disfavor with the Dakar-based administration. The French considered Upper Gambia isolated and removed from “civilization.” In 1943, for example, the Commandant de Kedougou said the *cercle* had nothing in common with “Senegal properly speaking.” The *cercle* is “isolated” (*enclavée*) and “lives entirely upon itself.”⁸² As a geologist working in Kedougou commented in 1944, “the *cercle* of Upper Gambia is barely part of Senegal.”⁸³ Kedougou’s reputation as a backwater and an undesirable post for bureaucrats continued at independence. In 1962, Mamadou Dia, who served as President Leopold Sedar Senghor’s Prime Minister, was imprisoned in Kedougou until the mid-1970s

⁸⁰ Ndiaye, whose father worked for the French administration, was educated at the *Ecole des Fils des Chefs* (formerly the *Ecole des Otages*) based in St. Louis, Senegal.

⁸¹ This legacy became the focus of protests against the Senegalese state in Kedougou in 2008 (Chapter 7).

⁸² Archives Nationales du Senegal, (ANS), 2G 43-70, “Rapport Politique Annuel,” Feb. 2, 1943.

⁸³ Archives Nationales de la Guinee (ANG), 3 Q 10 Arnaud, Directeur des Mines de l’AOF, ‘Rapport sur l’organisation administrative, technique, et coopérative d’orpaillage’, Dakar, 11 Sep. 1944.

under accusations of plotting a military coup.⁸⁴ Until recently an assignment to Kedougou for teachers and bureaucrats was considered a demotion.

Senegal Orientale, A Natural Reserve

After independence, Senegal Oriental's relative isolation, combined with a series of government policies aimed at making the region a "natural reserve" for Senegal, earned it a reputation as a bastion of ethnic exoticism and "traditional modes of life" within Senegal. For one, by mid-century, Senegal Oriental was one of the few regions that retained large fauna and where residents still relied on hunting and gathering of wild fruits and plants. Leopold Sedar Senghor reinforced the "natural vocation" of the zone by vastly expanding the boundaries of the Niokholo Koba Park. Initially created in 1954 by the colonial park service. Niokholo became the largest natural reserve in Senegal and Senghor invested heavily in building up a tourist infrastructure for the region based on visits to the park and to the villages of "traditional" ethnic groups—namely the Tenda.⁸⁵ Like many independence-era parks, residents of Senegal Oriental greeted the park's expansion with ambivalence. From 1969 to 1975, state authorities forcibly resettled dozens of villages from what became the interior of the new regions of the park.⁸⁶

⁸⁴ Senghor accused Dia of planning a military coup. On the events leading up to Dia's imprisonment, see William Mbaye Ousmane, *President Dia* (Films Mame Yande, 2012); and the memoir by Mamadou Dia, *Memoirs d'un militant du Tiers Monde: Si memoire ne ment* (Paris: PubliSud, 1985).

⁸⁵ See the fascinating article by first Senegalese governor of Senegal Oriental, Ibrahima Niang, "Developpement du Tourisme dans la Region du Senegal Oriental," *Cahiers du Centre de recherches anthropologiques*, XII, 2:1-2 (1967), 174-6; and Andre-Roger Dupuy, *Soldat des Bêtes Soldat des Bêtes: Vingt ans de lutte pour la défense de la faune africaine* (Rennes, 1991). July 1950, total hunting reserve of 175,000 hectares (reserve totale de chasse), see Roure 1956:94. These classified forests were called the "Zone d'Interet Cynergetique de la Faleme." Niokholo Koba Park was established by the colonial state in 1945, preceded by the creation of several game reserve—important hunting grounds for French administrators and some hunters since the interwar period.

⁸⁶ In particular, see the fascinating article by first Senegalese governor of Senegal Oriental, Ibrahima Niang, "Developpement du Tourisme dans la Region du Senegal Oriental," *Cahiers du Centre de recherches anthropologiques*, XII, 2:1-2 (1967), 174-6; Andre-Roger Dupuy, *Soldat des Bêtes Soldat des Bêtes: Vingt ans de lutte pour la défense de la faune africaine* (Rennes, 1991);

Expanding the boundary of the park to reach the border of Guinea eliminated the possibility of building infrastructures linking Kedougou to the west. Kedougou was now only accessible from the north via Tambacounda, and this road was not paved until 1996. In short, the expansion of the park intensified Kedougou's isolation from "Senegal properly called."

In 1960, the year of Senegal's independence from France, Senghor sent a commission to study the unique problems of Kedougou. They reported that many residents of Kedougou did not consider themselves part of "Senegal."⁸⁷ Seasonal *navetane* migration was the first encounter for many residents with food, music, and languages widely considered "Senegalese." Subsistence portfolios also set the region apart from the rest of the country. In Kedougou, people of all ethnic backgrounds relied heavily on hunting and gathering of plants long after most Senegalese eliminated these activities in favor of agriculture and wage labor. While most households in Senegal heavily consumed rice and peanuts in the 1960s, Kedougou's staples consisted of sorghum, fonio, and millet accompanied by sauces of leaves harvested from the forest. In 1972, in an effort to diversify the Senegalese economy beyond its focus on groundnuts, the state introduced cotton farming to Senegal Oriental. The Societe de Developpement des Fibres Textiles (SODEFITEX), in which the state was a primary investor, extended seeds, inputs and technical assistance to rural farmers. Cotton culture met with initial success in Kedougou and quickly surpassed peanut as the zone's most important export crop. Despite this, Kedougou's contribution to Senegal's national brut production remained less than 3%. Revenues for cotton farmers began to decline in the 1990s as the price for cotton fell and new demands for "fair trade" and quality cotton were difficult to meet in the region due to climactic conditions.

⁸⁷ As quoted in ANS, Documentation, Cheikh Faty Faye, "Premieres Journees Culturelles de Kedougou," Feb. 13-15, 1992.

Kedougou's relative isolation, its status as a place of punishment for bureaucrats, and the fact that it hosted some of the country's smallest ethnic groups, earned it a reputation among residents of maritime Senegal as a population that was close to nature, exotic, and a bastion of traditionalism within a modern African state. Consider a 1978 feature on Kedougou in *Le Soleil*:

[...] those who would still like to see Africa of yesterday, the truly exotic and not prefabricated Africa, can come search for it here! We have long spoken of modernization, the invasion of the artificial or of western civilization, in spite of this in Kedougou, the true Africa of time immemorial has survived, one does not know by what miracle.⁸⁸

More than two decades later, a feature on Kedougou in *Walfirji*, Senegal's most popular private newspaper, relied on similar tropes: "The department of Kedougou suffers from its marginalization, a profound isolation that does not date to today." The journalist describes "mistrust" between the "population and authorities," a "feeling of exclusion," because residents only see "political representatives at the time of elections." "The residents of the department are "Senegalese living as Guineans," the article continues. "They eat Guinean and do not even know the music of Senegal because they listen to the radio of Guinea or Mali."⁸⁹

These popular journalistic accounts evidence a tension running throughout the historic relationship of the highly centralized Senegalese state to its "oriental provinces." Kedougou is primitive, naive, isolated, and poor—but also politically reticent and distrustful. These sentiments endure and are increasingly the subject of public debate and protests in the context of the region's unfolding gold boom (Chapter 7). Politicians have long promised to reverse Kedougou's legacy of marginalization. In 1987, Abdou Diouf, Senegal's second president (1981-2000), spent four days touring what was then the department of Kedougou. In a speech copied in full in *Le Soleil*, Diouf declared his intention to "definitely de-isolate the department of Kedougou" and end the department's reputation as a "purgatory for the Senegalese

⁸⁸ Archives du Soleil (AS), "Un Reportage de Moukhtar Diop," *Le Soleil*, Oct. 23, 1978.

⁸⁹ *Walfirji*, January 5, 1999

administration.”⁹⁰ During an inter-ministerial council meeting in Kedougou in April 2014, the current president, Macky Sall, deployed strikingly similar language. He hoped the mineral industry would change Kedougou’s reputation as a place of banishment for bureaucrats.

Unfortunately, we can say today that Kedougou was, in the past, a region abandoned by Senegal. It has been faced with a problem of isolation in two respects: an interior isolation and isolation toward the exterior.⁹¹

In sum, since its circumscription as an administrative *cercle* by the French military, Upper Gambia—also known as Senegal Oriental and Kedougou—has been described as isolated, impoverished, and far removed from the material and cultural life of “Senegal.” However, it is this very isolation that has made Kedougou a refuge for individuals, ethnic groups, and polities that desired political autonomy or strategic removal from centralized authorities. Moreover, its distinctive geopolitical position in the context of Senegal has made Kedougou a “natural” reserve for the late colonial and post-colonial state. The concept of reserve is crucial here as it suggests the setting aside of a territory or material resources for future use. For several generations, politicians and government officials have told residents of Kedougou that their minerals, flora, and fauna will one day bring them out of isolation and into prosperity. These promises shaped expectations for the influx of mining capital in Kedougou in the 1990s and early 2000s.

Senegal’s Mining Industry

Kedougou is the only region in Senegal where local populations have historically mined for gold during the dry season—a legacy of the region’s distinctive geology. “Artisanal” gold mining fit into the broader logic of subsistence portfolios in Kedougou, where hunting and harvesting plants from the bush supplemented rainy-season agriculture. For the past several

⁹⁰ *Le Soleil*, “Les Promesses Seront Tenues,” March 4, 1987

⁹¹ I translated this quote from an audio recording of a speech given by Sall in Kedougou, April 2014.

centuries ethnic Mande have dominated gold mining in the region. During the colonial period, the “Compagnie des Mines de Faleme-Gambie” was the only European mining firm based in Kedougou, and most of their personnel transited through Bamako, Mali. Established in 1911 on the Faleme River the “Compagnie” operated two or three boat dredges on the Faleme River that agitated and filtered gold dust from riverbed silts. In many years gold purchased from African miners constituted the bulk of the firm’s “production. Geologists working for the colonial and post-colonial state prospected the region for gold, iron, diamonds, and other metals. From 1945 to 1962 no less than six institutions conducted mineral exploration in Senegal Oriental.⁹² However, none of the deposits discovered by these missions were exploited in the short-term, with the exception of a Senegalese firm that briefly mined gold in Kedougou in the 1990s.

Rather, phosphate mining in the region of Thies and Dakar, located less than 100 kilometers from Dakar’s deep-sea port, has dominated Senegal’s mineral industry since independence. Senegal’s first phosphate mine, Compagnie Senegalaise des Phosphates de Taiba (ISPT), was opened in 1958 under the French administration. In an effort to create a value added industry to phosphate mining, the Senegalese state opened the Industrie Chimiques du Senegal (ICS) in 1974, which transformed phosphate into fertilizers, phosphoric acid, and phyto-sanitary products for agriculture. These industries proved crucial to the Senegalese economy when prices for peanuts plummeted severely in the 1980s. ISPT and ICS remain important employers.⁹³

It was not until the 1990s that the attention of the state would return to the prospect of making southeastern Senegal into a mining frontier. Rising gold prices, technological changes in

⁹² Most of these institutions were French parastatals, with the exception of the United Nations Organization and cooperative research carried out by the USSR. On these missions see Chapter 4 and Jean Pierre Bassot, “Compilation des études et prospection exécutées depuis 1945 sur les terrains anciens du Senegal Oriental.” Paris: Editions Bureau de Recherche Géologique et Minière, 1964.

⁹³ ICS alone employs roughly 2,500 people, largely from the regions of Thies and Dakar. The mining of construction materials, including cement, is also important in these regions.

the global mining industry, and the depletion of more accessible deposits of iron, gold, and rare earth metals elsewhere in the world also drew the attention of global investors to Kedougou.

Today the Senegalese state has staked the future of its mineral industry in this zone.

Sources and Methods

This project draws on archival materials assembled in France, Mali, Guinea, and Senegal across the span of four years, over two hundred oral history interviews, and a combined total of fifteen months of ethnographic research carried out in Senegal in 2013 and 2014. The questions driving this research project—and the social networks that sustained it—emerge from my decade-long engagement with Kedougou, Senegal and years of travel to Mali and Guinea. I first traveled to Kedougou as a Peace Corps volunteer in 2006. I worked in sustainable and urban agriculture, assigned for one year to a rural Fulbe village on the border of Guinea, and one year to the regional capital of Kedougou. While in Kedougou, a federation of vegetable gardeners solicited me to broker with several gold mining exploration camps in order to secure an outlet for their seasonal vegetable production. I accompanied farmers to meetings with mining camp managers and caterers. Few of the farmers were literate, and as the catering services of the larger camps complied with international food standards for expatriate workers, it was a formidable challenge to establish a working market relationship. Two volunteers who succeeded me in Kedougou continued this work, but the federation eventually disbanded over conflicts surrounding the vegetable sales to mining companies. This project materialized the broader conflicts accompanying the gold boom in Kedougou: initial optimism and expanding market opportunities followed by disappointment and discord. When I returned to Kedougou in 2013 for long-term field research most of the farmers who once constituted the federation had no trouble

finding outlets for their produce. They now sold bushels of cabbage, carrots, tomatoes, and grain to “clando” (*clandestine*) trucks that furnished “artisanal” mines located deep within the bush.

When I first left Senegal in 2008, the question animating journalistic, activist, and scholarly coverage of gold mining was how—if at all—local populations were benefiting from the expansion of corporate mineral investments in Kedougou.⁹⁴ This “question” exploded in December 2008, when residents of Kedougou protested the lack of local employment in the mines and the state’s opaque management of funds earmarked for regional development.

Gendarmes and military forces violently repressed the protest, killing a young man. Over twenty men and women, most under the age of 25, were jailed in the aftermath of the protest. In 2013, a mere five years later, the more pressing concern of regional households was how to capture the market opportunities tied to local gold mining, which had expanded rapidly in the intervening years. In 2014 during the final months of my fieldwork, the Senegalese government put a temporary end to “artisanal” mining. At the urging of the corporate mining lobby, Senegal’s president, Macky Sall, ordered the army to bulldoze the region’s artisanal mines.

As I discovered during field research, artisanal and industrial extraction—or mining by Africans and Euro-Americans—had a deep regional history. While Sabodala was considered the region’s first large-scale gold mine, I learned that dozens of French, Russian, Swiss, Australian and South African mineral prospectors had worked in the zone since the 1910s. During the same time period, French, and later Senegalese, geologists, had collaborated with expert local gold miners to chart the region’s prospective gold and iron deposits. My access to the former archive

⁹⁴ Mouhamadou Lamine Diallo, “Mine d’or et développement durable: Quelques réflexions sur le site de Sabodala (Sénégal oriental),” *EchoGeo* 8 (2009), Fatimata Bineta Mbodj, “Boom aurifère a l’est du Sénégal, l’ouest du Mali et au nord-est de la Guinée: mutations socio-économiques et spatiales d’anciennes marges géographiques et économiques,” (Thèse de doctorat de géographie, Université Gaston Berger, St. Louis, Sénégal (2011); Martin Williams, “The Gold Standard of Governance: Mining, Decentralization, and State Power in Africa,” *Politique Africaine* 17 (2010), 127-148.

of the Service of Mines and Geology of French West Africa—today lodged at the University of Cheikh Anta Diop in Dakar—revealed such intimate collaboration between African and European miners, prospectors, and geologists to be widespread across the federation. Even more surprising was that early European mines had superimposed directly on African gold workings. In the not too distant past, “industrial” miners pirated “artisanal” workings.

During my initial field research in Kedougou, I lived in a village historically engaged in a combination of rainy-season farming and dry-season mining, where I participated in the daily rhythm of village life. I accompanied men and women as they farmed and, during the season, I took up residence in the compound of Bambo Cissokho, the chief of the region’s most celebrated “artisanal” mining sites. During the day, I traveled with the *tombolman*, the village’s private police force, as they patrolled the different active mining sites under the customary jurisdiction of Tinkoto. I observed Bambo Cissokho as he presided over “court” each evening, airing grievances from merchants, long-term residents, and migrant miners. Fulfulde and Maninkakan were the primary languages spoken in the villages I frequented. I learned Fulfulde as a Peace Corps volunteer and studied Maninkakan for six years. While traveling, I stayed in the compound of village chiefs. During the latter half of my field research, I moved back to the town of Kedougou, where I interviewed government officials, politicians, and traveled to meetings held between different mining companies, NGOs, and state officials. Throughout my research, I visited corporate mining camps and conducted interviews with camp managers and geologists.

I spent roughly three months in Dakar conducting documentary research at the Archives Nationales, the Institut Fondamental d’Afrique Noire, and the colonial and post-colonial documentary collection of the Direction des Mines et de la Géologie. I also collected archival materials for this project during earlier trips to Guinea and France. In Dakar I conducted

interviews with mining company representatives, geologists, and several businessmen involved in Senegal's mining industry in Dakar. In total, I conducted over 230 interviews (and recorded roughly 180) in French, Fulfulde, Maninkankan and occasionally English. While in Kedougou I relied heavily on the assistance of two field researchers to translate and conduct interviews in Maninkankan. Falaye Danfakha accompanied me throughout the final eight months of my field research. An incredible intellectual and formidable teacher, much of what I learned and my access to male dominated worlds were possible because of Falaye and his extended family. On occasion, I collaborated with Pape Dayo Diallo and Madi Kamara of Kedougou to conduct interviews in particular villages. Falaye and I transcribed most of the interviews together. As much as possible, I worked through the thick web of friendships and professional partnerships I established during my time as a Peace Corps volunteer in Kedougou. While in Kedougou town I lived with a family I befriended as a volunteer—the household of Ahmadou Wuri Diallo. I benefited immensely from their highly respected status within the community. They allowed me to host some interviews within their home. The Diallo's provided me with a degree of security and flexibility unimaginable under most conditions as a woman researcher in a mining zone.

Another notable element of my research—common perhaps for researchers in mining zones—was the frequency with which I was accused of prospecting for gold or simply conducting research for profit. These accusations are partially accurate, although I was prospecting for knowledge about the past and personal experience rather than minerals. In mineral zones there is strong sense that outsiders are stealing not only natural resources, but also knowledge. In time this emerged as a core theme of my work as I began to see these suspicions as evidence of the political economy of knowledge in a place that is so thoroughly researched by the state, private prospectors, and different groups of West African miners.

Finally, it is worth stating that a far different story would have emerged from this dissertation if my primary ethnographic field site had been Mali or Guinea. These countries host “artisanal” mining populations far larger than those of southeastern Senegal. At one stage, I intended to focus my work on Guinea. This proved untenable due to security reasons. Over time, I came to appreciate that Kedougou’s distinctive ethnic, linguistic, and religious diversity—and its marginal relationship to the Senegalese economy and state—brought into sharp relief tensions around extraction, ethnic affiliation, and state formation. Situated on the edge of West Africa’s “emerging gold belt” allowed me to test some of the assumptions in colonial and post-colonial literature about the relationship of gold mining to Mande culture in particular. One concrete result of this positioning is that this study features the divergent perspectives of ethnic and linguistic Mande, Fulbe, Tenda, Djallonke, and Diahanke over rights to the subsoil.

Chapter Outlines

This dissertation proceeds in three parts. It begins and ends on the goldfields of Upper Gambia—which later became Senegal Oriental and then the region of Kedougou. Middle sections broaden in geographic scope to encompass developments on the goldfields of Guinea, Mali, and Senegal. Part I consists of this introduction and Chapter 1, which situates this account in the goldfields of the Upper Gambia on the eve of French colonial conquest in the 1880s. Mande ritual authorities oversaw extraction in Upper Gambia, as they did across much of the Western Sahel. I argue that gold mining was a form of ritual labor grounded in dangerous exchanges with spirits, mystical serpents and goblins—widely recognized as the true proprietors of the sub-surface. Understanding the pre-colonial ritual logics of the goldfields is crucial to

understanding what African miners lost, and fought to regain, when they entered into competition with Europeans for the legal sanction to mine gold within sacred spirit territories.

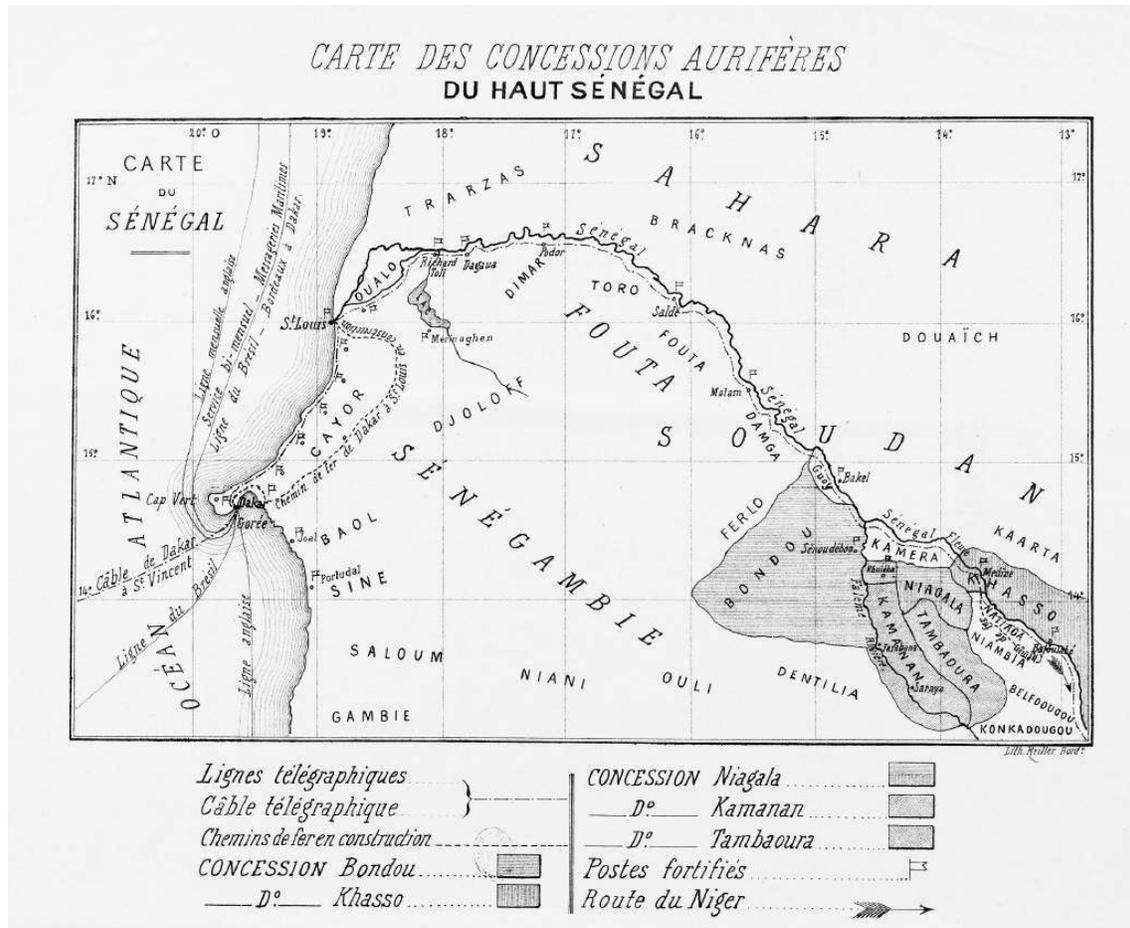
Part II broadens its lens to track the migrations of African miners and colonial regulations governing extraction by African subjects across the colonial federation of French West Africa (AOF) from conquest in the 1890s until the dissolution of empire in the late 1950s. Chapter 2 traces the origins of the regulatory category of the ‘artisanal’ miner—*orpailleur* in French—to its origins as a ‘customary rights’ clause of colonial mineral codes. Customary rights allocated unstable usufruct rights to rural Africans (colonial subjects), while European miners (colonial citizens) accessed private property titles and concessionary permits. Colonial officials argued that customary rights mapped onto differences in the techniques, tools, and capacities of African and European miners. But this justification failed to hold up in practice. At its origins, the *orpailleur* was a racial category and not a straightforward “technical” classification. While French colonial administrators were making West Africans into “artisanal” miners, Chapter 3 argues that colonial geologists benefited from the expansion of indigenous mining by systematically mapping “native” gold discoveries and studying the prospecting techniques of African miners. While AOF’s “industrial” mining sector was tepid, the Service of Geology hoped mineral mapping would attract European mining investors to West Africa in the future.

Part III returns to the goldfields of Upper Gambia. Following the transformation of goldfields into national spaces of extraction at independence, Chapter 4 documents how the Senegalese state transformed Senegal Oriental into a mineral reserve by recruiting cooperative technical assistance from France, the USSR, and the United Nations to survey the region’s mineral resources. Similar to the colonial era, independence-era mineral exploration relied heavily on the knowledge and skilled labor of multi-generational gold miners in Senegal.

Chapter 5 maps the emergence of Kedougou into a competitive gold mining frontier beginning in the late 1990s. Through several case studies, I argue that artisanal miners compete with corporate geologists to discover gold deposits, the legal sanction to mine, and the patronage of diverse Senegalese authorities to protect subterranean rights. Corporations accuse artisanal gold miners of pirating their gold discoveries, while residents argue that generations of expatriate prospectors have profited from local gold discoveries. Chapter 6 explores the other face of competitive extraction: debates over resource rights as they unfold among different clans and ethno-religious groups in Kedougou. Profound social anxieties surround the transition of artisanal gold mining from the nearly exclusive domain of Mande ritual “traditionalists” to the primary economic activity of a host of ethno-linguistic groups. Debates over the moral status of gold wealth, I argue, reveal broader tensions over where different ethno-linguistic groups are perceived to “sit” on a spatiotemporal spectrum between traditionalism and Islam in contemporary Kedougou. Finally, Chapter 7 documents the social and economic afterlives of a protest-turned-riot organized in Kedougou in December 2008. Protestors accused regional government officials of “eating” funds alimanted by mining companies for regional development and for passing over local residents for unskilled employment in the mines in favor of youth from elsewhere in Senegal. After Senegalese armed forces violently repressed the protest, Kedougou’s diaspora in Dakar, France, and Spain internationalized the region’s grievances. By allying with international human rights and environmental organizations, they pressured the Senegalese state to free jailed protestors. This protest is the latest chapter in a centennial debate over the rights of agrarian communities, the state, and private capital to gold in southeastern Senegal.

CHAPTER 1

Sacred Extraction And Subterranean Property In Upper Gambia



(Figure 5: *Carte des Concessions Auriferes du Senegambie-Soudan*, Bordeaux, 1881)

Introduction: *Dioura Baara*

Dioura: a goldfield, place of ritual
Baara: work, physical effort, labor

The year is 1880 and it is the height of the dry season on the rugged savannah plains of a region that is today called Kedougou in southeastern Senegal. Wedged between the river basins of the Gambia and the Faleme, before French colonization in the late nineteenth century, this territory bore the names of small provinces. Sirimana, Beledougou, Dentilia, and Niokholo occupied the borderlands of large, pre-colonial Muslim polities: Fouta Djallon to the south and Bundu to the northeast. Rising to prominence between the seventeenth and nineteenth centuries, emissaries from these states pillaged Upper Gambia—long considered a land of “pagans” and “fetishes”—for slaves, soldiers, and tributaries. In 1886 and 1887, French military leaders signed protectorate agreements with the chiefs of Niokholo and Sirimana. But more than a decade would pass before the French directly administered the zone. At the time of formal French conquest a military officer estimated that over 90% of the population practiced “fetishism.”¹

The French called this place “Upper Gambia” (*Haute Gambie*) because it occupied the headwaters of the Gambia River, which flows northward here before making a sharp westward turn, swelling in size as it progresses toward the Atlantic Ocean. In the 1880s Upper Gambia was a strikingly diverse ethno-linguistic mosaic of villages occupied by Mande, Fulbe, Diahanke, Soninke, Djallonke, and Tenda speakers. This diversity was a legacy of centuries of violence and displacement tied to the rise of the trans-Atlantic economy beginning in the fifteenth century. Slave raiders from Fouta Djallon and other large states targeted ethnic and religious minorities for enslavement, particularly those who resisted conversion to Islam. Upper Gambia’s distinctive ecology and geology offered natural advantages to those on the run. Minorities sought refuge in the Upper Gambia’s rocky escarpments, soaring bamboo forests, and maze of rainy-season rivers—notoriously difficult for outsiders to navigate. As raids and violence intensified in the

¹ Archives Nationales du Sénégal, Dakar (ANS), 10D1/0010, ‘Expédition du Niokholo contre les gens du Fouta Djallon’, 1894; ANS, 11D1/0977, ‘Correspondance entre le Gouverneur du Sénégal et l’Administrateur de la Haute-Gambie’, 1896.

seventeenth and eighteenth centuries, disparate populations consolidated into larger villages and built clay fortifications, called *tatas*, in anticipation of fresh attacks.

In 1880 enterprising young leaders from the Muslim polities of Fouta Djallon and Bundu competed with the French military for jurisdiction over this borderland. Oral histories refer to this moment as “the time of Alpha Yaya”—when this brazen prince of Labe claimed Upper Gambia as a northern tributary of the Fouta Djallon. Yaya’s mercenaries extracted tribute and taxed caravans carrying gold, wax, cloth, and kola nuts that originated from, and traveled through, Niokholo and Dentila.² Let us consider this moment of political transition and violence—of new migrations, markets, and famine—from the vantage point of a cluster of huts constructed hastily of palm fronds. We stand with dozens of men and women, most of who are ethnically Mande and speak the dialect of Maningolu. They have migrated from the far corners of Niokholo, Dentila, Sirimana, and Beledougou to pass the dry season mining for gold in Tinkoto. Tinkoto is Upper Gambia’s most celebrated *dioura*—a term used by Mande clans, who have long dominated indigenous gold mining on the Western Sahel, to refer to a gold deposit.

In Maningolu, *dioura* translates as a “place or site of ritual.”³ *Diouras* are dangerous because they are the property of spirits, called *jinne*. The term *jinne* (*djinn*, *jinn* or *jinni*) is drawn from the generic Arabic term for spirits, described in the Qur’an as preternatural, non-human beings created by the Almighty God. Most of the men and women gathered at Tinkoto do not identify as Muslim. However, they do believe in a unique God who created humans along with mystical creatures. To this nonhuman world, God has given privileged access to plants, animals, waterways, and mountains. These are the treasures of the bush, known as *wula* in Maningolu. In 1880, it is likely that Maningolu speakers used a suite of place-based names to refer to the spirits

² Ismael Barry, *Le Fuuta-Jaloo face a la colonization* (Paris, 1997).

³ Personal correspondence, Imam Fode Drame, Dec. 2015.

of the *wula*. Yet in the oral traditions referring to this time only the term *jinne* has remained. This is one small linguistic legacy of the historic entanglement of Islam and traditionalism in this zone.

Isolated and rocky, barren of all but gnarled shrubs and acacia trees, Tinkoto is situated in the deep *wula*. Here humans are weak and vulnerable, and the force of the unseen world is strong. In several days, men will use hand-held iron picks (*soli*), forged by a local blacksmith (*numu*), to dig vertical mining shafts (*daman*) into the sandy soils of Tinkoto. After digging two to twenty feet underground, they will reach an auriferous layer of sand and gravel (*nada*), and carve short horizontal tunnels in each direction to extract the gold deposit. Remaining at the mouth of the mine, women hoist rock to the surface with a hallowed calabash tied to a rope. After discarding the sterile rock, women will wash the *nada* in nearby riverbeds with the calabash, using a swirling motion to encourage heavy gold particles to settle at the base of the gourd.

Before this work can begin, miners must propitiate the *jinne* of Tinkoto. She holds gold tightly in her hands underground. The transfer of gold from spirit to human hands is brokered through the two chiefs of the *dioura*: a spirit chief of the *jinne* (*jinnekuntigi*) and a human chief of the male and female miners (*diourakuntigi*).⁴ The *jinnekuntigi* of Tinkoto is a motherless woman, vengeful and jealous. For years, she has taken the life of every child born in Tinkoto. Pregnant women no longer mine in Tinkoto. In 1880, in the midst of a prolonged drought, trusted diviners have relayed the *jinne*'s outrageous demand of the sacrifice of twelve circumcised men. "The *jinne* was angry then," recounted Makhan Keita, the descendent of a multi-generational Maningolu gold mining family in Kedougou. Kieta continued:

Some years, she [the *jinnekuntigi*] asked for the sacrifice of one man or woman, sometimes two or three. But that year, she demanded twelve, all young men. And so we dug twelve mining shafts in a line, and we buried our children up to their necks in soil. We told the *jinne*: "Look this is your portion. You take this sacrifice, and may you also

⁴ *Jinnekuntigi* (*jinne* = spirit, *kun* = head, *tigi* = chief); *Diourakuntigi* (*dioura* = goldfield, place of ritual, *kun* = head, *tigi* = chief).

liberate our portion [of gold].” The next day they returned to see if the children were still there, but all of the bodies had disappeared into the earth. She accepted the sacrifice and gold was abundant in Tinkoto. No one was hungry that year.⁵

In other versions of this event, the number of men sacrificed to the *jinne* varied between five and fifteen. But no one questioned the veracity of this story. Some elders claimed that their parents or grandparents witnessed the burials. Upon returning to the *dioura* the next day, the bodies of the young men had retreated into the bowels of the earth: a sign that the *jinnekuntigi* accepted the sacrifice. Stories of mining Tinkoto and other *diouras* in Upper Gambia are riddled with tales of blood sacrifice, the disappearance of men underground, mystical serpents, and suffering. These stories reveal that mining for gold involved an intimate exchange relationship with the invisible world, including *jinne* but also with mystical serpents and monstrous goblins, called *goto*.

This chapter parses dozens of oral histories and traditions collected during field research in southeastern Senegal, alongside travel accounts and archival records, for what they reveal about the intellectual life of human exchanges with the subsoil and the non-human owners of the *dioura* in Upper Gambia on the eve of French colonization. I follow memories and documentary evidence across the *diouras* of Upper Gambia and into the eastward lying auriferous territory known to generations of European travelers as “Bambuk.” Since the sixteenth century, Europeans traveled down the Faleme, a tributary of the Senegal River, in search of Bambuk. Throughout the Mediterranean world, this region was known as a primary source of the trans-Saharan gold trade. While this chapter draws on sources reaching back to the sixteenth century, it focuses on the 1880s. In this decade, the French intensified their territorial expansion in West Africa--reversing a century-long pattern of controlling markets, rather than land, in the region. This was a time of profound transition and upheaval, when Mande gold miners purportedly sacrificed young men to *jinne* to ensure the social welfare of their community and its future.

⁵ Makhan Keita, Kanoumering, Jan. 2014. See also Younkoun. Kamara, Tinkoto, Jan. 18 & 21, 2014

There are few regions of the world with a more intimate relationship to gold than West Africa.⁶ Over the course of centuries, North African and European travelers to Bambuk produced a rich paper trail describing West African gold mining techniques and trade routes. Documented travels to the goldfields of Bambuk, a several days walk from French trading posts on the Senegal River, generated some of the most valuable sources used by historians to reconstruct political organization, trade networks, and social life along the Senegal River Valley before colonialism.⁷ While I have benefited greatly from this scholarship, my interest lies in a largely overlooked domain: the intellectual and ritual relationships forged between a particular group of West Africans and the places from which this gold originated—the *dioura*.

The central argument of this chapter is that gold mining in pre-colonial Upper Gambia, as in much of the West African Sahel, was a form of ritual labor or sacred extraction involving a tempestuous relationship with the unseen world. *Diouras* were sacred properties owned by *jinne* and *goto*. Success in locating and mining gold demanded both ritual and technological expertise, blended into a coherent set of practices and prohibitions. Before digging mining shafts into the crust of the earth, miners sought out ritual knowledge of the spirit owners of the subsoil. *Jinne* visited expert gold miners in their dreams, revealing the location of fresh gold deposits. Over decades and even generations, people strengthened their bonds with *jinne* and these sacred properties. They did so by sacrificing animals, and even humans, at shrines dedicated to specific

⁶ Cameron Gokee, *Assembling the Village in Medieval Bambuk: An Archaeology of Interaction at Diouboye, Senegal* (Forthcoming, 2016); Jean Girard, *L'or du Bambouk. Une dynamique de civilisation ouest-africaine. Du royaume de Gabou à la Casamance* (Geneva, 1992); Nehemia Levtzion, *Ancient Ghana and Mali* (London, 1973); Raymond Mauny, *Tableau Géographique de l'Ouest Africain au Moyen Age* (Dakar, 1961); Roderick J. McIntosh, *Ancient Middle Niger: Urbanism and the Self-Organizing Landscape* (Cambridge, 2005).

⁷ On state making, see Boubacar Barry, *Senegambia and the Atlantic Slave Trade*, Abdoulaye Bathily, *Les portes de l'or*; Andrew F. Clark, *From Frontier to Backwater*; Michael Gomez, *Pragmatism in the Age of Jihad*; and David Robinson, *The Holy War of Umar Tal*. On trade networks, see Philip Curtin, *Economic Change*; and Lamin Sanneh, *The Jakhanke*.

jinne. By entering into long-term exchange relationships with the spirit owners of *diouras*, families, villages, or entire clans effectively co-opted these spirit territories as their own. In so doing, they cemented claims to tracts of sub-surface “property,” to use an anachronistic term.

Assembled on the goldfields of Tinkoto in 1880 were ritual specialists, such as the *diourakuntigi*, as well as technological ones, including blacksmiths (*numu*) and expert miners (*sanoubaaralu*). By sacrificing animals, kola nuts, and even humans to the *jinne* of the *dioura*, these experts in metals transformed the goldfield into a veritable shrine—“a place of ritual.”⁸ A properly managed relationship with *jinne* could generate fertility and wealth. Failure to respect the *jinne*’s desires and sacrificial demands could result in illness, injury, or even death.

By focusing on the intersection of ritual and technological practice in the pre-colonial space of the *dioura*, this chapter contributes to decolonizing the history of technology in Africa. As historian Clapperton Mavhunga has recently argued, shifting our attention from technological imperialism and material “transfers” from Europe entails attending to regional economic and cultural systems within which technological processes are situated and reproduced within Africa.⁹ I embrace a similar approach, taking a specific West African epistemology related to metals and extraction as a starting point for working through later encounters between African miners and French colonial administrators, geologists, gold prospectors and financiers.

Mavhunga’s critique of the historiography of technology focuses on questions of epistemology. There are also, I argue, political reasons for attending to the imbrication of ritual and technical forms in the deeper African past. Recognition of the sacred dimensions of extraction in sub-Saharan Africa, and elsewhere in the world, is hardly new. In West Africa,

⁸ Translation, Karim Traore, University of Georgia, personal communication, Aug. 2015.

⁹ Clapperton Mavhunga, *Transient Workspaces: Technologies of Everyday Innovation in Zimbabwe* (Cambridge, 2014). See also Leo Marx “Technology: The Emergence of a Hazardous Concept,” *Technology and Culture* 51:3 (2010), 561-577.

colonial and post-colonial ethnographers described the ritualistic symbolism of indigenous metal smelting and smithing.¹⁰ While generating rich detail, these accounts are largely synchronic snapshots of a timeless pre-colonial past or ethnographic present. My goal in describing the ritual labor of the *dioura* is more than an exegesis of a parallel symbolic realm in which “pre-colonial” extraction took place, a sort of foil to “modern” or “European” gold mining practices.¹¹ Rather, understanding the ritual logic of the *dioura* is crucial to understanding what West Africans lost, and fought to regain, after *diouras* became imperial property and Africans were forced to compete with Europeans for the legal sanction to mine gold. Grounding this dissertation in the late pre-colonial space of the *dioura* also explains why conflicts over access to mineral deposits among contemporary inhabitants of southeastern Senegal have fractured along ethno-religious divisions, rather than strictly territorial ones. Today, many Mande clans argue that they have gained proprietary access to the subsoil because their ancestors made blood sacrifices to the *jinne*—the true proprietors of mineral resources.

Unpacking the intellectual life of sacred extraction from the regional perspective of Upper Gambia defies other conventions in historical writing on West Africa. Accounts of eighteenth and nineteenth century Senegambia focus largely on state making or the networks of long-distance traders.¹² A view from the borderlands of larger states—an under-explored topic in

¹⁰ Beatrice Appia, “Les forgerons du Fouta Djallon,” *Journal de la Société des Africanistes*, 35:2 (1965), 317-352; Eugenia Herbert, *Red gold of Africa: copper in precolonial history and culture* (Madison, 1984); Patrick McNaughton, *The Mande Blacksmiths: Knowledge, Power, and Art in West Africa* (Bloomington, 1988). For an influential comparative study of the religious symbolism of metallurgy, see Mircea Eliade, *The Forge and the Crucible* (Chicago, 1962).

¹¹ On this point for the history of pre-colonial therapeutic practices in Central Africa, see Nancy Rose Hunt, *A Colonial Lexicon of Medicalization, Birth Ritual, and Mobility in the Congo* (Durham, 1999).

¹² On state making, see Boubacar Barry, *Senegambia and the Atlantic Slave Trade*, Ayi Kwei Armay (trans.) (Cambridge, [1988] 1998); Ismael Barry, *Le Fuuta-Jaloo face a la colonisation*. (Paris, 1997); Abdoulaye Bathily, *Les portes de l’or: Le royaume de Galam (Sénégal) de l’ère musulmane au temps de négriers (VIII-XVIIIe siècles)* (Paris, 1989); Andrew F. Clark, *From Frontier to Backwater: Economy and Society in the Upper Senegal Valley (West Africa), 1850-1920* (New York, 1992); Michael Gomez, *Pragmatism in the Age of Jihad: The Precolonial State of Bundu* (Cambridge, 1992); John H. Hanson,

its own right—raises different questions about human societies and their relationship to their so-called “natural resources.”¹³ Diverse populations valued Upper Gambia not only for its geological endowments in gold, iron, and other minerals, but also for its “natural” isolation from French traders on the Senegal River, British traders on the Gambia River, and African polities on all sides.¹⁴ Further, while it is well established that Mande groups dominated gold extraction on the West African Sahel, these studies unwittingly reproduce a Mande bias in the literature by focusing on the Niger River Basin, where Mande have long been the unequivocal majority. Mande institutions also oversaw gold extraction in Upper Gambia, but they did so in a diverse ethno-religious social landscape. Other groups engaged with, modified, and challenged Mande management of the *diouras*—producing debates, which are ongoing, about whether ritual knowledge about gold is tied to specific ethnic or clan affiliations. Outside of narrow corridors, it is not possible to talk about ready-made “Mande” or “Fulbe” culture zones in Upper Gambia. For centuries, ethnic and linguistic mixture has characterized this region. This diversity made *diouras* contentious, because these spaces were associated with what the French called “fetish” religion and what I will refer to in this dissertation as “traditionalism.” Fulbe and Diahanke Muslims in Upper Gambia considered gold mining to be ritually unclean or *haram*. This chapter lays the groundwork for an analysis elaborated in Chapter 6, which explores how engagement in gold

Migration, Jihad, and Muslim Authority in West Africa: The Futanke Colonies in Karta (Bloomington, 1996); Saki O. N'Diaye, A. Neil Skinner and Philip D. Curtin, “The Story of Malik Sy,” *Cahiers d'Études Africaines* 11:43 (1971), 467-487; and David Robinson, *The Holy War of Umar Tal* (Oxford, 1985).

¹³ For example, scholars have emphasized how long-distance trade, organized violence, and colonization altered the political structures of states and indigenous trading patterns. Philip Curtin, *Economic Change in Precolonial Africa: Senegambia in the Era of the Slave Trade* (Madison, 1975); Francois Manchuelle, *Willing Migrants: Soninke Labor Diasporas, 1848-1960* (Athens, 1997); Lamin Sanneh, *The Jakhanke Muslim Clerics: A Religious and Historical Study of Islam in Senegambia* (London, 1979).

¹⁴ The patterns of Atlantic-era settlement in Upper Gambia resemble those of refuge slave settlements on the West African coast. For parallels, see Walter Hawthorne, “Strategies of the Decentralized: Defending Communities from Slave Raiders in Coastal Guinea Bissau, 1450–1815” In *Fighting the Slave Trade: West African Strategies*, edited by Sylviane Diouf (Athens, 2003), 152–69. See also Nathaniel Carpenter, “Sovereignty along a West African Frontier: The Creation of the Guinea-Senegal Border, 1850-1920” (Unpublished Ph.D., University of California, Davis, 2012).

mining relates to where different groups are perceived to “sit” on a spatial and temporal spectrum between traditionalism and Islam in southeastern Senegal today.

The remainder of this chapter is divided into three sections. First, I place my approach to *dioura baara* as a form of ritual labor within a dialogue emerging at the intersection of science and technology studies and African history.¹⁵ This transitions into an analysis of the ritual logics of extraction in Upper Gambia on the eve of French conquest. The final section traces spirits, devils, and mystical snakes through several centuries of published accounts and administrative correspondence produced by Europeans who traveled to Bambuk and Upper Gambia prior to conquest. These accounts translated a regional vernacular of exchange with *jinne* as an African “belief” that gold belonged to “the devil.” This material offers a rare glimpse into an evolving dialogue—part African, part European—over subterranean property and extractive labor.

Placing the Sacred in African Technological History

When African studies first took shape as an academic discipline in the 1960s, archaeologists, economic historians, and historical linguists paid significant attention to technological artifacts and material change. This literature aimed to critique racist assumptions—rooted in early enlightenment travel accounts and perpetuated during the slave trade—that Africa and Africans were technologically backward. One debate centered on why Africa seemed to lag behind other continents in terms of technology. British anthropologist Jack Goody pointed to the late entry of the horse, plow, and wheel to the continent.¹⁶ Walter Rodney argued that an exploitative relationship with “the West” was to blame: the slave trade and imperialism had depleted the continent of human capital and natural resources, while fueling

¹⁵ (*Dioura* = goldfield, place of ritual, *baara* = work, labor).

¹⁶ Jack Goody, *Technology, Tradition, and the State in Africa* (Oxford, 1971).

Europe's technological expansion.¹⁷ Daniel Headrick detailed how imperial technologies, such as ships, quinine, and railways, facilitated conquest and ordered relationships between colonizers and colonized.¹⁸ In a cultural history vein, Philip Curtin and Michael Adas explored how Europeans deployed images of Africa's technological inferiority to justify the slave trade and the seizure of African land during the nineteenth century "scramble."¹⁹

Environmental historians and anthropologists further challenged the assumption that African technologies were primitive or inferior to begin with.²⁰ Anthropologists such as Robert Netting, Polly Hill, and Paul Richards demonstrated that African farming techniques, particularly poly-cropping, were better adapted to the continent's fragile tropical soils than the mono-cultural schemes introduced by Europeans.²¹ Melissa Leach and James Fairhead argued that many Europeans "misread" the African landscape, assuming that contemporary forest coverage was the

¹⁷ Walter Rodney, *How Europe Underdeveloped Africa* (Washington, DC, 1972). Frantz Fanon should be considered an early voice in this debate, particularly regarding the relationship of medicine and science to the production of racial hierarchies under colonialism. Frantz Fanon, *Black Skin, White Masks*, Charles Lam Markman, trans. (New York, 1967).

¹⁸ Daniel Headrick, *The Tools of Empire: Technology and European Imperialism in the Nineteenth Century* (Oxford, 1981); *The Tentacles of Progress: Technology Transfer in the Age of Imperialism, 1850-1940* (New York, 1988).

¹⁹ Michael Adas, *Machines as the Measure of Men: Science, Technology and Ideologies of Western Dominance*, (Ithaca, 1989); and Philip Curtin, *The Image of Africa: British ideas and action, 1780-1850* (Madison, 1964).

²⁰ For overviews, see William Beinart, "African History and Environmental History," *African Affairs* 99:395 (2000), 269-302; G. Maddox, G. I. Kimambo, and James Giblin, eds., *Custodians of the Land: Ecology and Culture in the History of Tanzania* (Athens: 1996); Roderick P. Neuman, *Imposing Wilderness: Struggles over Livelihood and Nature Preservation in Africa* (Berkeley, 1998); Helen Tilley, *Africa as a Living Laboratory: Empire, Development, and the Problem of Scientific Knowledge, 1870-1950* (Chicago, 2011).

²¹ Polly Hill, *Development Economics on Trial: the Anthropological Case for a Prosecution* (Cambridge, 1986); Robert Netting, *Hill Farmers of Nigeria: Cultural Ecology of the Kofyar of the Jos Plateau* (Seattle, 1968); Paul Richards, *Indigenous Agricultural Revolution: Ecology and Food Production in West Africa* (London, 1985). See also Grace Carswell, *Cultivating Success in Uganda: Kigezi Farmers and Colonial Policies* (Athens, 2007), Thaddeus Sunseri, *Vilimani: Labor Migration and Rural Change in Early Colonial Tanzania* (Portsmouth, 2001); Monica van Beusekom, *Negotiating Development: African Farmers and Colonial Experts at the Office du Niger, 1920-1960* (Portsmouth, 1992); and James Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven, 1998).

desiccated remnants of ancient forests rather than the product of recent human modification.²²

Ralph Austin and Daniel Headrick argued that Europeans judged African farmers and weavers to be “unproductive” because they did not understand the logics by which Africans allocated labor and time across different tasks and seasons.²³ For example, craft production was more closely tied to the agricultural calendar in Africa than in Europe and relied on the labor of youth and the elderly. In the meantime, archeologists documented the material accomplishments of pre-colonial polities, refuting the myth that foreigners constructed these monuments.²⁴ These early studies of technology were central to the emergence of African history as a discipline and took part in a broader effort to locate “African initiative” and “agency” in the pre-colonial past.²⁵

To refute colonial accusations that African technological practices were “irrational,” scholars focused on the material production of farmers, miners, and smiths, mentioning the more ritualized aspects of these activities in passing or leaving them to students of African religion and art history interested in cultural symbolism.²⁶ Even with the expansion of topical coverage, the materialist emphasis has remained strong within the study of technology in Africa. Over the past

²² Melissa Leach and James Fairhead, *Misreading the African Landscape* (Cambridge, 1996); and see Tamara Giles-Vernick, Tamara, *Cutting the Vines of the Past: Environmental histories of the Central African Rain Forest* (Charlottesville, 2002).

²³ Ralph A. Austin and Daniel Headrick, "The Role of Technology in the African Past," *African Studies Review* 26:3/4 (1983): 163-184. For similar arguments, also focused on West Africa, see A.G. Hopkins, *Economic History of West Africa* (Oxford, 1978); Richard Roberts, “French Colonialism, Imported Technology, and the Handicraft Textile Industry in the Western Sudan, 1898-1918,” *The Journal of Economic History*, 47:2 (1987): 461-472.

²⁴ An example of such collaborative research on the Malian empire in the 1960s is Djibril Tamsir Niane, *Expédition archéologique à Niani* (Conakry: INRDG, 1966). On the politics of archeology in Zimbabwe—and its relevance to efforts by historians and archeologists to document the material complexity of the African past—see Henrika Kuklick, “Contested Monuments: The Politics of Archaeology in Southern Africa,” in George Stocking, ed., *Colonial Situations: Essays on the Contextualization of Ethnographic Knowledge*, (Madison, 1991), 135-169.

²⁵ Terence Ranger established the program for this influential mode of research in *The Recovery of African Initiative in Tanzanian History* (Dar es Salaam, 1969). For a concise overview of the wide-ranging research on ‘African initiatives’ in the 1960-80s, see Derek R. Peterson and Giacomo Macola, *Recasting the Past: History Writing and Political Work in Modern Africa* (Athens, 2009).

²⁶ See Herbert, *Red Gold of Africa* (Location, 1984); Eugenia W. Herbert, *Iron, gender, and power: rituals of transformation in African societies* (Bloomington, 1993); McNaughton, *The Mande Blacksmiths*.

decade, a renewed interest in materiality in the humanities and a growing dialogue between science and technology studies and historians of Africa has encouraged scholars to turn to the African continent for new approaches to the epistemology and ontology of material culture. This literature has located innovations in the African past and established that African experts contributed to a range of scientific advances typically credited to “the West.”²⁷ Historians of the black Atlantic have revealed that Africans contributed not just brute labor to colonial agricultural systems, but also specialized knowledge.²⁸ In turn, studies of uranium mining and the African origins of pharmaceuticals place Africa at the center of global technological networks.²⁹

The importance of inverting the pernicious colonial portrayal of Africa as a place without technology—a “shadow” on the global map of networked modernity—cannot be overstated.³⁰ Yet recently, Clapperton Mavhunga questioned the limits of importing concepts derived from studies of technology in Western contexts to interpret the African past.³¹ In a deliberate attempt to decenter Western-centered epistemologies of technology, Mavhunga draws on “deep Shona” idioms to rewrite the introduction of guns and anti-poaching campaigns into southeastern Zimbabwe from the epistemological vantage point of hunters moving through forests that were “saturated with the sacred.”³² Echoing a call made by Steven Feierman for African studies more broadly, Mavhunga calls for rooting technological histories in the *long durée*: to write narratives of “African technologies” rather than about “technologies in Africa.”³³ To be clear, the goal is not

²⁷ Lyn Schumaker, *Africanizing Anthropology: Fieldworks, Networks, and the Making of Cultural Knowledge in Central Africa* (Durham, 2001); Tilley, *Africa as a Living Laboratory*, 2011.

²⁸ Judith Carney, *Black Rice: the African Origins of Rice Cultivation in the Americas* (Cambridge, MA: Harvard University Press, 2001); Edda Fields-Black, *Deep Roots: Rice Farmers in West Africa and the African Diaspora* (Bloomington: Indiana UP, 2008).

²⁹ Gabrielle Hecht, *Being Nuclear: Africa and the Global Uranium Trade* (Cambridge, MA, 2012); Abena Dove Osseo-Asare, *Bitter Roots: The Search for Healing Plants in Africa* (Chicago, 2014).

³⁰ James Ferguson, *Global Shadows: Africa and the Neoliberal World Order* (Durham, 2006).

³¹ Mavhunga, *Transient Workspaces*, 2014.

³² *Ibid.*, 28.

³³ Steven Feierman, “Colonizers, Scholars, and the Creation of Invisible Histories,” in *Beyond the*

a retreat to cultural or technological relativism, but to give priority to historical narratives about technology originating from Africa, rather than Europe.³⁴ To track how regional vernaculars interact with global technological change requires accessing the language and practices used by African actors to transform the material world. What did it mean to turn a gold deposit into a shrine by sacrificing to *jinne*? This question can only be broached by welcoming *jinne* and goblins into the secular language of science studies and allied fields. In so doing, we can begin to see how African miners—grounding their actions in a logic of exchange and sacrifice with the land and its invisible agents—shaped not only local events, but also encounters with European geologists and administrators, long-distance African traders, and global consumers of gold.

Beyond epistemological concerns, there are also political reasons for attending more closely to the ritual dimensions of sacred extraction. For one, by possessing bodies, lands, and particular resources, spirits inform property relations among humans as well. On the goldfields of the pre-colonial West African Sahel, human property claims to arable land, hunting grounds, and mineral deposits were often undergirded by privileged relationships to spirits. Viewed in this context, and to draw on a recent formulation by anthropologist Paul Johnson, the colonial

Cultural turn: New directions in the study of society and culture, ed. Victoria Bonnell and Lynn Hunt (Berkeley: 1999), 182-216; and Steven Feierman, “African Histories and the Dissolution of World History,” in *Africa and the Disciplines*, ed. Robert Bates, Valentine Mudimbe, and Jean O’Barr (1993), 167-212, 186. Over the past decade, the call to root histories of religion and race in *long durée* regional African histories has become particularly widespread in the discipline of African history, particularly so on the West African Sahel. Prominent examples include Rudolph Ware III, *The Walking Qur’an: Islamic Education, Embodied Knowledge, and History in West Africa* (Chapel Hill, 2014), Neil Kodesh, *Beyond the Royal Gaze: Clanship and Public Healing in Buganda* (Charlottesville, 2012); Sean Hanretta, *Islam and Social Change in French West Africa: History of an Emancipatory Community* (Cambridge, 2009); Bruce Hall, *A History of Race in Muslim West Africa, 1600-1960* (Cambridge, 2011); and David Schoenbrun, *A Green Place, A Good Place: Agrarian change, gender, and social identity in the Great Lakes region to the 15th century* (Portsmouth, 1998). Mamadou Diouf made an early argument for the need to place controversies over governance in Africa back into the *long durée* of the continuously renewed and reorganized invention of Africa and Africans. See M. Diouf, ‘Senegalese Development: From Mass Mobilization to Technocratic Elitism,’ In *International Development and the Social Sciences*, F. Cooper and R. Packard, eds. (Berkeley, 1997), 291-319, 292.

³⁴ Feierman “African Histories,” 1993:186.

occupation of territory was a question, “not only of the economic value of land, but also of the ongoing presence of spirits.”³⁵ Paradoxically, attention to the invisible world can sharpen our understanding of the very visible production of territory in Africa’s pre-colonial past. Second, to describe African gold mining as “technical” obscures arguments miners make about their work and their history. Since the late 1990s, Australian, British, South African, and Canadian companies have installed open-pit gold mines across the *diouras* of Upper Gambia. With the growing enclosure of mineral and agricultural lands by corporate permits, the Senegalese state has intensified “crackdowns” on so-called “artisanal” mine workings (Chapters 4-7). The descendants of multi-generational African gold mining communities claim reparations not only for the loss of mineral lands, but also for their ritual investments in the subsoil. Consider the words of Toumanie Cissokho. He lives in a village in southeastern Senegal that is now located within the exploration permit of a Canadian gold mining company:

It is true that *toubabs* [Europeans, white people] have good machines [...] But it is also true that the only reason they can extract gold here is because our grandparents, every year, brought kola and killed goats. It took years of sacrifices before the *jinne* released gold to people in Sabodala and Momoxhono. It was a hard place to live. We suffered. The *jinne* took a lot of children. But we released the gold. We spilled the blood.³⁶

If this argument is in part instrumental—to solicit an affective response from an expatriate researcher and to maximize economic returns from a transaction with corporate capital—it also has roots in a pre-colonial idiom of sacrificial exchange that has endured across time. *Jinne* narratives offer one regionally inflected account of how social and technical forms, and the ritual and exchange relationships that sustain them, change over time through political struggle. With this historiographic interlude in place, let us now turn to the *mise en scène* of sacred extraction.

³⁵ Johnson, “Spirited Things,” 3.

³⁶ Toumanie Cissokho, Duuta, Apr. 2014

Origin Stories

Upper Gambia is the suture point of two stable basement rocks, which produces the region's distinctive geological features: rocky escarpments, mountains, and massive rock outcroppings. Upper Gambia occupies the far western reaches of the Birimean Greenstone belt, a roughly two billion year old volcanic rock formation that is part of the West African Craton and is riddled with deposits of gold, diamonds, iron, lithium, tin, molybdenum, nickel, copper and chromium.³⁷ The Birimean belt is responsible for the geological deposition of gold across much of the West African Sahel. Millions of years ago, gold melted near the core of the earth and erupted toward the surface through volcanic activity and the movement of rock plates. Seeping into cracks and faults, gold combines with dissolved minerals into a liquid amalgam. As these fluids cooled, gold precipitated to create the veins, crystals and nuggets associated with this metal in its "natural" state. These are considered primary deposits, also known as parent rock and lode ore by geologists and the mining industry. Over millennia, water and wind has eroded these deposits, freeing gold from surrounding compounds. Transported by the local water table, gold particles resettled into valleys and in the depressions of rivers. These became known as secondary or placer deposits, and classified as alluvial or elluvial. Alluvial deposits are mined throughout West Africa. Elluivals—which refer to depositions located directly above or just adjacent to the original deposit—are common in certain zones of Guinea, Mali, and Senegal.

³⁷ To the northeast is the Mauritanide formation, which uplifts regionally into the Tomboura Escarpment in present-day Mali and marks the eastern edge of the region of Bambuk. The Mauritanide is composed of sedimentary, metamorphic, and volcanic rocks including conglomerates, sandstones, quartzite, and schist. It contains few exploitable minerals. J. P. Bassot, *Étude géologique du Sénégal Oriental et de ses confins Guinéo-Maliens* (Paris, 1966); Edmond Diop, Didier Béziat, Pierre Debat and Michel Grégoire, "Comment on 'Intrusive Rocks and Tectono-Metamorphic Evolution of the Mako Paleoproterozoic Belt (Eastern Senegal, West Africa)," *Journal of African Earth Sciences* 55 (2009): 265-268; Mamdou Gueye, Siegesmund, K. Wemmer, S. Pawlig, M. Drobe, N. Nolte and P. Layer, "New evidences for an early Birimian evolution in the West African Craton: An example from the Kédougou-Kéniéba inlier, southeast Senegal," *South African Journal of Geology* 110: 3 (2007), 511-534; J. B., Wright, D. A. Hastings, W. B. Jones and H. R. Williams, *Geology and Mineral Resources of West Africa* (London, 1985).

Because secondary deposits consist largely of sands and gravels, they are relatively easy to exploit and process with hand tools and can be mined by children and the feeble.

Archeological evidence suggests that agricultural villages located on the southern rim of the Sahara mined gold from a range of secondary and primary gold deposits for at least two millennia—and iron and copper for potentially far longer.³⁸ For much of this time, gold mining was a marginal dry-season activity and a complement to rainy-season agriculture. In Upper Gambia and Bambuk, villages mined for gold because they had few other means of generating a trade surplus.³⁹ Women, in particular, panned for gold along the receding riverbanks of the Faleme and its tributaries, while men dug vertical mining shafts further inland, roughly 75 meters in diameter and reaching up to 30 feet in depth. With controlled fire, more specialized groups of miners—particularly in the provinces of Boure (present-day Guinea) and Lobi (Burkina Faso)—exploited parent-rock deposits. After loosening the parent rock with heat, they pulverized the ore with wooden mortars and pestles and washed the residual powder in a calabash. Women saved gold dust in goat horns and commissioned specialized blacksmiths to make earrings or charms.⁴⁰ In the 1880s, miners most often traded gold for salt that was mined on the Sahara or on the Atlantic coast. In earlier decades, they also traded gold for cloth or the occasional slave.⁴¹ At least since the seventeenth century, when the accounts of European travelers to the region multiply, gold was sold to African traders, called *dioula*, a generic name for Muslim traders in

³⁸ Gokee, *Assembling the Village*; Herbert, *Iron, Gender, and Power*; McIntosh, *Ancient Middle Niger*; Ibrahima Thiaw, *Archaeological Investigations of Long-term Culture Change in the Lower Falemme (Upper Senegal Region) A.D. 500-1900*, (Houston, PhD Dissertation, 1999); Ibrahima Thiaw, “Atlantic Impacts on Inland Senegambia: French Penetration and African Initiatives in Eighteenth and Nineteenth-Century Gajaaga and Bundu,” In J. Cameron Monroe and Akinwumi Ogundiran eds. *Power and Landscape in Atlantic West Africa: Archaeological Perspectives* (Cambridge, 2012), 49-77.

³⁹ Philip D. Curtin, “The Lure of Bambuk Gold.” *Journal of African History* 14:4 (1973): 623-631.

⁴⁰ Mungo Park, *Travels in the Interior Districts of Africa Performed in the Years 1795, 1796 and 1797* (London, 1816); Silvester Meinrad Xavier Golberry, *Travels in Africa*, trans. W. Mudford trans. London, 1808[1802]), 276, 301.

⁴¹ Ernest, Noirot, *A Travers le Fouta-Diallon et le Bambouc* (Paris, 1882).

this region. In Upper Gambia, most *dioula* were of Soninke or Diahanke origin.

Until the sixteenth century, Soninke *dioula*—then known as Wangara—brokered between miners in southern auriferous zones and Arab-Berber caravans along the desert, who transported gold back to North Africa.⁴² In the fourteenth century, during the height of the Malian empire (ca 1230-1500), the fame of West African gold circulated throughout the Mediterranean world. Sundiata Keita founded the Mande polity of Mali.⁴³ Arabic sources attest that Mali's economy was based on agriculture and the trade in kola nuts and gold.⁴⁴ In 1324, Mansa Mussa, a descendent of Sunjata, traveled to Cairo en route to Mecca with caravans laden with gold, inflating local currencies and placing Mali on Catalan maps. Mussa's voyage inspired generations of North African chroniclers to travel to sub-Saharan Africa in search of gold.

Ibn Battuta was among the most influential North African travelers to the “land of the blacks.” He penned first-hand descriptions of the ruler of Mali in 1352 sitting on the cushions of the finest silks, clothed in expensive European textiles, and with a golden crown.⁴⁵ Outsiders imagined huge open-pit mines in West Africa, powered by slave labor. The reality was far

⁴² Cameron Gokee, *Assembling the Village*; Marie B. Perinbam, “Social Relations in the Trans-Saharan and Western Sudanese Trade: An Overview.” *Comparative Studies in Society and History* 15: 4 (1973): 416-436; Marie B. Perinbam, “The Political Organization of Traditional Gold Mining: The Western Loby, c. 1850 to c. 1910,” *The Journal of African History* 29, 3 (1988): 437-462; Paul E. Lovejoy, “The Role of the Wangara in the Economic Transformation of the Central Sudan in the Fifteenth and Sixteenth Centuries,” *The Journal of African History* 19:2 (1978), 173-193; Thiaw, *Archaeological Investigations*; Ivor Wilks, “Wangara, Akan and Portuguese in the Fifteenth and Sixteenth Centuries. I. The Matter of Bitu,” *Journal of African History* 23: 3 (1982): 333-349.

⁴³ There are numerous published and oral versions of the Sundiata epic. The most widely cited is D. T. Niane, *Sundiata: An Epic of Old Mali*, trans. G. F. Pickett (Essex, 1960). See also Bamba Suso and Banna Kanute, *Sunjata* (London, 1974); and Djanka Tasey Condé and David C. Conrad, eds., *Sunjata: A West African Epic of the Mande Peoples* (Indianapolis, 2004).

⁴⁴ Nehemia Levtzion, *Ancient Ghana and Mali* (London, 1973); Nehemia Levtzion, and J.F.P. Hopkins, ed, *Corpus of Early Arabic Sources for West African History* (Cambridge, 1981); John O. Hunwick, *Timbuktu and the Songhay Empire: Al-Sa'dī's Ta'rīkh al-sūdān down to 1613, and other Contemporary Documents* (Leiden, 2003); Mauny, *Tableau Géographique*. Susan K. McIntosh, and Roderick J. McIntosh, “From Stone to Metal: New Perspectives on the Later Prehistory of West Africa,” *Journal of World Prehistory* 2, 1 (1988): 89-133.

⁴⁵ Said Hamdun and Noel King, eds. And trans. *Ibn Battuta in Black Africa*. Princeton: Wiener, 1994.

different. The steady flow of gold by camel trade across the Sahara was the accumulated labor of thousands of men and women who mined gold across a vast zone—stretching from present-day Senegal to the far eastern reaches of Burkina Faso and south to the coast of Ghana. It was precisely because placer deposits were so widespread, and exploitable with a narrow range of locally forged tools, that West Africa produced so much gold.⁴⁶ While different kingdoms taxed the trade in gold, production and processing remained in the hands of families and villages.

Mande blacksmiths appear to have played a central role in expanding West Africa's medieval indigenous gold mining frontier. Most likely, they introduced gold mining into present-day Ghana and the Lobi region of Burkina Faso.⁴⁷ Gold and iron mining went hand and hand, and more systematic prospecting of these metals accompanied the development of the trans-Saharan trade from the third century AD onward.⁴⁸ Oral traditions offer competing origin stories for why gold became so ubiquitous on the Western Sahel. The key figure in these accounts is Bida, the guardian snake of the kingdom of Ghana or Wagadu.⁴⁹ Bida was the totem of the Soninke founders of Wagadu (circa 300-1200). He lay in seven great coils before the gates of the city. Three times a year, Bida rained gold on Wagadu in exchange for the sacrifice of a young woman. On the heels of a costly war, Bida chose the beautiful Sia Jatta Bari as his sacrifice. But Sia's lover, Mamade Sefe Dekote, swore he would not lose Sia to the serpent. Dressed in bridal cloth, Sia was led in a procession to the mouth of Bida's deep well. Mamadi stood at the well's rim, aware that Bida typically reared his head from the well three times before seizing his victim.

⁴⁶ Gokee, *Assembling the Village*.

⁴⁷ George E. Brooks, *Landlords and Strangers: Ecology, Society, and Trade in Western Africa, 1000-1630* (Boulder, 1993); Gokee, *Assembling the Village*; Ivor Wilks, *Forests of Gold: Essays on the Akan and the Kingdom of Asante* (Athens, 1993); Raymond E. Dumett, *El Dorado in West Africa: The Gold Mining Frontier, African Labor, and Colonial Capitalism in the Gold Coast, 1875-1900* (Athens, 1998).

⁴⁸ Brooks, *Landlords and Strangers*; Raymond Mauny, *Tableau Géographique*.

⁴⁹ The pre-colonial kingdom of Ghana, also known as 'Wagadu', is not to be confused with the independent nation state of Ghana, which is located far to the south of historic Wagadu, believed to be based in the southern Mauritania. McIntosh, *Ancient Middle Niger*; Levtzion, *Ancient Ghana and Mali*.

After Bida raised his head a first and second time, the crowd bid farewell to Sia. When the snake emerged a third time, Mamadi drew his sword and, with a single blow, decapitated the serpent. With a second blow, he severed the serpent's tail. As Bida's body hurled into the air, the snake cursed the people of Wagadu, depriving them of their golden rain. Bida's bisected body rolled southward. Where the three parts landed formed the goldfields of Bambuk, Boure, and Akan. Cursed by the killing of its totem, Wagadu suffered a terrible drought, forcing people to migrate southwards. Some of these migrants founded the kingdom of Mali.⁵⁰

Scholars interpret the tale of Bida as marking the onset of a series of droughts beginning in the twelfth through the eighteenth century that drove ethnic Mande speakers out of the northern Sahel and into the wetter savannas and forests to the south. During one such migration, the clan of Keita founded the medieval kingdom of Mali along the bend of the Niger River. Other Mande groups settled along the Gambia River and in the region of Bambuk. These purported descendants of Wagadu were primarily farmers, but during the dry season they would mine gold from riverbeds and desiccated waterways, fertilized in gold by Bida's slayed body.

Bida continues to haunt the goldfields of the Western Sahel, but under a different name: Nininkala (also known as Ningiri or Ningui-Nano). Nininkala travels in a north-south axis, passing through the goldfields of Bambuk and Boure. As she slivers underground, Nininkala consumes iron and excretes gold veins in her wake.⁶ A master spirit, Nininkala works in concert with a host of smaller *jinne* who preside over individual deposits. Nininkala connects the seen and the unseen world as no other spirit animal can, linking the earth to the sky as a rainbow and controlling the rains. Occasionally, she rears her head to the earth's surface and demands a fresh sacrifice from miners hungry for gold and iron. Nininkala is a source of wealth and fear.

⁵⁰ This version of the Bida story is adapted from Leo Frobenius and Douglas C. Fox, "Soninke Legends." Another compelling version of this story is found in Amadou Hampate Ba and G. Dieterlen, *Koumen*.

Gold Rests in the Hands of the *Jinne*
(*Jinne ye sano bolo*)

<i>Ala m'i sola</i>	May God give you
<i>Sano be goto bulu</i>	Gold that is in the hand of the goblin
<i>A be jine bulu</i>	It is in the hand of the <i>jinne</i>
<i>A be ningui-nango bulu</i>	It is in the hand of the serpent Ningui-Nango

A French missionary working in a village near Kenieba, Mali, recorded an elderly man reciting this chant in the 1980s.⁵¹ Kenieba is located in the heart of Western Mali's goldfields and a several days walk from Tinkoto. This chant addresses the nonhuman proprietors of gold: Allah, *jinne*, *goto*, and Ningui-Nango (Nininkala). I heard similar references in oral narratives conducted in 2013 and 2014. It is likely that this incantation accompanied a blood sacrifice to the unseen world. We can imagine men and women gathered in Tinkoto almost a century earlier singing similar praises to the spirit dwellers of the sub-surface.

According to oral traditions from Upper Gambia, miners in the 1880s sought wealth and fertility, but also protection from the dangers of the bush, the *wula*.⁵² As the French military expanded their territorial ambitions into the region, the African leaders of Bundu and Fouta Djallon competed for political patronage and followers. Alpha Yaya sent mercenaries to Upper Gambia to tax caravans and, if faced with resistance, to seize slaves. Europeans who ventured into Upper Gambia during this time described the population as tired, ill, and devastated by slave raids and famine.⁵³ Muslim reformers had recently targeted this region as a "pagan" country. They pillaged grain reserves, recruited soldiers among willing converts, and captured slaves. Al-Ḥājj Umar Taal, a Muslim Fulbe reformer and military leader, reached the western edge of Bambuk in the 1850s. By the 1880s, Mamadou Lamine, a Diahanke Muslim reformer, organized

⁵¹ Gabriel Cuello and Loïc Robin, *Les Malinké du Konkodugu* (Paris, 2005), 202.

⁵² Tounkoun Touré, Tinkoto, Dec. 2013; Wulaba Kamara, Saraya, Mar. 2014; Mamadou Dramé, Bélé Dougou, Mar. 2014

⁵³ Andre Rancon, *Dans la Haute-Gambie: Voyage d'Exploration Scientifique, 1891-1892* (Paris, 1895).

a new *jihad* against these territories. But after the French military captured Lamine's family near Bakel, Lamine reoriented his *jihad* against the French. In 1886, Lamine would seek refuge in Upper Gambia in a cluster of Diahanke clerical villages situated along the Gambia River, where he recruited followers from the surrounding provinces.⁵⁴ During the dry seasons of 1886 and 1887, the French pursued Lamine—seizing cattle and millet from villages in Upper Gambia. Colonel Gallieni signed treaties with Beledougou, Niocolo, Gamon and Tenda. Part of his strategy was to “secure” the camps of French gold prospectors in Upper Gambia and Bambuk, which Lamine targeted during his military campaigns and razed through a scorched earth policy.

But the African gold miners gathered in Tinkoto in 1880 did not yet know the name of Mamadou Lamine, and most had never encountered a white trader or military officer. They did have direct experience with the extreme political upheaval, raids, and requisitions associated with Franco-African military incursions to the east. For nearly a decade, millet was selling “at the price of famine” in Upper Gambia.⁵⁵ As large caravan travel was dangerous and heavily taxed, gold became an increasingly attractive trade item. There are no reliable statistics on how much gold was mined in Upper Gambia during the final decades of the nineteenth century, and European travel accounts are few. But reports from British traders on the Gambia describe gold as one of the major exports of Upper Gambia, along with kola nuts, animal hides, and beeswax.⁵⁶

Dry-season migration to the *dioura*, like long-distance caravan travel, exposed miners to the same dangers of taxation and capture. And in the 1880s, the nonhuman world was powerful and angry, mirroring the upheaval of the human world.⁵⁷ The destruction of villages had returned

⁵⁴ A. Bathily, “Mamdou Lamine Dramé et la Resistance Anti-Imperialiste dans le Haut-Sénégal (1885-1887),” *Notes Africaines*, 125 (1970), 20-32.

⁵⁵ ANS/11D1/0977, “Correspondance entre le Gouverneur du Senegal et l’Administrateur de la Haute-Gambie,” 1890, 1894, 1897.

⁵⁶ *Ibid.*

⁵⁷ Mamadou Kamara, Sambaranbugu, Jun. 2014; Mamadou Dramé, Bélé Dougou, Mar. 2014

large territories once firmly under human domain, into the hands *jinne*. For humans, the safest spaces were those conquered by civilization: the interiors of mud huts. Dangers increased as one moved beyond the family compound into cultivated fields and finally into the *wula*. The engagement of Mande villages with the *wula* was shaped by physical and ritual cycles tied to the dramatic alteration of the Sahelian seasons between the rains (*sama*) and the sun (*telemaa*).

During *sama*, from April to November, people were closely bound to civilization. Women tended plots of tobacco, onions, okra, melons, tubers, cotton, indigo, and rice. They also cared for goats, sheep, and cows in small plots at the edge of the village. Each morning, women prepared and carried food to men, who defended more distant fields of millet, sorghum, and fonio from the incursions of wild boars, baboons and elephants. Swollen rivers restricted travel. At the close of harvest in November, special festivals marked the opening of the village to the heightened mobility of the *telemaa* and entry into the dangers of the *wula*. Rivers receded, the harsh harmattan winds blew in from the Sahara, and the land became naked and parched. Boys and girls entered the *wula* to undergo circumcision and excision rights in sacred forests. Hunters, blacksmiths, and healers disappeared into the *wula* for extended periods in search of animals, minerals, and plants. While men collected berries, karate, and a range of edible roots from the forest, men harvested honey and wax to supplement a largely cereal-based diet. These activities all required exchange relations with the nonhuman owners of the *wula*.

Jinne and *gotto* possessed powers unique from humans, but their distinctive personalities reflected the diversity of human whims. They could be male or female, old or young, bitter or joyful. They danced, celebrated the turn of seasons, and gave birth. Sensitive to light and heat, they preferred to inhabit mountains, crevices and trees. God had given them special dominion over these dark and protected spaces. Spirits circulated at dusk and high noon, times when it was

preferable for humans to remain in enclosed man-made spaces. Over the course of years, through prayers and incantations, humans managed to reduce the influence of *jinne* in villages and in cultivated fields. But *jinne* and *goto* reigned in the realm of the *wula*. They could assist, manipulate, or harm human interlocutors. *Jinne* would move a rock across the path of a woman searching for firewood or brush leaves against the skin of a lone hunter to signal their interest in forging a relationship with the human interloper. *Jinne* often transformed into animals to become visible to human eyes. On occasion, *jinne* claimed humans as spouses or lovers, possessing them in dreams and offering their partners unique insights into the unseen world. But to see a *jinne* in its natural state or to take something from the *wula* without giving something to the *jinne* in exchange, could invite illness, blindness, insanity or death. *Jinne* were particularly jealous of minerals, lodged in dark crevices underground. It was rumored that *jinne* built houses with gold and iron. But more likely, *jinne* hoarded these substances because people were so interested in them. Minerals offered a portal into exchange relationships with humans.

There were few spaces more saturated with the powers of the nonhuman world than the *dioura*. Some villages in Upper Gambia would send one or two men into the *wula* in search of a fresh *dioura* for the village to mine during the dry season. One of two factors initiated these searches: the village was drawing diminishing returns from a deposit mined for several years, or the *jinne* had claimed the life of a miner through a cave-in. Men and women occasionally discovered a gold deposit at random while hunting, farming, or collecting firewood. But it was more common for *jinne* to visit expert miners in their dreams through a vision of a cluster of rocks, gnarled tree roots, or a stream. Upon entering the *wula*, miners would recognize the image from the dreams and test the soil for the presence of gold. Mande gold prospectors prepared themselves for the dangers tied to these spaces, bathing in mixtures of pulverized leaves that

were favorable to the unseen world or wearing amulets impervious to the mischief of the *jinne*.

Gold prospecting thus combined ritual and technological skills. Knowledge of the association of gold with particular rocks, trees, and plants was also passed from fathers to their sons. Mothers, in turn, instructed their daughters on where to find gold along rivers. Equally important sources of transmitted knowledge included warnings of areas to avoid due to an angered *jinne* and ritual instructions on how to please or not anger the unseen forces of the *wula*. For Mande prospectors in Upper Gambia, “technical” indexes of gold included the tree *sounsoun*—known as the “tree of gold” in Maninkakan. *Sounsoun* dug its deep roots into underground water tables, where ancient alluvial gold deposits often accumulated.⁵⁸ The association of *sounsoun* with termite mounds was particularly propitious. On the Sahel termites can dig hundreds of meters underground in search of water and particular nutrients. Prospectors tested these mounds for gold particles, carried to the surface in the mouths of termites or through their excrement.⁵⁹ The trees *niama* and *soo* were also indicators for gold, but were less reliable than *sounsoun*. By contrast, the trees *boure* and *coungouroun* were a negative indication of gold, guiding the prospector to look elsewhere. Prospectors also scanned the texture, color, and smell of soils for the presence of iron, which is often associated with gold within the Birimean greenstone belt.⁶⁰ Smell was particularly important for helping male miners once they reached the auriferous layer. Rock formations provided other clues. Alluvial deposits were concentrated in old valleys and depressions at the draining points of the local water table. Areas scarred by

⁵⁸ R. Goloubinow, “La Prospection et les gisements d’or de demain,” *Publications du Bureau d’études géologiques et minières coloniales* 15 (1940), 5-10; A. Belan, “L’or dans le cercle de Kedougou,” *Notes Africaines* (1946) 31, 9-12. See also J. Siossat, “Les Coutumes des Orpailleurs Indigènes du Maramandougou,” *Bulletin du Comité d’études historiques et scientifiques de l’Afrique occidentale française* (1938), 336-349; Hippolyte Marie Mathelin de Papigny, “Note sur les exploitations indigènes du Satadougou,” *Bulletin du Comité d’études historiques et scientifiques de l’Afrique occidentale française*, 8:3 (1925), 394-404.

⁵⁹ Wulaba Kamara, Saraya, Mar. 2014; M. Dansakho, Bambaraya, Mar. 2014;

⁶⁰ YOUNKOUN Kamara, Momokhono, Jun. 2014

volcanic eruptions were more likely to bear gold. But *jinne* also haunted the gullies, rock escarpments, and mountains generated by intense geological activities.

When a lone prospector located a gold deposit with exploitable potential, he or she initiated a more intense search for ritual knowledge. Who was the *jinne* proprietor of the *dioura*? What did he or she want in exchange for releasing the gold to human hands? To answer these questions, prospectors turned to diviners, dream interpreters, and even—a rare case prior to the mid-twentieth century—Muslim clerics. Miners also consulted blacksmiths, who had extensive experience with propitiating the *jinne* of iron deposits.⁶¹ It could take weeks for a consensus to emerge over which *jinne* owned the freshly discovered deposit. The opinion that held the most weight was that of men and women who guarded village-level shrines, called *jalan*. In nineteenth century Upper Gambia, most ethno-linguistic groups propitiated *jalans*, with the exception of Muslim Diahanke and Fulbe. Among ethnic Mande, *jalans* cemented the relationship of a particular clan or village with the master *jinne* (*jinnekuntigi*) of the zone. The head of the shrine was known as the *jalantigi*.⁶² Depending on the village, this position was hereditary or appointed by a council of elders. It was distinct from the village chief, the “head of the land” (*dugutigi*).⁶³

Jalans were typically erected at the base of particular trees or a cluster of rocks, marking where the founders of the village first interacted with the *jinne* proprietors of the *wula*. The *jalan* was a portal or medium through which the *jalantigi* could address the *jinne* who presided over the *wula*, allowing the village to benefit from its honey, animals, trees, and minerals. Sacrifices to the *jalan* protected the entire community against evil, disease, and infertility. Sacrifices could range from slaughtered animals to kola nuts and libations, such as fermented millet (*dolo*). The

⁶¹ Appia, “Les forgerons du Fouta Djallon”; Nambala Kanté, *Forgerons d’Afrique Noire: transmission des savoirs traditionnels en pays malinké* (Paris, 1993).

⁶² *Jalantigi* (*jalan* = shrine, *tigi* = chief).

⁶³ *Dugutigi* (*dugu* = land, *tigi* = chief).

jalan nila also praised the *jinne* at the site of the *jalan*—recalling the *jinne*'s assistance in former combats or its summoning of rains in years of drought. *Jalans* accumulated blood, feathers, and fur, and iron objects—iron rifles used by celebrated hunters or the hoes of productive farmers. Women who struggled to become pregnant, or lost babies within the first year of life, confided their unborn children to the *jalan*. For this reason, many Mande born in the nineteenth century bore the names of the rocks and trees on which *jalans* were built: Kuru, Fara, Sounsoun. As mothers called the names of their children, they summoned the protective power of the *jalan*.

When African gold prospectors discovered a new deposit, they amassed a sample of the surrounding earth and carried it to the *jalantigi* of the spirit territory within which the gold was found. In turn, the *jalantigi* brought the earth to the base of the *jalan*, upon which a red cock was sacrificed. If the testicles of the cock turned black, the *jinne* rejected the sacrifice. If not, the *dioura* could be opened. If a sacrifice was rejected, it became forbidden for anyone to prospect for gold in the zone from which the sample was drawn. Strangers—Africans from elsewhere or French miners who installed in the region in the era of conquest—often ignored these interdictions. These travelers incurred the wrath of *jinne* and Nininkala, and often succumbed to death by disease or suffocation. In Sansounding, a village on the Faleme River, elders recount that Nininkala once emerged from the depths of the river to swallow a canoe of Europeans who insisted on panning for gold on a stretch of riverbank where *jinne* prohibited mining.⁶⁴

Sacrifices on the *dioura* were performed by one of two authorities: the *jalantigi* of the nearest communal shrine or the *diouratigi*, a man or woman elected by the community of miners. The *diouratigi* was responsible for ensuring the protection of miners and the fertility of the *dioura*, all of which depended on nurturing a propitious relationship with the *jinne* of the *dioura*. It was the responsibility of the *diouratigi* to determine what sacrifices the *jinne* desired: ranging

⁶⁴ Mamadou Karouma, Sambaranbugu, Jun. 2014; Mamadou Dramé, Bélé Dougou, Mar. 2014.

from chickens, to rams, to humans. The demands of *jinne* varied widely, higher in *diouras* containing significant wealth or where was located at depths greater than the length of a human body with hands outstretched. If the *dioura* was fertile, or the *jinne* was angry, it could demand human sacrifices. Regardless, the initial sacrifice was blood, which “opened” the *dioura* for communal extraction, rendering the space safe from the malevolence of the unseen world.

To cover the cost of the sacrifices performed by the *diouratigi*, miners offered ritual intercessors a portion of gold from each productive mining shaft (*daman*). The *diouratigi* coordinated with the local chief of the land (*dugutigi*) to oversee the daily management of the mine: to organize labor, determine if and how new migrants would be integrated into the village, and to interface with any *dioula* traders who wanted to conduct business on the *dioura*. The *diouratigi* and *dugutigi* selected a small group of men, called the *tombolman*. This village-level police force ensured public order on the *dioura* and in the neighboring village. Most *tombolman* were recruited from among experienced Mande hunters, who accompanied groups of miners into the *wula*. These men occupied a dual role. With rifles, they protected miners from wild animals and hunted during the day. At days end, the *tombolman* exchanged portions of antelope meat for gold. The *tombolman* also mediated any disputes that emerged among miners and indicated where individuals or groups of miners could dig their pits. On populated mines, the *tombolman* ensured that pits were evenly spaced at intervals of three to four meters. In this way, when miners reached the bedrock (*nada*), and began digging horizontally, they could link up with neighboring mines. This method aerated mining shafts, preventing carbon monoxide poisoning underground. While many of the regulations enforced by the *tombolman* were centered on appeasing the *jinne*, there were also technological justifications for many of these rules. The work of the *tombolman*, like that of gold miners, cannot be neatly described as ritual or

technological. Rather, their practices blended the two realms into a coherent set of practices. Miners typically thanked *tombolman* for these complex services by offering these men a portion of the gold they mined at the close of the dry season. These offerings were, however, voluntary.

The initial sacrifices performed by the *diouratigi* protected the entire community of miners, including those who were present at the time of the “opening” of the *dioura* as well as family members who might join in later days. But once the soil was penetrated by the first iron pick, it was up to individual mining teams to conduct sacrifices to the smaller and more capricious *jinne* who inhabited each mining shaft. As miners descended deeper into the earth, the search for ritual knowledge and sacrifices intensified. Mining was highly gendered. “Teams” were composed of a roughly even division of men and women: two or more men, usually brothers or fathers and sons, paired with their mothers, wives, or sisters. The men alternated the work of digging the mining shaft, while women hoisted rock to the surface and processed the auriferous bedrock in nearby streams. Each team elected a chief, called the *damantigi*.⁶⁵ Like the *diouratigi*, the responsibilities of the *damantigi* were primarily ritual in scope: to determine the appropriate sacrifices for the *jinne* residing in the *daman*. But the *damantigi* also oversaw the division of profits from the bedrock, which were divided evenly between men or women. In some cases, the *damantigi* consulted with the *diouratigi* to determine sacrifices; at other times, the *damantigi* would travel great distances to consult the *jalantigi* of his home village.

In order to ensure the success of the miners, the *diourakuntigi* and *tombolman* enforced a number of other regulations or taboos, called *tana*, on the mines. *Tana* were primarily prohibitions against the use of certain substances or objects that the *jinne* disliked within the space of the *dioura*. These included peppers, onions, and the presence of dogs. Theft of gold or the food of other miners was strictly forbidden on the *dioura*, and resulted in the death by the

⁶⁵ *Damantigi* (*daman* = pit, *tigi* = head).

hand of a *jinne* within a year. To reverse this curse, and spare his life, the thief had to give the *jalantigi* the portion of gold or the equivalent of the food stolen in addition to 100 kola nuts. The most important *tana* was the strict prohibition against mining on Mondays. This was a day of rest for the *jinne*, when they could emerge from their subterranean dwellings to roam the surface of the earth. If *tana* were ignored or sacrifices insufficient, *jinne* took her own sacrifices: seizing a man in a cave-in or pulling a woman into the heart of the river while she was washing gold. The sudden disappearance of gold from a *dioura*, or the death of a miner underground, signaled that the miners had failed to properly nurture their exchange relationship with the *jinne*.

The miners who assembled at Tinkoto in 1880 considered gold either alive or dead. This classification was tied to Nininkala. As mentioned above, Nininkala consumed iron and excreted gold veins and powder. This gold was considered “dead” and thus safe for human extraction. Gold that had not yet passed through Nininkala’s digestive tract was “alive” and touching this substance could lead to injury, madness, blindness or even death. One reading of dead and live gold finds traction in a broader ritual vocabulary of ethnic Mande who speak of *nyama*, a dangerous and powerful life force.⁸ *Nyama* is lodged in humans, animals, plants, and the inorganic matter of metals—and is emitted as these substances were extracted, plucked, or removed from their “natural” state. During extraction and smelting, minerals can emit powerful quantities of *nyama*. In the past, blacksmiths, understood to possess powerful repositories of *nyama* in their own right, quelled and controlled this force through incantation, sacrifices and ritual protections. Dead gold might have been a reference to gold stripped of its *nyama* through prayers, ritual protections, and sacrifices. Gold found in large quantities, such as a nugget lodged in quartz or exposed on a riverbank after a hard rain, was particularly laden with *nyama*. The colonial archives are riddled with references of people rendered blind or insane after touching

and removing golden rock and objects, particularly those found in crevices near mountains and tree roots. For example, in 1932 in Siguiri, Guinea, it was reported that a young girl recovered a pair of gold earrings from the ground, and was immediately struck with madness. At the turn of the century, the French colonial ethnographer reported a similar story on Siguiri's goldfields:

I have heard it said by the natives that Mount Didi had a considerable wealth in gold, but that the devil did not want to relinquish it. They add, in their enthusiastic faith, that there are mortars and pestles entirely of gold, which were hidden by the first inhabitants of the region. Those who have seen them, since, attempting to remove them, were stricken with madness. A woman who still lives in the village of Fatoya discovered them [the mortar and pestle] one day while she was searching for firewood in the bush. By the time she stopped to pick up one of the pestles, she was violently hit to the ground by invisible hands and beaten. She could not get up until she released the precious instrument and returned to the village having lost her sight.⁶⁶

Reports written by colonial geologists in the 1930s and 1940s relate similar practices.⁶⁷ After the discovery of a large gold nugget, a *tombolman*, or a ritual intercessor solicited by the *diourakuntigi*, fired the gold nugget with a rifle in order to “kill” the gold. There is not an explicit mention of *nyama* in these accounts, but shooting the gold with a rifle is commensurate with the logic of taming this powerful nature force. It is unclear whether these gold prospectors went blind or insane because of their exposure to powerful doses of *nyama*, or of they were seized by a jealous *jinne*. The answer could be both. When sacrifices were lacking, the *jinne* released *nyama* from the gold. Regardless, these stories warned miners against extracting gold without taking necessary ritual precautions, without making a proper sacrifice.

Rituals and embodied practices materialized relationships between miners and *jinne*. *Jinne* rewarded men who consumed millet beer and soaked in herbal solutions prepared from the leaves of trees that grew in association with gold. Miners harvested the leaves of *sene* and

⁶⁶ Maurice Delafosse, *Haut-Sénégal-Niger*, Vol 1:3, (Paris, 1912), 190-1.

⁶⁷ Fodéba Keita, “Autour du Placers du Cercles de Siguiri,” *Notes Africaines* (1943), 17-18.

tongwe, and then dried and pulverized these plants.⁶⁸ When mixed with bathwater, these plant powders soaked into the skin, and were released again in the air of mining shafts as men perspired, pleasing the senses of the *jinne* underground. While working underground, miners also consumed red kola nuts, a favorite of the *jinne*. *Jinne* rewarded these men by revealing the location of gold veins. When displeased by substances, *jinne* concealed gold from human eyes.

The ritual dangers of the *dioura* made it necessary to clearly demarcate extractive activities from those of the more domestic and civilized activities of the village. In Tinkoto, miners constructed makeshift huts at a remove of at least one kilometer from where they mined gold. While Tinkoto was only a seasonal village, the presence of people, cooking fires, and man-made construction reduced the power of the *jinne* in these dwellings. Rising at dawn, men embarked for the *dioura*. Women remained behind to cook the mid-day meal, joining men at the *dioura* by mid-morning. Meals were consumed at a safe distance from the *dioura*. Women seasoned food with spices favorable to the *jinne*. Sacrifices to the *jinne* were always conducted on the *dioura* and never in the village. Animals sacrificed on the *dioura* were suffocated and the animal's head and skin were buried underground. The remaining meat was grilled and consumed directly on the *dioura*. No portion of the animal was brought back to the village. Muslims considered suffocation ritually unclean, preferring to bleed animals at the neck. The ritual suffocation reinforced the physical and ritual distance between the *dioura* and the village (*dugu*).

The bodies of miners killed underground also received special treatment. If a miner suffocated, his bones reportedly turned to gold. Such a death could also make gold disappear from the *dioura*. If the family of the dead miner lived nearby, the *diouratigi* would ask them whether to leave the body underground or to unearth it. If left underground, the other miners would abandon the *dioura* for the remainder of the season. If they returned in future years, a

⁶⁸ Mamadou Karouma, Sambaranbugu, Jun. 2014; Mamadou Dramé, Bélé Dougou, Mar. 2014

portion of the gold extracted from every mining shaft would be given to the family of the deceased miner. The understanding was that the productivity of the mine was due, in part, to this human sacrifice. If the body was unearthed at the family's request, it was still given a particular burial. The body was not to touch the ground of the village. Rather, it would be placed at a remove from the *dioura* in the bush and covered with rocks and branches instead of buried underground. This burial practice was also common for warriors killed in battles that were laden with *nyama*, which was dangerous for the living to encounter in close proximity.⁶⁹

In the 1880s the *diouratigi* and *tombolman* were the only authorities in Tinkoto. There was no *dugutigi* because people did not farm year-round in Tinkoto, and the closest permanent village was over a days walk away. Beyond the tributes miners paid to cover the cost of communal sacrifices and the services of the *tombolman*, they did not pay a tax on gold production to political authorities. Based on European travel accounts and oral traditions, it appears that gold extraction in Upper Gambia was far more decentralized and laissez-faire than extraction in regions characterized by more political centralization and social hierarchy. For example, on the nineteenth-century goldfields of Bundu, Mande leaders profited as middlemen in the gold trade by fixing prices and taxing exports in collusion with Diahanke *dioula*.⁷⁰ There are no accounts of such predatory practices on the *dioura* of Upper Gambia, where decentralized groups organized around ritual intercessors controlled extraction prior to colonialism.

We do not know how many miners assembled at Tinkoto in 1880, the year in which twelve young men were purportedly sacrificed to the *jinnekuntigi*. It was an extraordinary and unparalleled sacrifice. We cannot know whether these men actually lost their lives underground or if this event has become a way of talking about suffering, sacrifice, loss, and the exacting

⁶⁹ Youssouf Cissé, "Notes sur les sociétés de chasseurs Malinké," *Journal de la Société des Africanistes*, 34:2 (1964), 175-226.

⁷⁰ Curtin "The Lure of Bambuk Gold," Gokee, *Assembling the Village*.

demands of the nonhuman world. European travelers into this borderland were few in the 1880s and none of them passed by Tinkoto—isolated as this *dioura* was from large villages and centers of political power. It would be another decade before the French directly administered this zone. The next section investigates how humans, through nurturing ritual relationships with *jinne*, generated claims to subterranean property in Upper Gambia on the eve of colonization.

***Jinne* Property and Ethnic Territories in Upper Gambia**

Land ownership was relatively flexible in Upper Gambia in the late nineteenth century. Descent and ownership was patrilineal in Mande and Fulbe villages, but most people did not own land outright. In most cases, a family who cleared a plot of land of its trees acquired usufruct rights to farm and hunt the territory in perpetuity. Fathers passed these rights to sons. Village chiefs (*dugutigi*) allocated cultivable plots of land to incoming migrants and to younger sons as families, and their needs for cultivable land, expanded. Like many regions in pre-colonial West Africa, Upper Gambia was rich in land but not in people. Few villages boasted more than 200 inhabitants. Collectively, Sirimana, Beledougou and Niokholo counted no more than 10,000 men and women. For this reason, villages welcomed migrants to intermarry into the village or to settle fresh villages nearby. In exchange for access to land, incoming migrants offered their hosts ritual services or wild game, honey, and healing plants culled from the *wula*.

But how were territorial boundaries produced in the first place? Who was the rightful “owner” of the land and how was the status of migrant or newcomer established? These questions remain contested in southeastern Senegal today, particularly since rising gold prices have intensified pressure on access to land, including farmland. In the nineteenth century, it was widely recognized that the rightful owners of the land were the clans or groups who claimed to

have found only *jinne*—that is, no other human inhabitants—upon their arrival in the zone. By establishing a ritual exchange with *jinne*, humans acquired use rights to the land overseen by the *jinne*—thereby transforming this sacred territory into a property claim. *Jinne* “owned” the land and people became “first comers” by entering into exchange relationships with these spirits. The Mande narrative of the founding of the province of Niokholo illustrates this dynamic. Mady Sadiakho of Baraboye told me this version, but I heard similar stories from other elders:

Walking alone, lost and hungry, a Mande man by the name of Kamara encountered a *jinne*. “You, what are you searching for?” the *jinne* asks. “I have come from a battle and I am hungry,” the man responds. “Ok,” said the *jinne*, “I am going to get you some meat. But in return, you have to give me a girl and a boy.” The *jinne* pulled a snake from the bush and killed it. He removed its skin and grilled it, placing it on a skewer. The man took the skewer and ate as he walked. After he finished, the *jinne* asked the man if he was ready to make his sacrifice, but the man was too tired. The *jinne* then took an antelope from the bush. The man ate this meat for lunch and dinner. The *jinne* asked again for a young boy and a girl. This time, the man fulfilled his request. From that day forward, the *jinne* protects the Kamaras and offers them the forest.⁷¹

The foundation narratives of the Mande provinces of Dentila and Beledougou include similar encounters between *jinne* and traveling men—often lost hunters or smiths in search of fresh iron deposits. As described above, villages established shrines (*jalans*) to memorialize and nurture their relationship with the *jinne* through regular sacrifices. The *jalan* is responsible for the wealth, reproductive success, and communal health of the village.⁷²

Once the bond with the *jinne* and its territory was secured, first-comer groups became responsible for allocating farming, mining or hunting rights within the *jinne*’s territory to incoming groups. According to oral legends from Upper Gambia—recorded by myself and other researchers—most groups who claim “first-comer” status are from Mande, Tenda (Beliyan-Bedik and Beliyan-Bassari) or Djallonke clans. Oral legends and available archeological

⁷¹ Mady Sadiakho. Dialakuntigi. Baraboye, Jun. 15, 2014

⁷² A common Maninkakan saying in Upper Gambia speaks to the importance of the *jalan* to the social and ritual integrity of village: “If there is a village, it is sitting on something” (*Ni xaa dugu je, a be sigilin kule xan*). “Something” is an unambiguous reference to the physical site of the *jalan*.

evidence suggest that Tenda clans were the first known inhabitants of Upper Gambia. Some Mande narratives recount encountering Tenda when they migrated westward from the Mande heartland (the former kingdom of Mali) in the thirteenth century.⁷³ Tenda—whose subsistence strategies relied heavily on hunting and gathering—often chose to move rather than settle among incoming groups. In some cases, however, Tenda and Mande intermarried early on.⁷⁴

By contrast, most incomer groups in Upper Gambia were Muslim and ethnically Diahanke, Soninke or Fulbe. During the seventeenth and eighteenth centuries, these groups immigrated from Bundu, the Fouta Djallon, and the Niger Bend. On rare occasions, first-comer groups handed over their privileged rights to the bush to incomers in exchange for physical protection or ritual services, particularly from Muslim clerics. More often, incomers requested access to arable land to settle villages physically separate from those of first-comers. Many Muslims who migrated to Upper Gambia from the seventeenth to the nineteenth centuries considered shrines (*jalans*) to be idols, and some led localized iconoclastic movements to destroy *jalans*.⁷⁵ Throughout the eighteenth century, Fulbe and Tenda engaged in low-wage warfare as the former tried to forcibly convert the latter to Islam. These skirmishes likely pushed Tenda into the region's rocky and isolated escarpments, where many of their villages remain today.⁷⁶ But violence between first-comers and newcomers was relatively rare. Most incoming groups respected the jurisdiction of first-comers over the land and first-comers were often happy to

⁷³ Aubert, "Légendes historiques et traditions orales."

⁷⁴ The inter-mingling of Tenda and Mande villages is common in the province of Niokholo.

⁷⁵ ANS/11D1/0977, "Correspondance entre le Gouverneur du Senegal et l'Administrateur de la Haute-Gambie (1890-1915)"; Andre Aubert, "Légendes historiques et traditions orales recueillies en Haute-Gambie," *Bulletin du Comite d'études historiques et scientifiques de l'Afrique occidentale française*, 6 (1923).

⁷⁶ ANS, 10D1/0010, "Expédition du Niokolo contre les gens du Fouta Djallon," 1894; ANS, 7G/83 "Fouta-Djalon, Niocolo et Dentilia," 1896. See also André Aubert "Légendes historiques"; Robert Gessain, "Introduction à l'étude du Sénégal Oriental (Cercle de Kédougou)," *Cahiers du Centre de recherches anthropologiques*, XI^o, 5, 1-2 (1963), 5-85; and George Roure, *La Haute Gambie et le Parc National du Niokolo-Koba* (Dakar, 1956).

accommodate new migrants. Incomers would demonstrate respect for this pact by offering a portion of what they hunted or mined to their hosts.⁷⁷ These power-sharing agreements reflect a common pattern in the Western Sahel in which newer political rulers must share some measure of power with the original inhabitants who are vested with the ritual power over the land.⁷⁸

By the second half of the nineteenth century, two forms of ritual power competed and occasionally complemented each other in Upper Gambia. Muslims mobilized the written Qur'an, revered for its therapeutic and protective powers. These groups traced their lineages both real and imagined to mobile Muslim clerical families from Guinea, Mali, Mauritania, and even Northern Africa. Non-Muslims or traditionalists drew their ritual authority from more localized sources of power tied to the resources and nonhuman inhabitants of particular territories. By the late nineteenth century, authorities in some Mande villages, particularly those who lived near Muslim Diahanke villages, began to convert to Islam. However, these were were isolated conversions, which did not become widespread until the interwar period. For provinces such as Niokholo, many ethnic Mande did not convert to Islam until the 1970s and 80s--if they ever did.

Within the spatiotemporal spectrum between traditionalism and Islam, gold mining was situated firmly in the former. The reason for this should now be clear. Extraction was a form of ritual labor tied that involved making blood sacrifices to *jinne*. Similar to Muslims, most Mande and Tenda traditionalists in Upper Gambia believed in a single, Almighty God that presided over smaller and less powerful *jinne*.⁷⁹ But there were crucial differences. In the nineteenth century, Muslims in Upper Gambia considered the propitiation of *jalan* a form of iconoclasm. Further, the

⁷⁷ Moussa Keita, Tomboroncoto, Feb. 2014

⁷⁸ On this point elsewhere in Francophone West Africa, see Jean-Loup Amselle, *Mestizo Logics: Anthropology of Identity in Africa and Elsewhere* (Stanford, 1998); Peter Geschiere, *The Perils of Belonging: Autochtony, Citizenship and Exclusion in Africa and Europe* (Chicago, 2009); and Mike McGovern, *Unmasking the State: Making Guinea Modern* (Chicago, 2012).

⁷⁹ Moussa Keita, Tomboroncoto, Feb. 2014; see also archives of the *Mission Catholique*.

ritual sacrifices performed at the *jalan* were often performed in the name of the *jinne*—and not in the name of ‘Allah. Moreover, it was widely believed that the *jinne* could sense the ritual “essence” or “spirit” (*ni*) of men as they descended into the earth in search of gold. *Jinne* were known to favor and reward men with gold who followed the embodied practices of the “way of tradition” (*laada sila*) rather than the “way of Islam” (*diina sila*). *Laada sila* involved drinking libations and bathing in plant powders favorable to the *jinne*—as briefly described above. By contrast, the *jinne* disliked men who performed daily ablutions and recited the Qur’an. For this reason, many Mande authorities prohibited ablutions and Muslim prayers on the *dioura*.

There are a number of ways to interpret the hostility of the *dioura* and its *tanans* to the bodies and practices of Muslims. Certainly, differences in class and caste must be taken into consideration. Many Muslims who immigrated to Upper Gambia were clerics, long-distance traders, and cattle owners—sources of revenue that allowed them to opt out of some of the labor-intensive activities in which first-comer populations, lacking these means, engaged. Gold mining, which entailed laboring underground in dangerous conditions and during the hottest times of the year, was always considered a poor-man’s job.⁸⁰ On the other hand, Mande clans might have circulated interdictions against Muslim practices on the *dioura* to secure their control over these deposits in a context in which incomers possessed more wealth and mobile forms of knowledge than first-comers. Regardless, what archival accounts and oral histories make clear is that virtually no self-proclaimed Muslims engaged in gold mining in Upper Gambia in the nineteenth and early twentieth century. Mande traditionalist institutions oversaw sacred extraction, but actively incorporated other first comer groups into their *dioura*, such as Diallonke and Tenda. *Diouras* were the domain of first-comers and non-Muslims—men and women

⁸⁰ On this point, see Dumett, *El Dorado in West Africa*; Curtin, “The Lure of Bambuk Gold.”

considered ritually and historically closer to the earth and its nonhuman inhabitants.⁸¹

While tensions over ritual access to the *diouras* of Upper Gambia pivoted around intensely local histories of settlement, religious practice, and conversion, Mande institutions (*diourakuntigi*, *tombolman*) and taboos (*tanas*) were shared across large territories of the West African Sahel. In fact, even a cursory comparison of the ethnographic and historic literature on the “beliefs” and “customs” surrounding the extraction of gold in Upper Gambia, Bambuk, Boure, and Lobi shows remarkable continuity in the office of the *diourakuntigi* and *tombolman*.⁸² As elaborated in Chapter 6, these institutions appear to have traveled with the expansion of an indigenous mining frontier across the centuries and have long served as a way of managing and policing multi-ethnic cosmopolitan sites of extraction. Inter-ethnic blending was central to life on the mines, but the institution of the *diourakuntigi* and *tombolman* ensured that local authorities and ritual practices maintained authority over *diouras* within their territories.

Across the centuries, different polities on the Western Sahel attempted to tax and control the mining and sale of gold. Despite the diversity of political institutions in this zone, however, it appears that authorities across the Sahel recognized rights to the subsoil (land for gold and iron mining) and soil (land for farming and hunting) as distinct. Several practices reinforced this division. For one, governance of the soil and subsoil was divided between the *duutigi* (chief of the land) and the *diourakuntigi* (chief of the *dioura*). While the *duutigi* was often a hereditary

⁸¹ M. Dansakho, Bambaraya, Mar. 2014; Moussa Keita, Tomboroncoto, Feb. 2014; Mamadou Drame, Beledougou, Mar. 2014

⁸² Jean-Baptiste Kiethega, *L'or de la Volta Noire: Archéologie et histoire de l'exploitation traditionnelle, région de Poura, Haute-Volta* (Paris, 1983); Cristiana Panella, ed. *Worlds of debts; Interdisciplinary perspectives on gold mining in West Africa* (Amsterdam, 2011); Katja Werthmann, “Cowries, Gold and ‘Bitter Money’: Gold-Mining and Notions of Ill-Gotten Wealth in Burkina Faso,” *Paideuma* 49 (2003), 105-124; Marie B. Perinbam, “The Political Organization of Traditional Gold Mining: The Western Loby, c. 1850 to c. 1910,” *The Journal of African History* 29, 3 (1988): 437-462; Tilo Gratz, “Vigilante Groups and the State in West Africa, in Keebet von Brenda-Beckmann and Fernanda Pirie (ed.), *Order and Disorder: Anthropological Perspectives*, 74-89 (New York, 2007).

office, the *diourakuntigi* was elected by a community of miners—often at the beginning of each dry season. Further, a woman could become *diourakuntig*, but not *duutigi*. The most important qualifying characteristic of the *diourakuntigi* was a ritual affinity or sensitivity to the needs, desires, whims, and dangers of the resident *jinne* of the *dioura*. A second distinction was that specific individuals, families, or clans could retain control over access to farmland for generations (plots cleared of trees were coveted and handed down through patrilineal descent). By contrast, communal needs governed the creation of *diouras*. The discovery of gold in a field could even usurp the usufruct rights of an individual or family to that plot of land. In this event, men from the entire village would assist in clearing a new field, selected by the owner of the field where the gold was discovered, so that the entire community could exploit the *dioura*.

Diouras were considered a natural reserve for communal benefit. Anyone who abided by the rules and prohibitions of the *dioura*, as established by the resident *diourakuntigi*, could mine for gold. This included men and women from neighboring villages as well as long-distance migrants—strangers to the host village. In living memory, gold in *diouras* in villages that exclude migrants is known to disappear—because this exclusionary logic angers the *jinne*. In a sense, the ritual practices of the *dioura* insist on the status of gold deposits as a public good. Colonial officials were puzzled by the “generosity” of traditional authorities to strangers. They understood this behavior as child-like and short-sited, or assumed that the village chief (*duutigi*) profited from these stranger miners through forced extractions. In fact, in Guinea, Mali, and Senegal, it is only in recent decades—if at all—that *duutigi*’s demand a portion of the proceeds mined from *diouras* within their traditional territories. In the past, both local residents and strangers only gave a portion of their gold to the *diourakuntigi*, and this was purportedly to cover the cost of sacrifices. Scholars of gold mining in colonial Soudan argue that this practice

reinforces long-standing Mande notions of reciprocal exchange and “joking” relations (or *sununkuya*).⁸³ The logic is as follows: villages hosted strangers one year so that when their gold deposits were depleted in future years, they would be welcomed to mine in other villages. I also found evidence for this ethic of hosting in Upper Gambia. But this practice is not only pragmatic. Rather, I argue, it must be contextualized within a regional intellectual understanding of gold as a resource that was fundamentally for communal benefit—a reserve putatively open to everyone.

The incredible mobility of gold mining appears to have spread this deep regional understanding of the *dioura* across an enormous geographic expanse in West Africa. Because gold deposits could be depleted, specialized African miners were constantly prospecting for gold and opening fresh deposits for exploitation. Over the course of centuries, hundreds of villages were established across the Sahel that began as seasonal mining sites before becoming year-round residences—places of cultivation and reproduction. African experts in minerals—including prospectors, miners, blacksmiths, and ritual intermediaries—traveled across Senegal, Guinea, Mali, Burkina Faso, northern Cote d’Ivoire—in search of fresh gold deposits. They also sought adventure, fame, and knowledge of mining, smelting, and prospecting techniques from elsewhere. It is likely on account of this historic mobility that the ritual institutions and prohibitions governing *diouras* were so widely shared in the deeper past. The ritual imagery of Nininkala undergirded this extractive diaspora and its ritual institutions: a snake slithering underground, demanding sacrifices whenever she emerges to the surface. Miners mirrored Nininkala’s movements above surface, moving across the landscape in search of the gold veins she excretes in her wake as she consumes more ubiquitous iron deposits underground. Because this ritual genealogy is tied to a natural substance—gold—the geographic reach of the office of

⁸³ For example, see Jan Jansen, “What gold mining means for the Malinke, and how it was misunderstood by the French Colonial Administration,” In *Worlds of debts; Interdisciplinary perspectives on gold mining in West Africa*, Panella Cristiana (ed), 95-110 (Amsterdam, 2010).

the *diourakuntigi* appears to roughly align with the undergirding geology of the West African Birream greenstone belt. This has important implications for scholarly understandings of “traditional” religions in West Africa. Scholars have argued that “traditional” religions in West Africa are more localized than their implicit foils: Islam and Christianity.⁸⁴ Evidence from West Africa’s goldfields challenges this narrative. There was nothing “local” about the *diourakuntigi*: this ritual office is found in villages separated by thousands of kilometers.

To summarize, the notions of the subsurface as communal property was geographically widespread on the West African Sahel in the nineteenth century, and likely much earlier. Mande authorities made clear distinctions between governance of the soil and the subsoil. In many respects, this distinction was not unlike notions of subterranean property circulating among French travelers to Upper Gambia and Bambuk prior to colonial annexation in the 1890s.⁸⁵

The Devil’s Laboratory: Europeans in Search of Bambuk

“...the devil, who is the master of the gold mines”⁸⁶

Europeans first traveled to the West African coast in the late fifteenth century in search of gold, the source of which had fascinated European cartographers since Mansa Musa’s fourteenth century pilgrimage to Cairo. The arrival of Portuguese boats on the coast of Ghana in 1482 began to divert gold from the Sahara trade to the Atlantic coast. Dutch, British, and French merchants quickly entered the gold trade. In less than a century, the major commerce had shifted

⁸⁴ See discussions in Robert M Baum, *Shrines of the Slave Trade: Diola Religion and Society in Pre-colonial Senegambia* (New York, 1999); Walter Hawthorne, *Planting Rice and Harvesting Slaves: Transformations along the Guinea-Bissau Coast, 1400–1900* (Portsmouth, N.H, 2003).

⁸⁵ By the seventeenth century, France had established laws differentiating “soil” and “subsoil” property rights: individuals could own the soil, but the state owned the subsoil. Across Western Europe, many of these property distinctions dated back to regalia orders, but were strengthened or revised with growing demands for minerals—and the expansion of mining—tied to industrialization. French geologists commented on the affinity between African and French distinctions between surface and sub-surface property. For example, see Maurice Barrat, “Les mines d’or du bassin du Sénégal,” *Variétés* (1896).

⁸⁶ Golberry, *Travels in Africa*, 314.

to slaves. But from the 1680s to the 1880s, French merchants with a stronghold on the Senegal River never lost sight of the possibility of controlling the gold trade or production.⁸⁷ Embarking from forts near Felou Falls, which prohibited boat travel further south; French travelers documented the physical and social landscape of Bambuk and the gold producing regions of Upper Gambia.⁸⁸ Through direct observation and second-hand reports, the French compared African extractive methods to European ones. By the seventeenth century, the emerging consensus was that African miners were lazy, lacked technical competence, and “wasted” gold with the use of primitive tools and mechanical recuperation methods.⁸⁹ With improved tools and labor regimes, Europeans believed that Bambuk could become the “Peru de l’Afrique.”⁹⁰ Embedded in these accounts was an insipient argument, elaborated in the late nineteenth century, that it was incumbent on the French to seize and exploit resources improperly used by Africans.

In the eighteenth and nineteenth centuries, the French made several unsuccessful attempts

⁸⁷ Wilks, *Forests of Gold*, 2-3. Initially, the Portuguese acquired gold from African traders on the coast of Ghana by furnishing them with slaves, which they captured further south along the Atlantic coast. Portuguese sailors were the first Europeans to voyage down the Senegal in 1446. While these early explorers left no accounts of their incursions into Upper Senegal, later explorers report Mande oral histories that make mention of Portuguese travelers. See Paul E. H. Hair, “The Falls of Félou: A Bibliographical Exploration,” *History in Africa* 11 (1984), 113-130; Golberry, *Travels in Africa*, 307.

⁸⁸ Examples include Claude Boucard, “Relation de Bambouc,” *Bulletin de l’Institut Fondamental d’Afrique Noire*, Série B 36, 2 (1974 [1729]): 227-245; Frédéric Carrère and Paul Holle, *De la Sénégambie Française* (Paris, 1855); Chambonneau, “Relation du Sr Chambonneau, commis de la compagne de Sénégal, du voyage par luy fait en remontant le Niger,” *Bulletin de Géographie Historique et Descriptive* 2 (1898 [1688]), 308-321; Jean-Baptiste-Léonard Durand, *Voyage au Sénégal* (Paris, 1802); William Gray and Staff Sargeant Dochart, *Travels in Western Africa, in the Years 1818, 19, 20, and 21, from the River Gambia, through Woolli, Bondoo, Galam, Kasson, Kaarta, and Foolidoo, to the River Niger* (London, 1825); Richard Jobson, *The Golden Trade* (London, 1623); G. Mollien, *Travels in the Interior of Africa, to the Sources of the Senegal and Gambia* (London, 1820); Moore, Francis, *Travels into the Inland Parts of Africa* (London, 1733); Noirot, *A Travers le Fouta-Diallon*; Park, *Travels in the Interior Districts*; Rancon, *Dans la Haute-Gambie*; Anne Raffanel, *Voyage dans l’Afrique Occidentale* (Paris, 1846); Anne Raffanel, *Nouveau Voyage dans le Pays des Nègres*, 1 (Paris, 1856). The number of these textual sources is somewhat illusory. Many authors lifted details uncritically, and without citation, from the notes of their predecessors. For many of these citations, I am grateful to Cameron Gokee.

⁸⁹ Mollien, *Travels in the Interior of Africa*, 385; Golberry *Travels in Africa*, 276.

⁹⁰ Durand, *Voyage au Sénégal*, 350; Jean-Baptiste Labat, *Nouvelle relation de l’Afrique Occidentale* (Paris, 1728); see also discussion and citations in Adas, *Machines as the Measure of Men*, 112.

to tap Bambuk's gold resources.⁹¹ The most concerted and well-documented scheme was devised by General Louis Faidherbe and undertaken at Kenieba, between 1858 and 1860, following his defeat of the Muslim cleric, al-Hājj Umar 'Tal.⁹² This venture failed due to poorly adapted equipment, illness among the European workers, and poor returns.⁹³ Efforts by private prospectors in the 1880s suffered from similar problems.⁹⁴ As Philip Curtin argued years ago, the French were slow to realize that gold mining on the Sahel was not an indicator of wealth but of poverty.⁹⁵ Mining in Bambuk subsidized poor harvests drawn from the broken and rocky soils.

Historians have drawn on the paper trail generated by European travelers to Bambuk to reconstruct state making and trade in the Upper Senegal.⁹⁶ But these published reports and archival records are also saturated with references to mystical snakes, spirits, and sacrifices. In fact, Europeans attributed many of the "inefficiencies" of African mining techniques to African "beliefs" that gold belonged to "the devil." In particular, the second-hand chronicles of the Dominican Friar Jean-Baptiste Labat and the first-hand reports of the engineer Sylvain Golberry, established a clear link between the "wastefulness" of African mining and the African

⁹¹ M. Barrat, "Les mines d'or du bassin du Sénégal," *Variétés* (1896); Clark, *From Frontier to Backwater*; Curtin, "The Lure of Bambuk."

⁹² On the Keneiba project, see ANS 13G 250; Faidherbe, *Le Senegal* (218-20); *Annuaire du Senegal*, 441-2. A. Raffanel, *Voyage*; Rancon, *Le Boundou*. A good secondary account of Faidherbe's role in the ill-fated Kenieba scheme can be found in L. Barrows, "General Faidherbe, the Maurel and Prom Company and French Expansion in Senegal," 452-60. Curtin provides an excellent synthesis on reports on Bambuk. Archives directly concerned with mining in Bambuk include ANS 15G 121, ANS 1G 212, ANM 3Q (Mines). See Andre Delacourt, *Les établissements*; Machat, *Documents*; Labat, *Nouvelle Relation*; Vol II, pp3-4, Vol IV, 18-21; Curtin and Boulege, "Claude Bocard: Relation du Bambouk (1729)," *Bulletin de l'IFAN* 36B (1974).

⁹³ Prior to Faidherbe's incursion on Bambuk, the French had been tied to trading posts along the Senegal, but had not attempted to directly control the area militarily or economically.

⁹⁴ ANS P 464, Maurice Barrat, 'Note sur les mines du Soudan', 21 Oct. 1895.

⁹⁵ Curtin, "The Lure of Bambuk."

⁹⁶ For example, see Bathily, *Les portes de l'or*; Barry, *Senegambia and the Atlantic Slave Trade*; Gomez, *Pragmatism in the Age of Jihad*; Sanneh, *The Jakhanke Muslim Clerics*; Robinson *The Holy War of Umar Tal*.

understanding that the “devil” was the true “master of the mines.”⁹⁷ Faidherbe drew extensively on both texts when planning his 1858 scheme. Natives, these men argued, were “ignorant of the art of excavating mines” and did not know how to seek gold into the “very entrails of the earth”⁹⁸ Lacking ladders and mechanized equipment Africans could only “scratch the surface of the earth.”⁹⁹ The “simple and thoughtless negroes” reaped no more than “one fifth of the profit, which they might possess” using European tools and managerial oversight.¹⁰⁰

Two African mining practices in Bambuk troubled Europeans: the abandonment of mining sites before full depletion of the deposit and the lack of wooden supports in subterranean caverns. Several eighteenth century accounts described goldfields that Africans “no longer worked because of a superstition against it.”¹⁰¹ The African guide of one prospector refused to bring his guest to several abandoned mines because “those who attempted this exploitation in the past died or became crazy.”¹⁰² Other Europeans reported that Africans described gold as a “trickster (*être malin*), who is pleased by tormenting those that he likes, and for this reason, he often changes places.”¹⁰³ According to Europeans, cave-ins of local mining shafts were “the effect of their [Africans] own stupidity” and refusal to reinforce caverns with wood beams. They criticized African miners for attributing these accidents to the “vengeance of the ancestors” or the “work of the devil,” who is “jealous of someone extracting metal that is his property.”¹⁰⁴

⁹⁷ Labat, *Nouvelle relation*. Labat drew on the unpublished writings of Andre Brue and Michael de la Courbe, two French colonial administrations who served in Senegal in the late 1600s. Labat reported that Andre Brue, who was the general commander of the Compagnie du Sénégal in 1697, was the first to more systematically explore Bambuk. Cited in Labat, *Nouvelle Relation*, 55, see also 291-3.

⁹⁸ Golberry, *Travels in Africa*, 316-7

⁹⁹ Ibid.

¹⁰⁰ Durand, *Voyage au Sénégal*, 352; Barrat, “Les mines d’or du basin du Senegal,” 479.

¹⁰¹ Boucard, “Relation de Bambouc”; Durand, *Voyage au Sénégal*; Labat, *Nouvelle Relation*; Moore, *Travels into the Inland Parts of Africa*.

¹⁰² Hyacinthe Hecquard, *Voyage sur la côte et dans l’intérieur de l’Afrique occidentale* (Paris, 1853), 381.

¹⁰³ Durand, *Voyage au Sénégal*, 363-4.

¹⁰⁴ Golberry *Travels in Africa*, 322; Carrère, Frédéric and Paul Holle, *De la Sénégambie Française* (Paris, 1855), 172; Hecquard, *Voyage sur la côte*, 381.

Sacrifices of cows and chicken on the goldfields are also common in European accounts of the goldfields.¹⁰⁵ One traveler argued that locals did not know how to profit from gold because of a “common opinion that he who discovers a mine infallibly dies unless in eight days a black cow is burned for the gold, which is considered a sorcerer.”¹⁰⁶ Ernest Noirot describes miners “eating half of the sacrificed animal and giving the rest to the devil.”¹⁰⁷ Europeans frequently commented on the lack of Muslims or “priests” in Bambuk.¹⁰⁸ Sacrifices tied to gold mining were interpreted as evidence that “their [the miners’] beliefs were not those of Muslims.”¹⁰⁹

The authors of these accounts frequently contrasted European and African mining practices—juxtaposing “rational” European interpretations of cave-ins to African mystical “beliefs.” Many travelers to Bambuk planned to carry back soil samples from locally mined auriferous deposits to the *Musée Naturelle* and the *Jardin des Plantes* in Paris.¹¹⁰ Others asked local women to demonstrate gold washing techniques and descended into pits to observe men digging subterranean caverns.¹¹¹ Sampling of soils and observations of miners incurred the suspicion of some Africans. The Scottish explorer Mungo Park feigned disinterest in the “riches of their country” in order to earn trust from local authorities, who then, he reported, shared information about their mines without Park’s solicitation.¹¹² African authorities flatly rejected the requests of some travelers for soil samples or access to the goldfields. Travelers often interpreted such reticence on the part of African miners as a clever means of restricting the access of

¹⁰⁵ Park, *Travels in the Interior Districts of Africa*; René Caillié, *Voyage à Tombouctou* (Paris, 1830).

¹⁰⁶ Boucard, “Relation de Bambouc,” 17.

¹⁰⁷ Noirot, *A Travers le Fouta-Diallon et le Bambouc*.

¹⁰⁸ Boucard, “Relation de Bambouc,” 17; Golberry, *Travels in Africa*, 276.

¹⁰⁹ Carrère and Holle, *De la Sénégambie Française*, 172.

¹¹⁰ Hecquard *Voyage sur la côte* 1855; G. Mollien, *Travels in the Interior of Africa, to the Sources of the Senegal and Gambia* (London, 1820), 383.

¹¹¹ Boucard, “Relation de Bambouc,” 254.

¹¹² Park, *Travels in the Interior Districts of Africa*, 158, 170.

Europeans to the mines.¹¹³ This interpretation is quite plausible, considering that outsiders traveled to Bambuk in search of gold for several centuries and that more powerful African polities—such as Umar Tal’s state—had also forcibly controlled gold production. By far the most interesting convergence between African “beliefs” and the evolving trans-Atlantic economy was a widely reported narrative concerning the fate of the bodies of miners buried underground. African miners did not “reinforce pits,” the engineer Sylvain Golberry argued, because the “devil, the master and manufacturer of gold [...] occasions these accidents in order to procure slaves for himself.”¹¹⁴ Golberry elaborates on this practice in some detail:

The Bamboukains suppose that the devil fabricates gold at an immense depth in subterraneous caverns; that he causes this rich metal to be worked by slaves; that the number of these slaves employed in this factory is very great; that a certain quantity of them perish every year; and that the falling in of the pits is only a trick of the devil’s, who wants to get new slaves to replace those he has lost. Driven by this opinion, they are afraid to help the unhappy sufferers, afraid they would displease the devil if they were to try to save them, and thus deprive him [the devil] of his slaves, besides running the risk that his highness [the devil] would carry the gold out of the country, and establish his workshop in some other place.¹¹⁵

How do we interpret this account of devils, human sacrifice and underground factories? One reading can be located in West African logics of reciprocity with the nonhuman world. The “devil’s laboratory” could serve as a *jinne* mirror for the human world above: exchanging gold with humans for an occasional sacrifice. Falling into the infernal lair of the devil’s laboratory also speaks to the very real risks of the mines, the horrors of death by suffocation, and the violence that characterized exchange with subterranean spirits. Or we might consider that while Golberry considered this “traffic in slaves” between the devil and humans fantastical, these tales could be interpreted in a more literal register. At the time of Golberry’s writing, human men and

¹¹³ Mollien, *Travels in the Interior of Africa*, 383; Park, *Travels in the Interior Districts of Africa*.

¹¹⁴ Golberry, *Travels in Africa*, 293, 323.

¹¹⁵ *Ibid*, 294.

women were seized and shipped across the Atlantic for extractive labor in a devil's traffic.

Conclusion

This chapter argues that gold mining in Upper Gambia was a form of ritual labor, sacred extraction. Success in the *dioura* required ritual and technical expertise, skills in metals and sensitivity to the needs of goblins. People generated what we now call “usufruct property rights” by engaging with the nonhuman world to which gold belonged. By making sacrifices to *jinne* and *goto*, humans transformed ritual exchanges with the unseen world into property claims. In this way, ethnic groups or clans who nurtured intimate bonds with *jinne* became “first comers”--or made claims to this status--and brokered access to natural resources to “incomers.” Colonial occupation of the goldfields became a question not only of the potential economic value of land but also of property claims tied to sacred *jinne* territories. Attention to human relations with *jinne* also informs our understanding of how property claims were produced in the more distant past.

This chapter also places the broader focus of the dissertation—competition and collaboration between so-called “artisanal” and “industrial” miners—within the logics and institutions that governed extraction prior to conquest. It works to decolonize the study of “technology” in Africa by reading transformations in colonial property regimes *through* West African practices and ideologies of sacred extraction. Concerns over spirits, goblins, and the underworld were by no means restricted to Africans. During the eighteenth and nineteenth centuries, many Europeans juxtaposed the “superstitions” and “beliefs” of African miners with the “rational” and “modern” techniques of European miners. More self-reflective travelers recognized that these African “beliefs” in devils and subterranean laboratories articulated with Christian concerns over the ambiguous relationship of mining to the underworld. Maurice Barrat,

a French engineer who authored the first mining code of the federation of French West Africa in the 1890s, commented on the dense overlap between European and African ideas about gold.

Gold is cursed. Its power is infernal, in the center of Africa as on the banks of the Rhone, the fatted lamb, unearthed by the black (*noirs*) smiths, unclenches the worst passions, puts humanity in the hands with the blind forces of nature: Africa also has her Niebelungen.¹¹⁶

In Germanic and Norse mythology, Niebelungen is a dwarf—not unlike the *goto* that haunts the *diouras* of West Africa. As Barrat implies, both West Africans and Europeans shared a concern over the destabilizing forces of greed so often tied to subterranean wealth. The next chapter turns to how this dialogue—part European and part African—evolved when Africans entered into direct competition with French prospectors for access to *diouras* after conquest in the 1890s.

¹¹⁶ M. Barrat, “Les mines d’or du basin du Senegal,” 481.

PART II

Subterranean Nature In French West Africa

Part II of this dissertation examines how the French colonial state regulated and profited from the extraction of gold by colonial citizens (largely Europeans) and subjects (rural Africans) in French West Africa (*Afrique Occidentale Francaise*, hereafter AOF) from its formation in 1895 until its dissolution in 1956. Part II widens the geographic scope of the dissertation outward from Upper Gambia to track the creation of policies and migration of African miners across the *diouras* that became incorporated into AOF, a federation nine times the size of the metropole.¹ Africans mined gold in most colonies within AOF, but Mali, Guinea, and Senegal hosted the largest numbers of African and European miners under French rule.

Gold mining in AOF had a curious fate. During French conquest campaigns of the 1880s and 1890s, metropolitan-based investors and colonial officials hoped West Africa would become the “Californie” of imperial France. At the turn of the century, dozens of French companies took part in gold rushes in Guinea and Cote d’Ivoire. But these ventures proved disappointing. The “failure” of European gold mining in AOF solidified suspicions in Paris that France had chosen a bad lot in the colonies in terms of mineral riches and that AOF’s gold deposits could not be

¹ In 1895, France called for an end to military expansion in West Africa and a transition to civilian rule. The newly formed Colonial Ministry in Paris folded West African colonies into a centralized bureaucracy based in Senegal, overseen by a Governor General who reported directly to the Minister of Overseas Affairs. The federal administration of the federation transferred from St. Louis to Dakar in 1902. French West Africa was comprised of eight territories: Mauritania, Senegal, French Soudan (now Mali), French Guinea, Cote d’Ivoire, Haute Volta (now Burkina Faso), Dahomey (now Benin), and Niger. In 1914, France administered a portion of the former German protectorate of Togoland. Togo became a League of Nations mandate in 1916 and a UN trust territory after World War II. Catherine Newbury, “The formation of the government general of French West Africa,” *Journal of African History*, 1 (1960), 111-28.

profitably exploited by capital-intensive means. In the near absence of European mineral investments in AOF, the federal administration promoted gold mining by Africans by incorporating a “customary rights clause” into the federation’s mining code. This legislation was unique. Most colonial regimes outlawed mining by Africans altogether on the grounds that Africans possessed neither the tools nor the intelligence to rationally exploit minerals. For example, after the formation of the South African Union in 1910, it became illegal for Africans to own mines or even possess minerals. The British applied similar policies in Nigeria, Sierra Leone, and Southern Rhodesia.² Even the French outlawed gold mining by Africans in Madagascar and in *Afrique Equatoriale Francaise*.³ Most of these colonial states allocated the rights to exploit gold, copper, and diamonds exclusively to private concessionary companies.⁴

In colonial AOF, by contrast, indigenous gold mining expanded to unprecedented scales. Africans mined alongside and, at times, in direct competition with European mining enterprises. West Africans opened hundreds of new *diouras* and innovated new techniques. Until the mid-1950s, when phosphate and bauxite mines opened in Senegal and Guinea, AOF’s major mineral export was gold, over 90% of which was mined by Africans.⁵ AOF’s unique “customary rights” policy was influenced by the fact that West Africans had been seasonally mining for gold for

² On British mineral policies in West Africa, see Diane Frost, *From the Pit to the Market: Politics and the Diamond Economy in Sierra Leone* (Suffok, 2012), esp. chap. 1. The policies of the British toward Nigerian tin miners shared some features with those of the French toward African gold miners. Bill Freund, *Capital and Labour in the Nigerian Tin Mines* (Harlow, 1981). On South Africa’s policies, see Jonathan Crush, Alan Jeeves, and David Yudelman, *South Africa’s Labor Empire: A History of Black Migrancy to the Gold Mines* (Westview, 1991). On mineral policies in the Rhodesias, see Charles van Onselen, *Chibaro: African Mine Labour in Southern Rhodesia, 1900-1933* (London, 1976).

³ On mining policies throughout the French empire, see J. Lenormand, *L’or et le diamant en France métropolitaine et dans l’union française* (Paris, 1951), esp. chap. 4.

⁴ Most territories controlled by the British, Belgian, and Portuguese in Africa limited the access of Africans to land, allocating productive agricultural and mineral lands to white settlers and industrialists. In these colonies, Africans were forced to work as wage laborers on European-owned mines.

⁵ Between 1935 and 1939, it was estimated that African gold mining furnished over 90% of the total of 20 tons of gold exported by the federation. Charles Robequain, “Problèmes de l’économie rurale en AOF,” *Annales de Géographie*, 1937.

over a millennium. A ban on local mining, military officials recognized, could incite resistance to French occupation. Granting Africans a “right” to mine was a strategic political concession.

AOF benefited from indigenous mining by taxing the sale and export of gold. In line with other practices of indirect rule and the broader neo-mercantilism of AOF, French administrators left Mande ritual authorities (*diourakuntigi*, *tombolman*) to regulate extraction. In much of Southern, Central, and Eastern Africa, European states and concessionary companies attempted to control land and labor through direct means. By contrast, in much of West Africa, French and British authorities left production in the hands of Africans. Through head taxes and controlled prices, French authorities encouraged African farmers to cultivate, collect, and mine commodities in demand by metropolitan industries.⁶ AOF governed indigenous mining by this logic. During much of the colonial period, gold was highly valued in France, particularly after France depleted its gold reserves during World War I and when gold prices soared during the depression. Gold, mined by Africans, furnished the metropole with a valued resource, while Africans also used gold to pay head taxes and purchase imports.⁷

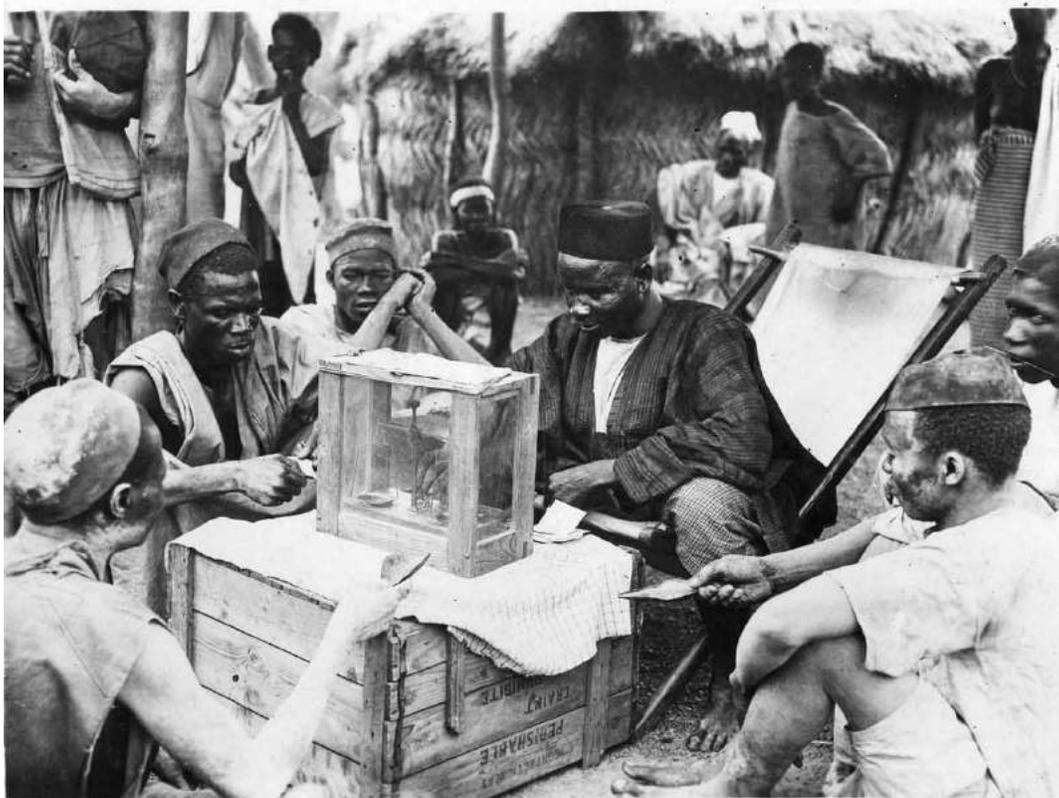
Orpailage, as the French called gold mining by African subjects, articulated with the broader mercantile policies of AOF, but it also posed challenges to an administration that idealized Africans as farmers—*les paysans noirs*—and discouraged industrial investments that could lead to “proletarianization” in the federation. Part II of this dissertation details how post-

⁶ C. Coquery-Vidrovitch, *L’Afrique occidentale au temps des Français: colonisateurs et colonisés, circa 1860-1960* (Paris, 1992), esp. ch. 5. Ralph Austen classifies colonial economies in West Africa as “etatist-peasant” compared to “direct competitive exploitation” in South Africa and parts of Central and Eastern Africa. Ralph A. Austen, *African Economic History: Internal Development and External Dependency* (Portsmouth, NH, 1987). The presence of European settlers crucially shaped these divergent colonial economies. It was in part due to high rates of malaria and yellow fever that relatively few Europeans settled in West Africa compared to other regions in sub-Saharan Africa.

⁷ In Guinea and Mali, and particular regions of Haute Volta and Senegal, gold became a primary means of paying for head taxes. Marie Rodet, *Les migrantes ignorées du Haut-Sénégal: 1900-1946* (Paris, 2009), 250; Luning, Sabine, Jan Jansen, and Cristiana Panella, “The Mise en Valeur of the Gold Mines in the Haut-Niger, 1918-1939,” *French Colonial History*, 15 (2014): 67-86.

colonial states struggled with the political ambivalence of the *orpailleur*—who was mobile and cosmopolitan, neither a full-time farmer rooted in place nor an industrial laborer overseen by European managers. Colonial officials readily admitted that it was nearly impossible to control and capture the profits of *orpaillage*, as it was well known that African traders (*dioulas*) smuggled gold across borders and into markets of British and Portuguese controlled territories, where the price of gold was often higher than in AOF. Further, under colonialism, *orpailleurs* became increasingly mobile, moving across *diouras* in different administrative zones and colonies. This legacy of evasion from state control is crucial to understanding contemporary patterns of movement and resistance to state regulation by *orpailleurs* in the former AOF today.

Neo-Mercantilism and Anti-Industrialism in French West Africa



(Figure 6: A *dioula* purchasing gold on a placer mine in Sigui, Guinea, 1942
Photo Courtesy of Institut Fondamental d’Afrique Noire)

AOF's colonial economy was based around controlling markets and tying rural producers of tropical commodities to colonial trading circuits dominated by French trading house monopolies based largely in Bordeaux.⁸ AOF's relationship to the metropole was organized around a classic colonial binary: the federation was a producer of raw materials for industries based in France and, at key moments, for the French army. French traders profited by purchasing peasant-produced products at suppressed prices while selling the same producers European imports (iron, sugar, textiles, bicycles) at elevated prices. In turn, colonial AOF profited by taxing the exports of French trading companies and extracting head taxes from rural Africans.

In contrast to elsewhere in colonial Africa, there were few European settlers in AOF beyond administrative centers and some plantations in Cote d'Ivoire and Guinea. Until the late 1930s France expected its African colonies to be self-financing. Road and rail infrastructure was focused on narrow corridors designed to evacuate palm oil, groundnuts, rubber, cocoa, and coffee to the ships on the coast bound for France. Peanut farming, focused in the central-west basin of Senegal, was the most important generator of receipts during much of the colonial period. The migration of thousands of Africans from Senegal, Guinea, and Mali to farm peanuts reinforced Senegal's position as the stronghold of French colonial power and infrastructure. Despite growing investments in the "social welfare" of Africans between the wars, and the drastic expansion of funds from metropolitan France to the colonies after World War II, AOF remained one of the most economically backward sectors of the French empire.

The organization of indigenous gold mining embodied core features of AOF's trade economy. Before World War I, AOF authorized Bordelaise trading houses—the most prominent

⁸ On market controls in AOF, see Catherine Boone, *Merchant Capital and the Roots of State Power in Senegal 1930-1985* (New York, 1992); Odile Goerg, *Commerce et Colonisation en Guinée, 1850-1913* (Paris, 1986); Jean Suret-Canale, *French Colonialism in Tropical Africa, 1900-1945* (New York, 1971).

of which were Chavanel and Peyrissac—to purchase gold.⁹ These merchants were required to sell gold either directly to the colonial state or to the Bank of AOF. In the 1930s, AOF extended commercial gold licenses to some “Lebanese” merchants in Mali and Guinea.¹⁰ Both French and Lebanese traders worked with African intermediaries, *dioulas*, who purchased gold directly from African miners, often in exchange for imports provided through these trading houses.

Some opposed AOF’s *laissez-faire* policy toward *orpaillage*. Administrators in French Soudan, for example, argued that *orpaillage* interfered with agriculture production, particularly of the cotton culture promoted by the Office du Niger. AOF’s Service of Geology and Mines argued that the federation had earned an unfair reputation as bereft of opportunities for industrial-scale mining. Successive Director’s of the Service proposed policy changes that would encourage private investment in AOF’s mineral potential—but these plans were largely marginalized until after World War II (see Chapter 3). At key moments, these competing concerns shaped colony and federal level policies toward African miners. But the most important influence on AOF’s policies toward *orpaillage* was the administration’s trenchant anti-industrial sentiments. This disposition was tied more to politics than to economics.¹¹ In the early decades of colonial rule, administrators embraced the French “civilizing mission,” an ambition to transform Africans into Frenchmen. By World War I, this assimilationist policy hardened into a conservative cultural relativism, deeply informed by colonial ethnography. The emerging consensus was that Africans should “evolve” and be ruled within the context of “traditional”

⁹ These French merchant houses were involved in the pre-war rubber trade in Guinea and transitioned largely into gold once global market prices for rubber plummeted in the 1910s. On the rubber boom, see Emily Osborn, “‘Rubber Fever’, Commerce and French Colonial Rule in Upper Guinea, 1890-1913,” *Journal of African History* 45 (2004): 445–65.

¹⁰ French colonial documents variously use the term “Syrien” and “Lebanese” to refer to immigrants from the Ottoman Empire who began to settle in West Africa in the early 20th century, and particularly after World War I. Most of these individuals engaged in trade and often competed with French merchants.

¹¹ Coquery-Vidrovitch, Catherine, “La politique économique colonial. »

institutions of different cultures or ethnic groups.¹² Both left and right wing political parties that occupied positions of power in AOF in the 1920s, 30s, and 40s shared the belief that Africans were “natural” farmers. Their policy agendas focused on promoting agriculture over industrial sectors that could transform peasants into a politically unruly “black proletariat.”¹³

In this context, French policies in AOF pivoted around efforts to modestly “modernize” or “rationalize” agriculture through family-based institutions.¹⁴ The first economic development plan for France’s overseas colonies—the “Saurrat Plan” of 1929—focused on agriculture for AOF, particularly cotton farming.¹⁵ The left-wing Popular Front, which came into power in France in 1936, began to address the question of industrial development in AOF head on. The “Conference économique de la France métropolitaine et d’outre mer” (1934) emphasized the role of the state in planning infrastructural provision to encourage private sector investments overseas. The Vichy-controlled government of wartime AOF also elaborated plans to expand industry in the colonies by over 18%. Blueprints for industrialization, tentative as they were in the 1930s and 1940s, languished in planning documents. The Bordelaise merchant lobby played a role in this by opposing any industrial initiatives that would disturb their control over markets.

The only industry encouraged by the administration was the mechanical de-shelling of peanuts, which constituted more than half of the federation’s exports. French merchants protested even this modest mechanization of peanut farming, effectively delaying the

¹² Alice L. Conklin, *A Mission to Civilize: The Republican Idea of Empire in France and West Africa* (Stanford, 1997); Gary Wilder, *The French Imperial Nation-State: Negritude and Colonial Humanism between the Two World Wars* (Chicago, 2005).

¹³ Catherine Coquery-Vidrovitch, “Vichy et ‘Industrialisation aux Colonies,’” *Revue d’histoire de la Deuxième Guerre mondiale*, 29, 114 (1979), 69-94; Ruth Ginio, *French Colonialism Unmasked: The Vichy Years in French West Africa* (Nebraska, 2006), 25.

¹⁴ Tony Chafer, *The End of Empire in French West Africa: France’s Successful Decolonization* (Oxford, 2002); Gary Wilder, *The French Imperial Nation-State*.

¹⁵ Monica van Beusekom, *Negotiating Development: African Farmers and Colonial Experts at the Office du Niger, 1920-1960* (Portsmouth, 2002); Richard Roberts, *Two Worlds of Cotton: Colonialism and the Regional Economy in the French Soudan* (Stanford, 1996).

establishment of the first peanut oil factories in Dakar until 1939. Thus, if a labor inspector commented in the mid-1930s that most production in French West Africa is “more often artisanal than industrial” (“*souvent artisanale qu’industrielle*”), this was the outcome of decades of policies to suppress industrial development buttressed by a powerful private merchant lobby.

Orpillage

“Most of the placers of Guinea, Soudan, and Senegal are exploited by an extremely mobile population that moves continually from one placer to another.”
—Gilbert Arnaud, geologist, October 7, 1944¹⁶



(Figure 7: Tools used by *orpailleurs* in colonial French West Africa, Sigiri Guinea, 1942, Courtesy of the Institut Fondamental d’Afrique Noire)

¹⁶ Archives Nationales du Sénégal, Dakar, Sénégal (ANS), Gilbert Arnaud, “Pour l’Ingénieur General, Directeur General des Travaux Publics,” Dakar, Oct 7, 1944.

In French West Africa, artisanal mining or *orpaillage* took a variety of material forms. As detailed in Chapter 1, most Africans mined alluvial or elluvial gold deposits during the colonial period. The weathering and the disaggregation of gold from lode ore and its transportation in the local water table produces these so-called “secondary” gold deposits. The pickaxe and calabash tied to rope—featured in the photograph above—were the primary tools used for mining secondary deposits. This toolkit is a remarkably adaptable, easy to repair, and “fluid” technology, as defined by Mariane de Laet and Annemarie Mol.¹⁷ The pickaxe (*solis*) is a variation on the *daba*, a multi-functional hand hoe used for cultivation across the Western Sahel.¹⁸ Blacksmiths in Senegal, Soudan, and Mali installed makeshift forges on placer mines for the dry season, where they forged and repaired *solis* for miners in exchange for a portion of the proceeds from gold mining. Similarly, calabashes doubled as containers to carry cloth and food to the mines. Women also used these hallowed gourds to wash gold as well as millet and sorghum for meal preparation. These tools were lightweight and easily transported from villages to the *dioura* at the beginning and end of each workday. Within a single day, miners could transport their tools and other belongings to a new *dioura* if they heard of the opening of a productive new *dioura* elsewhere. This flexibility contrasted with the heavy machinery European companies lugged to West Africa at the turn of the century that rusted in the seasonal rains.¹⁹

A fantastically complex network of expertise, tools, and infrastructures supported the intensification of gold mining by Africans in colonial AOF, particularly between the wars when

¹⁷ Marianne de Laet, and Annemarie Mol, “The Zimbabwe Bush Pump: Mechanics of a Fluid Technology,” *Social Studies of Science* 30, no. 2 (2000): 225-63, 227.

¹⁸ On these developments, see Libbie Freed, “Networks of (Colonial) Power: Roads in French Central Africa after World War I,” *History and Technology* 26, no. 3 (2010): 203-33, 204. In the deeper past, *solis* were, like the gold they mined, considered prestige items and could be included in bridewealth. See Terry S. Childs and David Killick, “Indigenous African Metallurgy: Nature and Culture,” *Annual Review of Anthropology* 22 (1993): 317-37, 330.

¹⁹ Robequain, “Problèmes de l’économie rurale en AOF.”

West Africans increased their mobility across different *diouras*. The concept of “sociotechnical system,” developed by historian of technology Thomas Hughes, is useful for conceptualizing how the techniques and labor organization of *orpaillage* was shaped by material constraints as well as political and cultural choices.²⁰ While there were large population concentrations in certain mining villages in the *cercle* of Siguiri in northeastern Guinea, it was also a remarkably decentralized and geographically expansive set of activities. Between the wars, gold mining was influenced by the introduction of new transport technologies. The influx of motorcars to AOF after World War I greatly facilitated the movement of people and grain imports to the goldfields. French and Syrien traders often coordinated the shipment of grain to placer mines in lorry trucks. This infrastructural provision was essential for feeding large numbers of people not engaged in farming and living far from home.²¹ The growing ubiquity of bicycles—prized possessions among the most successful gold miners—facilitated mobility across different *diouras*.

Gold mining villages dotting the savannah landscape of colonial Guinea, Soudan, and Senegal were cosmopolitan places. *Dioula* merchants established boutiques in villages and extended rice, cooking oil, clothing, and candles (for headlamps) to miners on credit, which they later recuperated in gold. In turn, *dioula* merchants sold gold to European merchant houses—whose prices were regulated by the colonial state. Artisanal miners were also embedded in complex social and moral networks on the goldfields. “Strangers” who arrived on the goldfields either negotiated to live with a resident family of the region, or they joined other migrants in makeshift villages constructed within walking or biking distance to the goldfields. The

²⁰ Thomas Hughes, *Networks of Power: Electrification in Western Society, 1880-1930* (Baltimore, 1983), 112.

²¹ Prior to the introduction of lorry trucks, grain was imported to the goldfields from Bamako by barges on the Niger. As early as 1912, millet and rice were sold for “famine prices” in Siguiri due to the high demand of miners who remained on the goldfields year-round. See Richard Roberts, “The Emergence of a Grain Market in Bamako, 1883-1908,” *Canadian Journal of African Studies* 14, 1 (1980): 37-54.

diourakuntigi (chief of the *dioura*) regimented work on the goldfields, selecting a group of men (*tombolman*) to operate as a security force for the *dioura*. Between the wars, relationships between these “traditional” authorities and miners became increasingly monetized. Some villages required miners to pay a portion of their earnings to the *diourakuntigi* (in the past this was a voluntary tribute) in exchange for access to the local *dioura*. Muslim clerics and other ritual specialists also circulated on goldfields, performing sacrifices to *jinne*. The sacrificial demands of mining generated a market for cows and goats, sold by Fulani herders on the *dioura*.

Some miners worked in a single *dioura* for the duration of the dry season, while others traveled hundreds of miles to work at different deposits. During the interwar gold boom, miners typically worked in teams to dig shallow-pit mines—45 to 60 centimeters in diameter and eight to fifteen meters in depth. Mining teams were often composed of three to four men, and two to three women, who may have been siblings, marriage partners, or sons and daughters of a single household head. Two to three men alternated the grueling work of digging the vertical shaft with hand-held iron picks, hoes, and axes. Women remained at the mouth of the pit, working a pulley system to hoist sterile rock to the surface. Once the auriferous layer was reached, women pounded and “washed” the ore, separating gold dust from silts and gravels.

The intensification of mining in colonial AOF also led to the emergence of new categories of miners, particularly the *sougoumbali*. Composed exclusively of young men, teams of *sougoumbali* specialized in extracting gold discarded by “family” mining teams. When mining teams reached the auriferous layer underground, they reoriented their digging to a horizontal angle in order to follow the curvature of the gold deposit. In order to prevent cave-ins in the expanding caverns, they used a portion of the auriferous rock to create a support pillar. Using an elongated *solli*, *sougoumbali* risked their lives by descending into abandoned pits—also known as

“old diouras” (*diourakuru*) to extract these golden pillars. Many lost their lives underground. Others earned fabulous returns on processing large chunks of earth known to contain gold. *Sougoumbali* traveled by bicycle, easily recognized by their sumptuous and fashionable clothing. Some even attached gramophones—a rare commodity in AOF—to the back of their bicycles.

The African *Orpailleur*: An Ambivalent Political Subject



(Figure 8: Women operating a pulley tied to a calabash, Siguiri, Guinea, 1942
Photo Courtesy of Institut Fondamental d’Afrique Noire)

Orpillage fit awkwardly into AOF’s pro-peasant and anti-industrial sentiments. On one hand, *orpillage* shared characteristics with peasant-based agricultural production. It was an alternative to “industrial” gold development, which AOF’s commercial lobby actively resisted. Further, family and village-based institutions controlled *orpillage*, which was considered a “traditional” activity. The colonial state also valued the flexibility and low capital investments of *orpillage*. One interwar administrator argued that “native mining” was preferable to European

industries, which asked the state for bailouts and to assist in forced labor recruitment. Further, he argued, it would be a grave political error to transform Africans into “salaried workers on European exploitations” which would create a dangerous “indigenous proletariat.”

At the same time, *orpaillage* did not fit into the bucolic vision of “traditional” West African peasant society promulgated by colonial administrators.²² Particularly between the wars, AOF’s officials celebrated the moral virtues of village-based agriculture because, in part, it was assumed to be under the control of “traditional” authorities. Administrators and ethnographers firmly located African “tradition” and political stability in the countryside. Colonial ethnographies of Mande agricultural production systems, in particular, shaped administrative notions of Africans as fundamentally rural and communal, members of ethnic and village-based “groups.”²³ While *orpaillage* was considered a traditional productive activity, it was far more mobile than agriculture.²⁴ While some men and women mined in *diouras* adjacent to their villages, others traveled hundreds of kilometers to pass the dry season mining. Within a single dry season, an individual might work in multiple *diouras*.

The mobility of *orpaillage* was a source of political tension for AOF, which, like most colonial states, attempted to control and survey the movement of both its citizens and subjects. AOF classified migrations as either “customary” or “modern” and generally encouraged the latter at the expense of the former. “Modern migrations” included seasonal migration to

²² Robert Delavignette, *Les Paysans Noirs* (Paris, 1947); Wilder, *The French Imperial Nation-State*.

²³ Maurice Delafosse, *Haut-Senegal-Niger, Vols I-III* (Paris, 1912); Mahmoud Mamdani, *Citizen and Subject: Contemporary Africa and The Legacy of Late Colonialism* (Princeton, 1996); and Wilder, *The French Imperial Nation-State*.

²⁴ This is not to say that agricultural production in these regions of West Africa was *not* mobile. Most ethnic groups in AOF’s auriferous zones conducted a type of swidden agriculture that involved leaving fields fallow for years at a time, which required the clearing of new forest land. Attempts by colonial states to fix agriculturalists in place are the subject of a vast historiography. For a particularly thorough treatment of the topic, see Henrietta Moore and Megan Vaughan, *Cutting Down Trees: Gender, Nutrition, and Agricultural Change in the Northern Province of Zambia, 1890-1990* (Portsmouth, NH, 1994).

Senegal's groundnut basin and migration to work on colonial infrastructural projects. *Orpaillage* was classified as a "customary migration" that should be curbed if it interfered with "modern migration."²⁵ *Orpaillage* was politically fraught for reasons other than mobility, however. Colonial officials and African male heads of households found *diouras* threatening for the same reasons they did budding colonial cities. Different generations, genders, and ethno-religious groups intermingled on placer mines. Miners who converged on large *diouras*, which hosted thousands of migrant miners at the height of the dry season, often experimented with new food, sexual liaisons, and forms of consumption discouraged in village-based life. Male miners occasionally celebrated a successful day in the mines with grilled meat or bottled wine, rare commodities in the villages where these men farmed during the rainy season.²⁶

The increasing monetization of life on colonial *diouras* was exemplified by the emergence of new liaisons forged between men and women exclusively for the dry season—called *furudioura* in Maninkakan ("dioura marriage"). These arrangements, which are still practiced in *diouras* today, included an exclusive sexual and labor contract. "Wives" would cook, launder clothes, and wash gold extracted by their "husbands" underground in exchange for physical protection and a portion of the proceeds from the mines. The intensification of extraction, particularly between the wars, also generated new opportunities for income generation. Women could sell prepared food or charge piece-meal for washing the gold of male miners. Historically, these services were performed exclusively by and for kin. Unmarried men turned to the mines to earn bride-wealth payments, financed in the past by their fathers and the proceeds of communal labor such as farming and animal husbandry.²⁷ In sum, the mines offered

²⁵ On this distinction, see Marie Rodet, *Les migrantes ignorées*; and Gregory Mann, *From Empires to NGOs on the West African Sahel: The Road to Nongovernmentality* (Cambridge, 2015), esp. chap. 5.

²⁶ Denise Savineau, "Séjour à Siguiri et sur quelques placers du Cercle, Avril 1938," 1-32 (Paris, 1938).

²⁷ Denise Savineau, "Séjour à Siguiri."

a means for women and “junior” men to accumulate independent wealth. A colonial official in interwar Guinea summarized the attraction of *orpaillage* as follows:

Malinkes guard their liberty to go to the mines as a livelihood, permitting them to escape, temporarily, familial discipline. This incites lots of young people to go to the mines, which contributes to the success of *orpaillage*.²⁸

Colonial Failures, Enduring Effects

In 1935 it was estimated that over 60,000 African gold miners were working in Siguiri, with another 30,000 in Bambuk in the Soudan, and 5,000 in the portion of Bambuk that spilled over Soudan’s border into Senegal.²⁹ These numbers rival those of the *navetanes* who migrated from eastern Senegal, Mali, and Guinea to farm peanuts in Senegal’s peanut basin in the 1930s. In 1939 alone, it was estimated that more than 65,000 “strangers” migrated to Guinea to mine gold. In the same year, over 64,000 seasonal laborers came to cultivate peanuts in Senegal.³⁰ Considering these statistics alone, it is striking that dozens of fine-grained historical monographs explore the economic and social history of *navetane* migration, while only a few articles and unpublished theses (including this one) study migration tied to *orpaillage* in colonial AOF.³¹

The nascent historiography on gold mining in colonial AOF is structured around variations of a single argument: the “failure” of European gold mining enterprises is archetypal

²⁸ Archives Nationales de la Guinée, 3 Q 10 Arnaud, Directeur des Mines de l’AOF, ‘Rapport sur l’organisation administrative, technique, et coopérative d’orpaillage’, Dakar, 11 Sep. 1944.

²⁹ Archives de la Direction des Mines et de la Géologie, Sénégal, Aubert, Inspecteur des Affaires Administratives, ‘Rapport sur la situation du commerce de l’or et sur l’exploitation des mines d’or de Siguiri par les indigènes’, 29 May 1934 ; Jean Suret-Canale, *La République de Guinée* (Paris, 1970); Marie Rodet, *Les migrantes ignorées*.

³⁰ In the same year roughly 64,000 seasonal laborers also migrated to the Senegambian basin to cultivate peanuts. See Philippe David, *Les navétanes: histoire des migrants saisonniers de l’arachide en Sénégal des origines à nos jours* (Dakar, 1980), 464-5, and Charles Robequain, ‘Problèmes de l’économie rurale en A.O.F’, 46, 143; Suret-Canale, *French Colonialism*, 223; Labouret, ‘L’Afrique Occidentale Française en 1934,’ 289.

³¹ Cheikh Anta Babou, *Fighting the Greater Jihad: Amadou Bamba and the Founding of the Muridiyya of Senegal, 1853-1913* (Athens, 2010); Donald Cruise O’Brien, *The Mourides of Senegal: The Political and Economic Organization of an Islamic Brotherhood* (New York, 1971); David, *Les navétanes*.

of colonial hubris and “misunderstandings” of regional geography and African economies. Scholars document that colonial officials and travelers described African miners as wasteful and inefficient, when, in fact, *orpaillage* techniques were well adapted to AOF’s geology and local labor constraints.³² This argument resonates with an earlier generation of environmental histories that critiqued the arrogance of official environmental policies in Africa by demonstrating that African agronomic and forestry practices were appropriate for the continent’s unique ecological conditions.³³ These studies powerfully dismantle racist colonial assumptions about African technological practice and labor organization. There are limits, however, to a Manichean focus on colonial “failures,” contrasted with African technological efficiencies. As anthropologist Gary Wilder has argued, historiography that is preoccupied with colonial failures—illusions versus reality, plans versus implementation—tends to reach important but by now unsurprising conclusions. Colonial power was divided, its projects did not always work out as planned, and such outcomes were often influenced by colonial peoples’ active interventions.³⁴ Moreover, insisting that colonial ambitions were dysfunctional, misguided, and doomed for

³² Philip Curtin was the first to make this claim in 1973. The “failure” of Europeans to profit from mining Bambuk, he argued, was tied to misunderstandings regarding the economic “realities” of African gold mining and the geological deposition of gold. Stephanie Samson argues that the “failure” of French gold mining embodied the larger failure of French colonialism in the realm of industrial production. Sabine Luning, Jan Jansen, and Christiana Panella argued that colonial officials and policies “misrecognized African mining practices” and were guided by “questionable values. Luning, Sabine, Jan Jansen, and Christiana Panella, “The Mise en Valeur of the Gold Mines”; Philip Curtin, “The Lure of Bambuk Gold,” *Journal of African History* 14, 4 (1973): 623-32; Stephanie Samson, “Les ‘trésors méconnus’ de l’Afrique subsaharienne françaises,” in *L’économie faite l’homme: hommage a Alain Plessie* (Geneva, 2011).

³³ For example, Melissa Leach and James Fairhead’s argue that colonial and post-colonial forestry technicians “misread” forest mosaics in Guinea as “relics” of once dense tree cover deforested by African farmers. In fact, they show, villagers created these islands by actively planting trees in a region that was once barren. James Fairhead and Melissa Leach, *Misreading the African Landscape: Society and Ecology in a Forest-Savanna Mosaic* (Cambridge, 1996). See also Grace Carswell, *Cultivating Success in Uganda: Kigezi Farmers and Colonial Policies* (Athens, 2007); and William Beinart, “African History and Environmental History,” *African Affairs* 99:395 (2000), 269-302.

³⁴ Gary Wilder, *Imperial Nation-State*, 78.

failure can obscure the “systematic features and systematic structural effects” of colonialism.³⁵

Chapters 2 and 3 examine two such “structural effects” of the “failure” of European gold mining—and the “success” of its indigenous counterpart—during the French colonial period. One “effect” is legal (Chapter 2), the other scientific (Chapter 3). Chapter 2 argues that the regulatory category of the “artisanal miner”—today a global category used in national mineral codes as well as international law—has origins in these colonial “customary” mining rights clauses. *Orpaillage* in French—or artisanal mining in English—was not a straightforward technical category. Rather, it demarcated the unequal division of mineral rights between colonial subjects and citizens. The colonial state allocated subjects unstable usufruct rights to gold deposits and citizens stable mineral concessions. Colonial officials and technicians experimented with diverse definitions of the “customary rights” of African miners based on the supposed technical restrictions of “traditional” African mining techniques and territories. All of these definitions empirically failed to match the actual practices and capacities of African miners. Despite this, with the rise of an increasingly globalized mineral industry after World War II, the late colonial state fixated on a highly “technical” definition of African mining “custom” based on the use of traditional tools and the exploitation of shallow alluvial gold deposits. This narrow definition of African mining rights was later incorporated into the mineral codes of independent African states and the policy recommendations of international agencies, such as the United Nations and the World Bank. Considerable legal and political work was invested in transforming a racialized partition of mineral rights into a “technical” category. Importantly, the “customary rights” clause created a unique precedent for the governance of African mining that would shape later generations of protest against state and corporate enclosure of the region’s vast goldfields.

As Chapter 3 argues, while French colonial administrators were making Africans into

³⁵ Ibid, 79.

“artisanal” miners, colonial geologists also benefited from the expansion of indigenous mining. While AOF’s “industrial” mining sector was tepid, the Service of Geology never stopped planning for a future European mineral industry. The expansion of indigenous mining in colonial AOF created opportunities to advance scientific understanding of the region’s subsoil. French geologists systematically studied, mapped, and tracked African miners. Operating on a shoestring budget in a federation that was eight times the size of metropolitan France, geologists relied heavily on African gold miners and prospectors to map the federation’s mineral deposits. Geologists sampled the soils of African mining pits (*puits d’orpailleur* or *puits Malinke*) and interviewed elders about abandoned gold mines. Many of the gold “discoveries” made by African miners, and documented by colonial geologists, became large-scale gold mines operated by the state and private companies only in later decades (see Chapter 4). In the vast territories that became colonial AOF, I argue, gold mining capitalism was reproduced not only through the imperial enclosure of nature, but also through the appropriation of African gold discoveries.

Together, Chapters 2 and 3 document that the AOF selectively encouraged, restricted, and occasionally criminalized mining by African subjects, while documenting the gold discoveries of Africans in order to promote a future European gold “industry.” State regulation of African miners, and appropriation of their expertise, were mutually reinforcing activities. To tell this story, we must return to a “golden promise” made by the French military at conquest to “protect” the rights of Africans in the auriferous provinces of Bambuk and Bouré to mine gold. Chapter 2 takes up the political and legal life of this promise.

CHAPTER 2

Customary Techniques: Making ‘Artisanal’ Miners in French West Africa



(Figure 9: *Orpailleur* ascending from a hand-dug mining shaft, Siguiri, Guinea, circa 1940, Photo courtesy of Institut Fondamental d’Afrique Noir)

Introduction: The Colonial Origins of “Artisanal” Mining

Since the late 1990s, so-called “artisanal” mining—also known as “small-scale” or “artisanal and small-scale mining” (or ASM)—has emerged in the global media and in the campaigns of international human rights and environmental organizations. Rising hard metal prices tied to the (now flagging) commodity boom, and shrinking revenues from agricultural

production worldwide, have attracted thousands of men and women from Mongolia to Bolivia and Senegal, to mine for gold, diamonds and copper using hand tools and basic machinery. It is estimated that artisanal mining is responsible for 15-20% of global mineral production and is the primary livelihood of 30 million people.¹ One popular media image of artisanal miners, promoted in films such as *Blood Diamond* (2007) on Sierra Leone's civil war, links informal extraction to forced labor, arms traffic, and warlords. Artisanal mining has also received considerable press for its nefarious environmental impacts, particularly mercury pollution from gold processing. For example, Tiffany and Company Foundation now partners with the World Wildlife Fund to combat destruction of rainforests by artisanal gold miners in Central Africa.² Similar partnerships are underway in Latin America. Over the past decade, programs to “formalize” artisanal mining on a global scale and mitigate its negative ecological impacts have also emerged at the heart of the rural policy agendas of the World Bank and the United Nations.³

But what exactly is artisanal mining? International organizations and the global mining industry use the term to refer to a capacious range of extractive activities that are informal and require minimal upfront capital. However, there is considerable diversity in the definitions used by states and regulatory agencies. Artisanal mining is variously defined by its technologies (“low tech”), labor requirements (“no mechanization” or “labor intensive”) or its legal status (“absence

¹ These are rough estimates based on extrapolations from regional and country-level studies. In particular, see International Labour Organisation. *Social and Labour Issues in Small-Scale Mines* (Geneva, International Labour Organization, 1999); N.S Jennings, “Addressing labour and social issues in small-scale mining,” *The Socio-economic Impacts of Artisanal and Small-Scale Mining in Developing Countries*, edited by Gavin Hilson, 151-60 (Balkema, 2003); United Nations Economic Commission for Africa, *Artisanal and small-scale mining and technology challenges in Africa* (Addis Ababa, 2003); World Bank, *The millennium development goals and small-scale mining* (Washington, DC, 2005).

² Accessed March 18, 2016, <http://www.asm-pace.org/>.

³ United Nations Economic Program, Reducing Mercury in Artisanal and Small-Scale Gold Mining, <http://www.unep.org/chemicalsandwaste/Metals/GlobalMercuryPartnership/ArtisanalandSmall-ScaleGoldMining/tabid/3526/Default.aspx>. See also the artisanal mining initiatives of the Blacksmith Institute: <http://www.blacksmithinstitute.org/artisanal-gold-mining.html>.

of formalization,” “illegal” or “lack of adequate regulatory framework”).⁴ A frequently cited definition, originally formulated by the World Bank in 1995, is “the most primitive type of informal, small-scale mining, characterized by individuals or groups of individuals exploiting deposits—usually illegally—with the simplest equipment.”⁵

One feature unites these diverse definitions: artisanal mining is an activity strongly associated with “developing countries” or the “global South.” While gold rushes in the United States, Canada, and Australia are relegated to museums and themed amusement parks, journalistic coverage and international policy attention of artisanal mining is focused almost exclusively on countries in the formerly colonized world. This raises important questions: How did West Africans—heirs to one of the world’s oldest indigenous mining traditions—become classified as the “artisanal” and “customary” counterpart to “modern” industry in the first place? How did an imperial geography of extraction become incorporated into post-colonial policies?

From the regional perspective of the federation of French West Africa, this chapter argues that the regulatory category of the “artisanal” miner—*orpailleur* in French—emerged from colonial-era mineral legislation. West Africans only became legible as “artisanal” miners, or *orpailleurs*, when the colonial administration legislated the right of colonial subjects (rural Africans) to minerals in a competitive legal framework with those of colonial citizens (namely French men). AOF defined the rights of African subjects in a “customary rights” (*droit coutumier*) clause in the federation’s successive mineral codes. Customary legislation accorded Africans usufruct rights to mine gold to particular depths and, after World War I, in specific zones. Colonial citizens, by contrast, accessed private property titles and concessions.

⁴ Hilson Gavin and J. McQuilken, “Four decades of support for artisanal and small-scale mining in sub-Saharan Africa,” *The Extractive Industries and Society* 1 (2014), 104-118, 104; International Labour Organisation, *Social and Labour Issues*.

⁵ Mamadou Barry, ed., *Regularizing Informal Mining: Proceedings of the International Roundtable on Artisanal Mining, Organized by the World Bank* (Washington, DC, May 17-19, 1995).

AOF was one of the few territories in colonial Africa to protect the “customary” mining rights of subject populations. Most colonial regimes outlawed mining by Africans altogether.⁶ For example, with the formation of the South African Union in 1910, it became illegal for Africans to own mines or possess minerals. The British applied similar policies in Nigeria and Southern Rhodesia, as did the French in their central African colonies.⁷ But in AOF, the colonial state largely left the cultivation of peanuts and palm oil, and collection of rubber and gold, in the hands of African households. AOF’s powerful French merchant lobby benefited from purchasing these peasant-produced products, including gold, and resisted proposals to industrialize AOF’s minerals in order to purchase locally mined gold at low prices controlled by the state.⁸

Because gold mining by both Africans and Europeans was permitted in French West Africa, interactions between the two groups were intimate and contentious. In comparison with the British, French mining enterprises in Africa were shoestring operations. The French often superimposed rudimentary mining equipment directly on gold deposits already mined by Africans. Colonial administrators of the late nineteenth described African mining techniques as “primitive” and “inefficient.” But for much of the colonial period, African miners proved far more efficient than Europeans at extracting gold at a profit. Since African and European extractive practice was entangled, AOF used legal mechanisms to demarcate the two groups.

The colonial state argued that divisions in subsoil rights mapped onto divergences in the technical capacities of African and European miners. Facts on the ground refuted this justification. For much of the French colonial period, Africans dug to similar depths and

⁶ Michael Adas, *Machines as the Measure of Men: Science, Technology and Ideologies of Western Dominance* (Ithaca, 1989).

⁷ Bill Freund, *Capital and Labour in the Nigerian Tin Mines* (Harlow, 1981); C. van Onselen, *Chibaro: African Mine Labour in Southern Rhodesia, 1900-1933* (London, 1976); J. Lenormand, *L’or et le diamant en France métropolitaine et dans l’union française* (Paris, 1951), ch. 4.

⁸ Catherine Coquery-Vidrovitch, *L’Afrique occidentale au temps des Français: colonisateurs et colonisés* (c. 1860-1960) (Paris, 1992), ch. 5.

extracted similar types of gold deposits as European miners. West Africans proved far more capable of turning a profit from the gold deposits of the Sahel than Europeans. Moreover, the techniques of African and European miners were not stable. African miners learned new prospecting methods from French geologists, while technicians appropriated the gold discoveries of African miners (see Chapter 3). At their origins, the categories of the “artisanal” and “industrial” miner were not straightforward descriptions of technological practice. In French West Africa, they were racial categories. This racialized logic is evident in the very terms used to refer to African and European miners in AOF. In metropolitan France, the term “*orpailleur*” referred to someone who separated gold from sandy soils by hand.⁹ But in AOF, even if Europeans conducted “*orpaillage*,” they were called “*mineur*.” Only Africans were called *orpailleur*. Even between the wars, when Africans furnished the metropole with several tons of gold per year and European companies floundered, colonial officials repeatedly characterized African techniques as primitive and inefficient and European ones as modern and rational.

This racial system of mineral rights was putatively abolished when West Africans became colonial “citizens” of the French Union in 1954 and citizens of independent West African states beginning in 1958. However, the high capital requirements for accessing “industrial” mining permits by the French Union and by independent African states effectively excluded most rural West Africans. At the same time, most independence-era mining codes outlawed *orpaillage* in order to encourage state-run mining industries. In the 1980s, West African states began to re-formalize artisanal mining, limiting the practice to the use of “traditional” tools, to alluvial gold deposits, or to restricted depths (e.g., 15 meters). In sum, over the long twentieth century, “artisanal mining” laws have made it effectively illegal for West Africans to innovate their own mining techniques and tools. With few exceptions, the only way

⁹ *Le Dictionnaire de l'Académie française* (8th ed., Paris, 1932), s.v. “*orpailleur*.”

for Africans to become “industrial” miners in this region has been to work as wage laborers for Euro-American firms. And it was only a result of decades of discriminatory regulations that the racial distinctions between *orpailleur* and *mineur* came to signify a technical distinction.

This chapter makes several contributions to the study of technological regulation in colonial and post-colonial Africa. For one, I argue that the bifurcation of artisanal and industrial mining (but one could likely extend the analogy to agriculture and other sectors) is similar to the creation of the more widely studied colonial dualisms of subject and citizen, primitive and civilized. Like the figure of the poacher, the artisanal miner is a form of lawlessness born with the creation of laws that partitioned nature based on racial or class-based hierarchies. Authorities have often paraded these racialized divisions as straightforward technical demarcations.¹⁰ Considering this, I analyze colonial mineral laws as a “technopolitical” classification system. Technopolitics refers to the strategic practice of designing or using technology to “constitute, embody, or enact political goals” and captures the often-unrecognized political power exercised by scientists and engineers in making technical decisions.¹¹ In this case, the technology in question is not a material artifact, but a legal category regulating extraction. .

African and European miners, French merchants and administrators, and African politicians debated and attempted to shape the future mineral codes of AOF and the political goals they were designed to perform. Territorial administrators and the French merchant lobby often argued for expanding the rights of African miners by adjusting the “customary rights” clause of the federal mining code. This benefited merchants who purchased gold from African miners at suppressed prices and sold them expensive manufactures and textiles in return. By

¹⁰ On the legal category of the poacher, see E.P. Thompson, *Whigs and Hunters*; Clapperton Mavhunga, *Transient Workspaces* (Cambridge, MA, 2013); and Karl Jacoby, *Crimes Against Nature*.

¹¹ Gabrielle Hecht, *The Radiance of France: Nuclear Power and National Identity After World War II* (Cambridge, MA, 1998), 15. On technopolitical categories, see Gabrielle Hecht, *Being Nuclear: Africans and the Global Uranium Trade* (Cambridge, MA, 2012), 14.

contrast, colonial engineers and geologists lobbied to limit the “customary” rights of subject populations in order to encourage the expansion of European mining “industry” in AOF. Stretched between these two camps, colonial administrators changed the “customary rights” clause of the federal mineral code several times between 1895 and the dissolution of empire in the 1950s in an effort to variously profit from indigenous mining, ensure political stability in the countryside, and also leave material and legislative space for European *mineurs*. In many respects, politico-legal debates over mineral rights materialized broader tensions in France’s imperial project between exploiting natural resources to the benefit of the metropole and “colonial humanitarianism”: advancing the social and economic welfare of African subjects.¹²

Finally, by tracking debates surrounding mineral rights in AOF, this chapter works to denaturalize the regulatory categories of the French empire in Africa. Recent studies reveal the underlying architecture of political and economic struggle inscribed in colonial categories of race, gender, labor, and political rationality, as well as terms more specific to the French colonial lexicon—such as the regulatory categories of the *indigène*, *indigénat*, and *population flottante*.¹³ This literature is crucial to rethinking the political and economic legacies of colonialism in French West Africa. It is thus remarkable that the “technical” categories of the colonial state have garnered so little scrutiny. Yet as scholarship on “development” and “the economy” elsewhere in Africa reveals, precisely because technical categories appear “natural”—and thus

¹² On this tension in British Africa, see Helen Tilley, *Africa as a Living Laboratory* (Chicago, 2011).

¹³ Bruce Hall, *A History of Race in Muslim West Africa, 1600-1960* (Cambridge, 2011); Emily Osborne, *Our New Husbands Are Here: Households, Gender, and Politics in a West African State* (Athens, OH, 2011); Fred Cooper, *Decolonization and African Society: The Labor Question in French and British Africa* (Cambridge, 1996); Gary Wilder, *The French Imperial Nation-State: Negritude and Colonial Humanism Between the Two Wars* (Chicago, 2005); A. Mbembe, *On the Postcolony* (Berkeley, 1996); Mahmood Mamdani, *Citizen and Subject: Contemporary Africa and the Legacy of Late Colonialism* (Princeton, 1996); Gregory Mann, ‘What was the *indigénat*? The ‘empire of law in French West Africa’, *The Journal of African History* 50 (2009), 331-53; Janet Roitman, *Fiscal Disobedience: An Anthropology of Economic Regulation in Central Africa* (Princeton, 2005); Alice Conklin, *A Mission to Civilize: The Republican Idea of Empire in France and West Africa, 1895-1930* (Stanford, 1997).

beyond the realm of public debate—they are powerful instruments for shaping the material world and political aspirations in their image.¹⁴ Returning to colonial debates over extractive techniques, and competing visions of how to manage the “natural patrimony” of Greater France, reveals that it took considerable political and legal effort to make African miners “artisanal.”¹⁵

This chapter proceeds in two parts. I begin by surveying the legal framework within which “customary rights” operated in French West Africa. I do this by comparing these laws to the regulation of natural resources elsewhere in colonial Africa. The remainder of this chapter proceeds chronologically, by focusing on key debates over customary mineral rights from the drafting of AOF’s first mineral code in 1895 and its revisions in the 1910s, 1930s, and 1950s.

Droit Coutumier

By defining the “customary rights” (*droit coutumier*) of Africans in federal mineral codes, AOF circumscribed the *orpailleur* as a regulatory subject—and one that was characterized as primitive and customary. Initially, *droit coutumier* gave Africans usufruct rights to extract gold using their “customary techniques”—iron picks and calabashes. Later, the clause was modified to restrict Africans to mining in “traditional” territories. *Droit coutumier* shared features with customary rights clauses incorporated into colonial forestry and land codes, which allowed Africans to use bush products or land for subsistence purposes. In contrast, access to individual property titles and concessionary rights was reserved for colonial citizens. In the case of mining, colonial citizens were almost exclusively men from metropolitan France.

¹⁴ James Ferguson, *The Anti-Politics Machine: ‘Development,’ Depoliticization, and Bureaucratic Power in Lesotho* (Cambridge, 1994); Timothy Mitchell, *Rule of Experts: Egypt, Techno-politics, Modernity* (Berkeley, 2002). On attempts to purify science and technology from politics, see B. Latour, *We Have Never Been Modern* (Cambridge, MA, 1993).

¹⁵ My analysis draws on methods for the historical study of ‘technical’ categories developed by Gregory Bowker and Susan L. Star, *Sorting Things Out: Classification and Its Consequences* (Cambridge, 2000).

Customary law was at the heart of the violence of European colonialism and its justifying logics.¹⁶ It was integral to French West Africa's legal system, which was bifurcated between regulations for citizens and those that applied to subjects.¹⁷ Citizens were judged by the civil code of the metropolis while customary laws governed colonial subjects.¹⁸ In AOF, a small number of permanent residents of Senegal's coastal cities were considered colonial citizens.¹⁹ The vast majority of West Africans were classified as subjects. On one hand, French officials argued that governing Africans by customary laws was a means of "protecting" and "respecting" African ways of adjudicating disputes, allocating resources, and meting out punishments for crimes. On the other hand, customary law was articulated as a temporary stepping-stone as Africans evolved their "primitive" social and moral mores toward "civilized" French norms and laws. Herein lies the contradiction in colonial customary law: it enforced racial difference at the same time as it was supposed to broker the evolution of Africans into Frenchmen.

Enforcing African "custom" proved difficult, however, and was influenced by politics far beyond the control or even comprehension of French authorities. To document local customs,

¹⁶ Mbembe, *On the Postcolony*; Mamdani, *Citizen and Subject*; Roitman, *Fiscal Disobedience*; Mann and Roberts, *Law in Colonial Africa* (Portsmouth, 1991). Thomas Spear, 'Neo-Traditionalism and the Limits of Invention in British Colonial Africa,' *Journal of African History*, 44 (2003): 3-27; Brett Shadle, 'White Settlers and the Law in Early Colonial Kenya,' *Journal of Eastern African Studies* 4 (Nov 2010): 509-23.

¹⁷ Not all legal codes applying to colonial subjects in French West Africa appealed to a pretense of custom. On this point, see Mann, "What was the *indigénat*?"

¹⁸ British Africa was based on common law, which was established through legal precedents in the ruling of judges on specific cases. In France's civil law tradition, which was applied in part to the colonies, the government legislates the law through codes. For a succinct overview of these differences in colonial Africa, see Richard Roberts, "Law, Crime, and Punishment in Colonial Africa," in J. Parker and R. Ried (eds.), *The Oxford Handbook of Modern African History* (Oxford, 2013).

¹⁹ Colonial citizenship in AOF has produced a rich historiography. Notably, see Catherine Coquery-Vidrovitch, "Nationalité et citoyenneté en Afrique Occidentale Française: originaires et citoyens dans le Sénégal colonial," *Journal of African History*, 42 (2001), 285-305; Mamadou Diouf, "Assimilation colonial et identité religieuses de la civilité des originaires des Quatre Communes (Sénégal)," *Canadian Journal of African Studies*, 34 (1999), 565-87; and G. Wesley Johnson, *The Emergence of Black Politics in Senegal: The Struggle for Power in the Four Communes, 1900-1920* (Stanford: Stanford University Press 1971). On political membership in postwar AOF see Frederick Cooper, *Citizenship between Empire and Nation: Remaking France and French Africa, 1945-1960* (Princeton, 2014).

French officials collaborated with African clerks, ethnographers, canton chiefs, and elders. And these African intermediaries often emphasized aspects of custom that suited their particular political or moral agendas.²⁰ While AOF's administration commissioned dozens of studies on customary law, they rarely codified the results or used these jurisdictions in courts.²¹ An exception to the rule was "customary rights" to natural resources, which were clearly delineated in forestry, mineral and land codes drafted on the heels of colonial conquest.²² The reason for this was the urgency of the Colonial Ministry to transition from military conquest to a more systematic exploitation (*mise en valeur*) of its newly acquired territories. Codes created a legal arena for the Ministry to permit and tax metropolitan timber, mineral, and agricultural firms.

Over sixty years of colonial rule, the French Colonial Ministry commissioned dozens of mining engineers, geologists, and jurists to study the customs of African gold miners. But the geography of AOF and the materiality of mining made the codification of these customs elusive. Within a federation covering 4.6 million square kilometers, there was not one kind of African mining custom, there were many. Moreover, in contrast to defining African marriage or inheritance customs, geologists had to locate a definition of *droit coutumier* that avoided the creation of competition with Europeans who exploited the same substance.

²⁰ In this way, the collection of "customary law" across colonial Africa became a key arena in which men and women attempted to retain control over or challenge land claims, relationships of gender and generation, and certain ethnic and religious norms. See footnote 13 and Sara Berry, *No Condition is Permanent: The Social Dynamics of Agrarian Change in Sub-Saharan Africa* (Madison, WI, 1993).

²¹ This gave French administrators, and state-appointed chiefs, the power to apply or ignore 'custom' to suit their needs. The state claimed that this regulatory fluidity embodied the republican stance that Africans would, in time, evolve their 'customs' through exposure to French civilization. On the collection of 'customs' in colonial AOF, see Conklin, *A Mission*; Wilder, *The French Imperial Nation-state*, 106-11; Mann and Roberts, *Law in Colonial Africa*; Jean-Herve Jézéquel, 'Collecting customary law: educated Africans, ethnological writings, and colonial justice in French West Africa, in B. Lawrence, E. Osborn, and R. Roberts (eds.), *Intermediaries, Interpreters and Clerks: African Employees in the Making of Colonial Africa* (Madison, 2006).

²² Jessie Ribot, 'Decentralization, participation, and accountability in Sahelian forestry: legal instruments of political-administrative control', *Africa* 69:1 (1999), 23-65.

Faced with these constraints, officials in AOF made numerous revisions to *droit coutumier* on the grounds that earlier codes failed to account for the “true customs” of African miners. Despite this regulatory fluidity—and the fact that both African and European mining techniques evolved over time—the administration insisted that divisions between the rights of colonial subjects and citizens to the subsoil were based on “natural” differences in the techniques, tools, and labor practices of each group. Similar to other codifications of African custom, *droit coutumier* did not map onto “reality.” Rather, *droit coutumier* codified a selective hybrid of actual African techniques and administrative efforts to shape those practices to particular ends.²³ As the needs of AOF shifted, so did *droit coutumier* and the logics used by technicians and jurists to justify these changes. Revisions to the code oscillated between two objectifications of African mining custom: depth limitations based on the use of customary tools (techniques) and traditional mining regions (geography). After World War II, African politicians challenged these definitions of African mining rights, inspiring debates that continue today.

The Golden Promise of Conquest

The debate over the “customary rights” of African gold miners erupted from the violence of conquest, when African and French miners first entered into direct competition. The *droit coutumier* of African gold miners was first codified in the hasty aftermath of conquest, and a full decade before the federation of AOF established native tribunals and other customary legal frameworks.²⁴ In 1895, the Colonial Ministry in Paris sent a mining engineer, Maurice Barrat, to Soudan and Senegal to study the “technical and political conditions” for drafting a federal

²³ This point builds from the arguments of R. Roberts and K. Mann, ‘Law in Colonial Africa’, in Roberts and Mann (eds.), *Law in Colonial Africa* (Portsmouth, NH, 1991), 8; and T. Spear, ‘Neo-traditionalism and the limits of invention in British Colonial Africa’, *The Journal of African History* (2003), 3-27, 3.

²⁴ R. Roberts, *Litigants and Households: African Disputes and Colonial Courts in the French Soudan 1895-1912* (Portsmouth, NH, 2005), esp. chap. 2.

mining code. At the time, the Ministry was receiving daily requests for gold exploration permits by metropolitan firms inspired by the descriptions of “native mines” penned by military commanders in the popular press accounts of their conquest campaigns.²⁵ At the time, Paris controlled only a fraction of global gold production. With the pegging of the French Franc to the gold bullion standard in 1873, it became paramount to expand France’s gold reserves. The Colonial Ministry hoped West Africa would become the new “Californie” of imperial France.

The French dream of exploiting West African gold was an old one (Chapter 1).²⁶ It was in search of Bambuk and Bouré—fabled sources of the Saharan gold trade for a millennium—that European merchants first traveled to West Africa in the late fifteenth century. The slave trade dominated European commerce for the next three centuries, but French merchants and administrators, based in the coastal colony of St. Louis, Senegal, never stopped speculating about how to control either indigenous gold trade or production.²⁷ General Louis Faidherbe, who became the governor of Senegal in 1854, was the primary architect behind Senegal’s territorial expansion in the second half of the nineteenth century. Faidherbe saw the seizure and exploitation of West Africa’s goldfields as one of the primary benefit of French expansion. Faidherbe hoped to expand French influence to the interior through expansion up the Senegal River valley and later across the Sahara, perhaps as far as the fabled city of Timbuktu. However, the Senegal Valley—including the goldfields of Bambuk—was under the growing sphere of

²⁵ Joseph Gallieni, Louis Archinard, and Louis Faidherbe wrote about their military excursions into the West African interior for metropolitan publics. As Gallieni pursued Samori into the river basin of Tinkoto and into Cote d’Ivoire, he wrote about villages built atop gold deposits and natives extracting gold “a little bit everywhere.” Archives Nationales du Sénégal, Dakar (ANS) P 464, Barrat, ‘Note sur les mines du Soudan’, 21 Oct. 1895; Centre d’Archives d’Outre Mer, Aix-en-Provence, France (COAM), AOF, XIII, 2, 4, ‘Régime Minière.’ General Louis Faidherbe, *Revue Coloniale*, tome XX.

²⁶ Emile Serrant, *Les mines et gisements d’or de l’Afrique occidentale* (Paris, 1889) ; Louis Le Barbier, “Comment les Noirs extraient l’or a la Cote d’Ivoire,” *Le Tour du Monde* 25 (1903), 98-99.

²⁷ P. Curtin, ‘The Lure of Bambuk Gold’, *The Journal of African History* 14:4 (1973): 623-31.

influence of the Muslim cleric and state-builder, al-Ḥājj Umar Taal.²⁸ Taal was hostile to French trade interests on the Senegal River and repeatedly battled French troops. In 1858, when Faidherbe defeated Taal at the battle of Medine, he sent a fleet of technicians to exploit the goldfields of Bambuk, previously under Taal's jurisdiction.²⁹ This expedition was short-lived: mortality was high, production was low, and the French abandoned the post in 1860.³⁰

Speculative interest in the region's gold potential was rekindled during the massive expansion of French control over territory in the West African "interior" in the 1880s and 90s.³¹ What became known as the "scramble" for Africa was, in part, inspired by competition among European powers and fantasies of acquiring quick riches from Africa's "hidden mines." French promoters relied on accounts written by travelers to West Africa who described African mining techniques as "primitive and childish." With "scientific" techniques and "modern" labor organization, promoters argued, Europeans could pull easy profits from the same deposits.³² In particular, the seizure of the famed goldfields of Bouré of northeastern Guinea—once controlled by the Medieval Malian empire—kindled speculative interest among metropolitan investors. In 1892, when the French captured Bouré, the province was under the control of Samori Touré, a

²⁸ Originally from Halwar in Fouta Toro of northern Senegal, Taal launched a major Islamic reform movement in eastern Senegambia. In 1853, while based in Dinguaraye (present-day Guinea), Taal declared a *jihad* with the vision of converting the land into one of believers in Islam (*dar al-Islam*).

²⁹ In 1854 Taal seized the region of Bambuk, establishing a temporary capital in the village of Farabana. Taal's intermediaries oversaw local gold extraction. See Robinson, *Holy War*.

³⁰ P. Curtin, 'The Lure of Bambuk Gold.'

³¹ One reason for increased optimism was medical improvements, namely advances in anti-malaria treatment with quinine, reduced the risks of travel in West Africa Europeans. Colonial promoters argued that colonial "pacification" of the region would finally create safe passage for European prospectors.

³² Louis Le Barbier, 'Comment les Noirs extraient l'or.' See also Emile Serrant, *Les mines et gisements d'or de l'Afrique occidentale* (Paris, 1889). Descriptions of Africans as technologically backward became a primary justification for the European expropriation of land during the "scramble." Some colonial promoters went so far as to argue it was morally incumbent upon Europeans to seize and develop regions occupied by less advanced peoples who were unable to make use of these resources.

Maninka state builder from Guinea and the French military's most formidable opponent.³³

Battles with Taal and Touré claimed the lives of more French and African soldiers than in all of the combined battles of conquest in Africa in the nineteenth century.³⁴ Impervious to their own role in keeping “oppression” and violence alive in West Africa, the French military justified their pursuit of Taal and Touré on the grounds that they were bringing “civilization” and “liberation” to Africans under the yoke of feudal despots. After declaring the Bouré goldfields the property of imperial France, military commanders made a promise to protect the right of local populations to mine gold.³⁵ This concession was intended to distinguish French rule from that of Taal and Touré, who both requisitioned gold by force from local populations. While the French routinely broke oral and written treaties with African intermediaries, the colonial administration of AOF would adhere quite remarkably to this golden promise.

The military's “golden promise” shaped the unique legal design of AOF's first mineral code. Upon arriving in Senegal in 1895, Maurice Barrat set out to design a colonial mineral regime that “respected native rights and customs,” while also carving out a legal jurisdiction for European miners who would, as the Colonial Ministry anticipated, contribute more to “public wealth.”³⁶ In order to learn about the mining “customs” the military had promised to protect, Barrat studied reports about African mining techniques penned by French explorers and military officers. In 1895, most written accounts of African gold mining were based on observations of alluvial or “placer” mining along the Faleme River. A primary tributary of the Senegal River, the Faleme had served as the main entryway for French travelers to the province of Bambuk since

³³ Between 1870 and 1875, from a base in the Guinean highlands, Samory Toure acquired massive new territories to the east and to the south of the Niger River, including Bouré. By 1892, the French had pushed Samori out of Bouré, although he evaded capture until 1898.

³⁴ Conquest was undertaken by a handful of Frenchmen and African soldiers. A.S. Kanya-Forstner, *The Conquest of the Western Sudan: A Study in French Military Imperialism* (Cambridge, 1969).

³⁵ ANS P 464, Barrat, ‘Note sur les mines du Soudan’, 21 Oct. 1895

³⁶ Ibid.

the eighteenth century. Relying heavily on second-hand accounts of African mining in Bambuk, Barrat fixated on the perceived material limits of Africans' "customary" tools as the primary criteria for defining the *droit coutumier* of African subjects to mine for gold. The "customary" use of handpicks and calabashes, Barrat surmised, limited Africans to exploiting "superficial" or "alluvial gold" deposits; that is, gold disaggregated from parent-rock compounds and transported through the water table. This "natural" limitation to African mining would free Europeans to extract lode ore deposits located deep beneath the earth without violating the "customary" rights of African miners. Barrat thus suggested demarcating the rights of French subjects and citizens on a vertical scale. Africans and Europeans could mine within the same territory, but Africans would extract surface deposits "to the depth they can reach with their current procedures." while European operations would exploit lode ore that "escaped the reach of the primitive techniques of the natives."³⁷ In 1896, this vertical segregation of subsoil rights was ratified in the mineral code of Senegal and French Soudan. In 1899, it was extended to the entire federation of AOF.

Customary Conflict in French Guinea

By the turn of the twentieth century, African gold miners in the province of Bouré—which became the administrative circle of Sigouri in French Guinea—were challenging Barrat's claim to have codified the "natural" material limits of Africans' "customary" tools. To generate income to pay colonial head taxes, rural dwellers across Soudan, Guinea, and Senegal began migrating in large numbers to goldfields abandoned during the turbulence of conquest.³⁸ African Muslim traders, called *dioula*, installed boutiques in mining villages, where they exchanged gold

³⁷ ANS P 464, Barrat, 'Note sur les mines du Soudan', 21 Oct. 1895.

³⁸ On migration to the placer mines of Bambuk during this time, see Marie Rodet, *Les migrants ignorées du Haut-Sénégal* (Karthala, 2009), 256.

for cloth, salt, imported rice, and coin.³⁹ Most *dioula* worked as intermediaries for French and *Syrien* merchants.⁴⁰ By 1910, as indigenous mining expanded on the goldfields of Guinea, the colony had issued over 390 permits to European (mostly French) mining outfits. Although only a fraction of these enterprises ever ventured into Guinea, those who did came into conflict with African miners who were already busy extracting several tons of gold from the earth per year.



(Figure 10: View of a placer mine, Siguiri, Guinee, 1942,
Photo courtesy of Institut Fondamental d’Afrique Noir)

The Colonial Ministry had hoped to attract investors capable of building subterranean mines thousands of meters underground, similar to those of British controlled mines in the Gold Coast (now Ghana) and in South Africa. But prewar attempts to “industrialize” gold mining in

³⁹ On early twentieth century *dioula* trade networks, see Emily Osborn, “‘Rubber fever’, commerce and French colonial rule in Upper Guinée,” *The Journal of African History* 45 (2004), 445-65.

⁴⁰ The term ‘*Syriens*’ was later replaced by ‘*Libanais*’ and was a gloss used by the colonial state to refer to a heterogeneous group of merchants who migrated from the Levant to the AOF beginning in the late nineteenth century. Odile Goerg, *Commerce et colonisation en Guinée, 1850-1913* (Paris, 1986), ch. 3.

AOF were disappointing. The French mining ventures in AOF had few funds and even less knowledge of regional geology. Arriving in groups of two or three, with African porters from Dakar and Conakry, French miners did not prospect for deep lode ore. Rather, they requested permits that transposed directly on “ancient” or recent pits “dug by the natives.”⁴¹

The most publicized conflict between French and African miners took place on the mountain of Fatoya, a day’s walk to the northeast of Siguiri. Local residents had intermittently mined Fatoya for decades, earning it a reputation as a choice concession for French miners.⁴² In 1910, with a permit to exploit lode ore, a French enterprise called the “Compagnie des Mines de Siguiri” installed rock-crushing machines and a gold washing facility on the northern edge of the mountain. As provisioned by the mineral code of 1899, Africans could exploit “superficial” deposits within the company’s permit, but local miners challenged the definition of “superficial.”

In contrast to Bambuk, where local populations largely mined alluvial gold, specialized groups of miners in Bouré used elongated iron picks and fire to disaggregate gold lodged in lode ore deposits of quartz and other minerals. The release of carbon monoxide underground typically limited the depth to which African miners could dig to roughly thirty feet. However, the porous geological structure of Fatoya mountain created natural aeration, enabling local miners to dig far deeper into the core of the mountain. In other words, on Fatoya mountain, African miners extracted gold deposits that Maurice Barrat believed were beyond “the reach of their primitive techniques.”⁴³ For several dry seasons, African miners labored on the north side of the mountain, while workers for the “Compagnie” remained to the south. By 1914, Africans began to “attack”

⁴¹ Archives Nationales de la Guinée, Conakry, (ANG), 3 Q10, ‘Rapport du contrôleur des mines to the Lieutenant-Gouverneur de la Guinée Française (GGF), 25 Apr. 1909.

⁴² ANS P 468, ‘William Atherton Report, Province of Bouré’, 18 Dec. 1902.

⁴³ ANS P 464, Barrat, ‘Note sur les mines du Soudan’, 21 Oct. 1895.

the central “corridor of the company’s concession with their picks and shovels.”⁴⁴ The *commandant* of Siguiiri organized a palaver with hopes of resolving the conflict. However, local miners demonstrated an acute awareness of the mineral code and argued that they had no intention of ceding their “*droit coutumier* to exploit superficial deposits to the Compagnie.”⁴⁵ After contentious debates and a controversial ruling, the governor-general of AOF supported the claims of African miners and forced the “Compagnie de Siguiiri” to close its operations.⁴⁶

The conflict at Fatoya revealed the fiction of Barrat’s claim to have created a legal codification of subsoil rights that mapped onto a “natural” division in the technical capacities of African and European miners. While the tools of African and European miners differed, their productivity was “still similar” and they competed to exploit the same gold deposits.⁴⁷ Further, while local administrators described European techniques as “more refined” than those of Africans, French miners failed to turn a profit on their capital and labor investments while Africans, working in extended family groups, pulled considerable profits from the subsoil. Patently embarrassed by this discrepancy in extractive productivity, AOF’s mining engineers blamed the “failure” of French mining in Siguiiri on the legal clause of *droit coutumier*, which left Europeans vulnerable to the “invasions of native miners.”⁴⁸ They argued that “customary rights” prevented the “rational” exploitation of the subsoil and robbed the state of crucial revenue.⁴⁹ On the heels of a heated debate over the “conflict on Fatoya,” then Governor-General, William Ponty, asked *commandants* of auriferous circles to scrutinize African mining “customs”

⁴⁴ Archives de la Direction des Mines et de la Géologie du Sénégal, Dakar (ADMGS), Orpaillage en Guinée (OG), Letter from Bidiane, Commandant de Cercle (CdC) Siguiiri, to the GGF, Siguiiri, 6 Sep. 1913 ; ADMGS OG, ‘Procès-verbal d’une palabre tenue a Fatoya,’ 27 jan. 1914.

⁴⁵ ADMGS OG, ‘Procès-verbal d’une palabre tenue a Fatoya,’ 27 jan. 1914

⁴⁶ Ibid.

⁴⁷ ANG 3 Q 10, ‘Rapport du contrôleur des mines to GGF’, 25 Apr. 1909.

⁴⁸ ANG 3 Q 10, Letter from David, ingénieur des mines, to the GGF, Conakry, 25 Oct. 1913.

⁴⁹ See correspondence cited in ANS P 499, Transmission from L’Inspecteur General Reinhardt to the GGF the report of L’Inspecteur Monguillot, 6 Feb. 1914.

with the goal of reducing direct competition with European miners.⁵⁰

By dipping into the circle archives and interviewing elders, Bidiane, the *commandant* of Siguri, proposed a creative solution to Euro-African conflicts on the federation's goldfields. Bidiane argued that when Barrat first codified the *droit coutumier* of African miners in 1895, Siguri was emerging from the "foreign rule" of Samori Touré. Touré had recruited people from far-flung territories to mine in Bouré, but prior to his rule, "strangers" were prohibited from Bouré. African mining "custom," Bidiane concluded, was not tied to a specific set of techniques or tools, but to "traditional" mining territories.⁵¹ Ponty embraced this new thesis, and proposed to modify the federal mineral code to regulate African mining through a system of "indigenous reserves" (*réserves indigènes*) from which Europeans and "stranger" African migrants would be excluded. This new definition of "customary rights" was based on a geographic, rather than a vertical, demarcation of subsoil rights: African miners would now be confined to reserves.

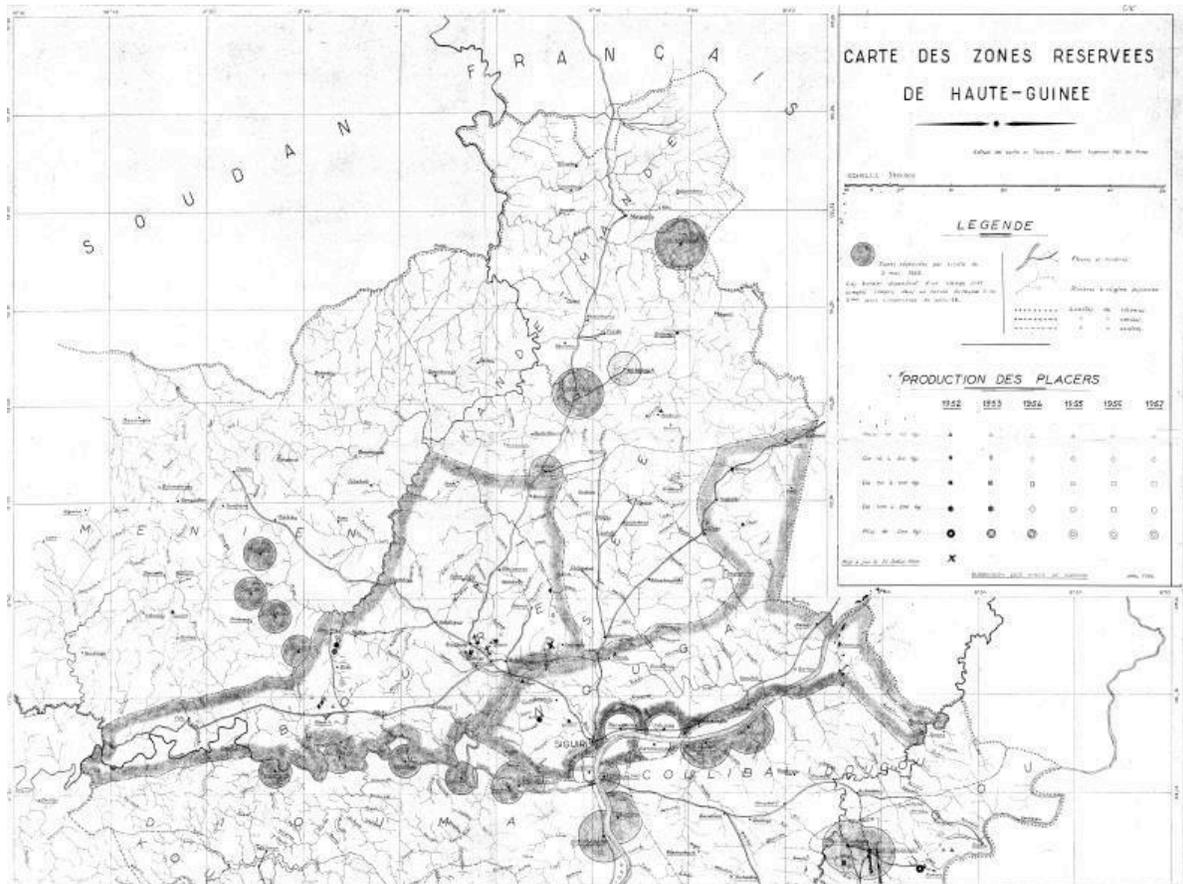
While World War I placed legislative reforms on hold, the system of *réserves indigènes* was codified in the new federal mineral code of 1924.⁵² This version of *droit coutumier* was a political compromise among divergent imperial interests. While engineers in Dakar and Paris lobbied to abolish "customary rights" altogether, territorial political authorities worried that this would spark political revolt in the countryside. The French merchant lobby also sided with the administration. One view was shared across the political spectrum: *droit coutumier* was a temporary stepping-stone in the legal and technological "evolution" of African subjects. AOF's prewar mining engineers hoped that "customary rights" would be progressively "erased to the

⁵⁰ ANG 3 Q 10, Letter from the GGAOF to the GGF, Conakry, 2 Dec. 1913.

⁵¹ ADMGS OG, Letter from Bidiane to the GGF, 6 Sep. 1913.

⁵² ANG 3 Q 10, Letter from the GGAOF to the Inspecteur General des Mines', Dakar, 16 May 1914; Decree of 22 Oct. 1924, printed in Journal Officiel de l'Afrique Occidentale Française, 16 Jan. 1925.

point that the natives could integrate into common law.”⁵³ But neither engineers nor administrators had a clear vision of how this evolution might unfold. Would Africans continue to mine in family labor groups or become wage laborers on European managed mines?



(Figure 11: Map of reserve zones in Haute-Guinee, Guinea, circa 1936
Photo Courtesy of the Archives de la Direction des Mines et de la Géologie, Senegal)

This ambiguity pointed to a larger tension in the Third Republic’s “civilizing mission,” which recognized the ability and desirability for Africans to evolve toward French ideals and technological expertise, while emphasizing the need to preserve African so-called “customs.”⁵⁴ These conflicting ideals were inscribed in the very system of *réserves indigènes*. While inside

⁵³ ADMGS OG, Eduard Julian, ‘Rapport sur l’exercice du droit coutumier et l’amélioration des exploitations aurifères indigènes’, 21 Aug. 1929.

⁵⁴ Wilder, *The French Imperial Nation-State*; Conklin, *A Mission to Civilize*.

the *réserves*, Africans could “evolve” their mining techniques. Africans could still search for gold outside of the “reserves,” but only if the area was not under concessionary permit, and only with the use of their “ancient methods” or “customary techniques.”⁵⁵ There were several administrative advantages to such a system. For one, it allowed AOF’s nascent geological service, which was grossly underfunded compared to its British neighbors, to track African gold prospectors in order to create a baseline map of the federation’s prospective gold deposits (see Chapter 3). However, by legally restricting Africans to the use of “ancient methods” outside of the reserves, the state also limited the extent to which Africans could exploit freshly discovered gold deposits. This left legal space for European-managed mines to request concessionary permits for gold deposits discovered by African miners. And in time, the Service of Mines and Geology hoped, “rational” European operations would supplant African “artisanal” production.⁵⁶

This spatial demarcation of technological evolution—traditional tools outside of reserves, modern ones within them—reveals, once again, that *droit coutumier* did not align with the “natural” limits of African mining techniques or territories. Rather, it was a technopolitical compromise that allowed geologists to appropriate African gold discoveries, administrators to better regulate African miners, and merchants to earn profits from the purchase of gold mined by Africans. Moreover, the new mineral code exposed the fact that the very definition of *droit coutumier* was a result of legal and material competition with European miners.

⁵⁵ ADMGS OG, Bardin, ‘Etude sur la viabilité des exploitations modelés’, 14 Nov. 1931.

⁵⁶ Ibid.

Primitives, Experts, and the ‘Native’ Interwar Gold Boom

After the prewar failures of European mining operations, metropolitan mining firms largely lost interest in the goldfields of AOF. However, gold mining by African subjects only intensified. In the late 1920s, the onset of the global financial crisis and falling prices for tropical plant products encouraged hundreds of African households to migrate to the placers.⁵⁷ By 1928, some of the larger African mines in Siguiri boasted between 5,000 to 15,000 migrant miners. By the mid-1930s, it was estimated that 150,000 Africans mined in Siguiri alone.⁵⁸ The colonial state embraced the “native” mining boom as a practical policy. Gold was one of the few commodities garnering stable market prices. France was in need of gold as stocks were depleted by World War I and, in 1928, the franc was once again tied to the gold standard.

Siguiri rapidly emerged as the cosmopolitan and multi-ethnic center of the interwar gold boom. New migrants arrived daily, constructing makeshift huts and cutting fresh bush paths between villages and placer mines. The administration abandoned the idea of taxing gold extraction directly. Miners were mobile and often worked in several placer sites within a single dry season. Instead, the state taxed gold exports and authorized a small number of Bordelaise and *Syrien* merchants to purchase gold, which was then resold to the metropole. The state also left local authorities to organize extraction. *Damantigi* (the Malinké term for “chief of the mines”) determined where each mining team could dig and directed a village-level security force.

With African mining the only “viable ministry industry at present in Guinea,” AOF’s Service of Mines and Geology shifted their mission from encouraging “industrial” mineral development to “improving” the “irrational work methods of natives” within reserves.⁵⁹ A young

⁵⁷ ADMGS OG, Goloubinow, ‘Prospection aurifère en Guinée’, 9 Aug. 1935.

⁵⁸ Charles Robequain, ‘Problèmes de l’économie rurale en A.O.F.’, *Annales de Géographie* 46 (1937), 137-63, 143.

⁵⁹ ADMGS OG, Letter from the Minister of Colonies, Travaux Publiques, to the GGAOF, 7 Aug. 1932.

geologist by the name of Eduard Julian led these efforts. As Guinea's sole mining engineer, Julian had spent several years mapping the colony's bauxite, iron and gold reserves. In 1931 he proposed establishing a "model mine" (*exploitation modèle*) in Siguiiri, with the goal of "modernizing" African mining practices through "technically improved procedures."⁶⁰ The governor-general quickly approved funding for the project on the grounds that as long as "*orpaillage* substitutes for modern industry, we are morally obligated to improve the process of exploitation."⁶¹ Guinea's *exploitation modèle* was unique in interwar colonial Africa, where rural development schemes focused almost exclusively on agriculture.⁶² But Julian shared a conservative vision of development common among agronomists in interwar AOF. His goal was to "modernize" African mining techniques without creating an "industrial proletariat"—to substitute "their [Africans'] methods with simple tools, inexpensive, all while respecting their ancestral customs' and not disturbing "traditional social structures."⁶³

Julian located the model mine in the village of Kentinian, situated in the heart of Siguiiri's *réserves indigènes*. In 1933, Julian employed workers to dig a subterranean mine supported by wood beams and a streamside alluvial operation that featured wooden sluices. According to Julian's calculations, Africans extracted half the quantity of gold possible with European techniques.⁶⁴ Julian elaborated two methods for reducing this "waste of natural wealth." The first was to instruct Africans to reinforce mining shafts with wooden pillars, reducing the "golden waste" produced by the local practice of using portions of auriferous rock to build support pillars for subterranean mining caverns. Secondly, Julian proposed replacing the laborious method of

⁶⁰ ADMGS OG, Julian, 'Rapport sur l'exercice', 21 Aug. 1929.

⁶¹ ADMGS OG, J. Malavoy, 'Note sur l'amélioration de l'orpaillage indigène', 24 Mar. 1931

⁶² C. Bonneuil and M. Kleiche, *Du jardin d'essais colonial à la station expérimentale, 1880-1930* (Paris, 1993).

⁶³ ADMGS OG, J. Malavoy, 'Note sur l'amélioration de l'orpaillage indigène', 24 Mar. 1931

⁶⁴ *Ibid.*

washing gold in calabashes with wooden sluices. Sluices, Julian estimated, would double gold recuperation by allowing heavy metals to accumulate against gentle barriers to water flow.⁶⁵



(Figure 12: Miners returning from the *dioura*, Sigui, Guinee, Labitte, 1943
Photo courtesy of *Institut Fondamental d'Afrique Noir*)

A string of high-ranking officials and technicians visited the *exploitation modèle*, but early optimism quickly waned. A flood rotted the subterranean wood supports, and returns were low compared to investments of capital and labor. “Julian is very attached to his work,” wrote the inspector of Administrative Affairs, but “his various failures have not given confidence to *orpailleurs* who, during this time [...] extract gold in abundance.”⁶⁶ By 1936, the Service of

⁶⁵ ADMGS OG, Julian ‘Rapport sur l’exercice’, 21 Aug. 1929.

⁶⁶ ADMGS OG, Aubert, Inspecteur des Affaires Administratives, ‘Rapport sur la situation du commerce de l’or et sur l’exploitation des mines d’or de Sigui par les indigènes’, 29 May 1934.

Mines declared the model mine a failure, and Julian returned to France in the midst of a forced labor scandal. The administration re-centered efforts on supporting the activities of African miners: transporting rice and building roads to the most popular mines.⁶⁷ In the meantime, African miners innovated extractive techniques on their own terms. For example, a new category of young male miners, called the *soughoumbali*, developed a method of capturing the profits “wasted” in auriferous pillars. Traveling by bicycle, they descended into recently abandoned tunnels and dismantled these pillars with elongated picks. While risking suffocation under a collapsed mining shaft, their extraordinary returns earned *soughoumbali* fame and wealth. Officials came to recognize these young men by their richly embroidered clothes, new bicycles, and gramophones.⁶⁸ Further, migrants from Sierra Leone, who formerly worked with British diamond prospectors, introduced Sigüiri’s miners to a European method of damming waterways to expose previously inundated auriferous plains.⁶⁹ These new techniques intensified extraction and profits on the goldfields of interwar Guinea, and neighboring Soudan and Senegal.

In the face of the rapid technological innovations and dynamic commerce generated by the trans-national mixture of migrant miners on Sigüiri’s goldfields, colonial authorities began to reassess received wisdom about “native” mining. Geologists who previously described women gold washers as “wasteful” and “primitive” began to laud their techniques as “expert” and “efficient.”⁷⁰ By the mid-1930s, the Governor of Guinea applauded the “ingenuity” of native miners and the “incontestable rapidity and productivity” of their tools.⁷¹ The assistant director of the Service of Mines was even “brought to conclude” that “the natives, drawing on an ancient

⁶⁷ ADMGS OG, ‘Mesures prises au cours de l’année 1934 relatives à l’orpaillage indigène dans le cercle de Sigüiri’, 1934, n.d.

⁶⁸ J. Siossat, ‘Les coutumes des orpailleurs indigènes du Maramandougou’, *Bulletin du Comité d’Etudes Historiques et Scientifiques de l’Afrique Occidentale Française* (1938), 336-49, 346.

⁶⁹ ADMGS OG, Nickles, ‘Observation sur l’or dans le Houre-Kaba et le Fitaba’, Labé, 2 Jun. 1939.

⁷⁰ ADMGS OG, Goloubinow, ‘Prospection aurifère en Guinée’, 9 Aug. 1935.

⁷¹ ADMGS OG, Letter from GGF to the General Inspection of Public Works, 4 Jul. 1934.

experience, practice an excellent method adapted to the conditions of the gold deposits, to their conditions of life, and to their customs.”⁷² At the height of the boom, these “expert” African miners extracted several tons of gold from Siguiri alone, and an additional ton from the goldfields of Senegal and Mali. Collectively, “native” gold production constituted over 95% of the federation’s mineral exports between the wars.⁷³ In the late 1930s, with the recovery of prices for plant products, the gold boom began to wane as many Africans chose to focus on agriculture and pursue dry season activities closer to home. The success of “native” mining, contrasted with the searing failure of the model mine, troubled the notion that native techniques were primitive—a discourse long used to justify restrictions placed on the mining rights of West African subjects. But the administrative celebration of “native” mining as AOF’s primary “mineral industry” was short-lived. World War II renewed “industrial” interest in AOF’s subsoil, and inspired far more restrictive policies toward the rights of Africans to excavate the earth for individual profit.

Debating Natural Patrimony In Postwar French West Africa

World War II revealed the fragility of French power and sharpened African demands for equal rights with those of metropolitan citizens. In October 1945, building upon a process of reform that began in Brazzaville in 1944, the French Union of the Fourth Republic was formed. Colonial subjects became citizens and elected local representatives to new territorial assemblies. African representatives now deliberated directly with colonial governors and the governor-general over a range of matters, including the granting of mineral concessions. The Colonial Ministry also shifted away from an old model of colonial self-sufficiency, and metropolitan France began to systematically invest in the “development” of its overseas territories. New funds

⁷² ANG 3 Q 10, Letter from Pierre Legoux to Fernand Blondel, Ingenieur en Chef des Mines, 29 Feb. 1934.

⁷³ Robequain, ‘Problèmes de l’économie rurale en A.O.F.’, 146.

for overseas mineral research and development were also justified by expanding postwar demands for minerals: for industrial manufacture (bauxite, iron), but also national security (uranium). France looked to its African colonies in particular to meet these new mineral needs.

Gilbert Arnaud, the first postwar Director of AOF's Service of Mines, hoped that fresh funds for mineral reconnaissance would attract "serious" mineral investment to West Africa. Arnaud hoped to finally replace African "artisanal" production with "industrial" extraction, but he also envisioned a prominent role for African miners in the transition from peasant production to modern industry.⁷⁴ African *orpailleurs*, Arnaud argued, were a "mass of specialists" who "conduct a true mineral reconnaissance by pit."⁷⁵ Like his interwar predecessors, Arnaud instructed staff geologists to study "native" gold mining techniques and to map the movements of African miners as they prospected for gold across the federation.⁷⁶ By tracking African miners, Arnaud argued, geologists could locate and target specific gold deposits for more detailed reconnaissance and future exploitation by European "industry." According to Arnaud, combining European mapping expertise with the mass prospecting activities of Africans would also benefit African miners. If geologists determined that a deposit was unsuitable for industrial exploitation, they could direct *damantigi* to exploit the site with *orpailleur* techniques.⁷⁷

But collaboration raised thorny questions about mineral rights. If African miners and French geologists collaborated to discover new gold deposits, who could rightfully exploit these findings? Arnaud proposed a simple "technical formula" to solve this problem that echoed the logic of the 1899 mineral code drafted by Maurice Barrat. Africans, Arnaud proposed, would

⁷⁴ ANG, 3 Q 10 Arnaud, Directeur des Mines de l'AOF, 'Rapport sur l'organisation administrative, technique, et coopérative d'orpaillage', Dakar, 11 Sep. 1944.

⁷⁵ Ibid.

⁷⁶ Ibid.

⁷⁷ Arnaud's policy formalized the long-standing practice of French geologists to map native miners. See ADMGS OG, Goloubinow, 'Prospection aurifère en Guinée', 9 Aug. 1935.

continue to mine “superficial deposits” while Europeans mined deep lode ore. Arnaud once again relied on the language of naturalism to justify this demarcation of subsoil rights, arguing that it mapped directly onto the divergent “technical capacities” of African and European miners.

Drawing on this logic, Arnaud lobbied the administration to substitute the “current geographic definition of *droit coutumier*” (based on the system of *réserves indigènes*) for a “technical definition” that limited African mining rights to the extraction of surface deposits.⁷⁸ Abolishing the *réserves indigènes* was instrumental for Arnaud’s plans for federal mineral research. If African miners were “free” to prospect for gold anywhere they pleased, they were more likely to discover productive gold deposits. But, as Arnaud suggested, the administration would reserve the right to evict African miners “to the profit of an industrial enterprise” if the “rational exploitation of these deposits exceeds their [Africans] technical capacities.”⁷⁹ Stated otherwise, while African miners could expand their activities geographically, their rights to the sub-surface would become increasingly vulnerable to encroaching European interests.

The Grand Council of the AOF debated Arnaud’s suggested modifications to the federal mineral code, but legal reforms proved difficult. The creation in 1948 of a new Bureau of Overseas Mining slowed the adoption of any major legal reforms. Guinean politicians—serving in the French Parliament and in the territorial assemblies of West Africa—fundamentally changed the terms of debate about African rights to gold. The Union du Mandé organized early protests against the administration’s “customary rights” policies. The Union was a Mande ethnic and regionalist party from Upper Guinea, home of the Siguiri goldfields. In 1948, Framoi Béréte, a founding member of the Union and the first African elected representative of Siguiri, partnered with Sekou Touré, the future trade union leader and president of independent Guinea, to

⁷⁸ Ibid. ‘Secondary’ refers to deposits derived from the weathering of ‘primary’ deposits.

⁷⁹ Ibid.

campaign for the “liberalization” of gold trade in the AOF. At the time, the administration controlled the price of gold, a policy holdover from wartime commercial regulations.⁸⁰ Béréte and Touré drafted letters to Guinea’s territorial assembly and the Grand Council in Dakar, complaining that the “official” price of gold in AOF was roughly half the price on offer in British colonies, where the state did not suppress gold prices. The Union du Mandé also decried administrative plans to establish “native” gold mining cooperatives, which they characterized as a bald attempt to control the market in gold while keeping prices low and pushing *dioula* traders out of the formal sector.⁸¹ In an effort to abet these problems, the state extended cloth, sugar, and rice to *dioula* to subsidize the “official” gold price. But *dioulas*, who were becoming a powerful and moneyed political constituency in postwar Guinea, complained of the poor quality of cloth and inconsistent shipments. From Paris, Mamba Sano garnered a coalition to “free” gold commerce in AOF, framing it as a concern of “our national budget.”⁸²

Under these pressures, in 1950 the administration finally “liberated” gold commerce in AOF. But the timing of this concession coincided poorly with the launching of a new scheme to improve “native” mining techniques in Siguiré. In the spring of 1950, the Mining Bureau of Overseas France sent an engineer by the name of Blouin to Kentinian, the site of Eduard Julian’s former *exploitation modèle*. Blouin’s mission was to demonstrate techniques for evacuating water from “native” mining pits. But within a few weeks, prominent *damantigi* from across

⁸⁰ Béréte began his political career on Guinea’s Chamber of Commerce, and served as the President of the Territorial Assembly of Guinea from 1954-6.

⁸¹ Union du Mandé, ‘A Propos de la Cooperative de l’Orpaillage’, *La Phare de Guinée*, 7 Feb. 1948, cited in G. Mann, *From Empires to NGOs in the West African Sahel: The Road to Nongovernmentality* (Cambridge, 2015), Kindle location 683n58.

⁸² See references in ANG 3Q 23, Letter from Union du Mandé to the GGF, Conakry, 18 Mar. 1947. Mamba Sano served in the French National Assembly from 1946-58. See Mann, *From Empires to NGOs*, Kindle location 685-6.

Siguiri had signed petitions to expel Blouin from the circle.⁸³ As Blouin soon learned, his arrival in Upper Guinea coincided with a request brought to Guinea's General Council in Conakry by a French financier. The financier sought a gold research permit that would extend across Guinea's *réserves indigènes*, from which European prospectors had been excluded to-date.

Fresh off the gold commerce campaign, Framoi Béréte wrote a searing editorial in a popular bi-weekly, *Voix de la Guinée*. "For several months, the engineer is sent to study, interview, and observe in the circle. "Is it really to improve our methods of exploiting gold?" the natives ask with suspicion. "Or is it to delineate new gold mining areas for capitalists?"⁸⁴ Béréte was particularly troubled by the discovery that the technical advisor behind the permit request was none other than Eduard Julian, also employed between the wars by the Service of Geology to "improve" African mining techniques. Julian was now involved in a permit request that, if granted, would effectively dispossess Africans of their right to mine gold by converting vast *réserves indigènes* into the gold research permit of a single French mining enterprise. As Béréte decried, Julian would "put to the service of private parties and his own pocketbook, "knowledge that he acquired under your [the colonial state's] care."⁸⁵ Considering this, why should the population of Siguiri trust Blouin, another engineer on a mission to 'help' local miners? As the political environment in Upper Guinea deteriorated, the *commandant* of Siguiri assured prominent *damantigi* in the circle that Blouin aimed to "help the natives" and "not to dispossess them of their rights."⁸⁶ But Siguiri's miners were well aware that state agents had long coupled

⁸³ ANG 3 Q 23, Blouin, ingénieur au Bureau Minier de la France d'Outre mer (BMFOM), 'Mission orpaillage de Siguiri' to Massoulard, CdC, Siguiri, 22 Jun. 1950.

⁸⁴ Framoi Béréte, 'L'Octroi à des sociétés privées des permis de recherches et d'exploitation d'or dans le cercle de Siguiri signifie la suppression pure et simple de l'orpaillage des autochtones,' *Voix de la Guinée*, 20, Jun. 1950, 3.

⁸⁵ Béréte, 'L'Octroi à des sociétés privées'.

⁸⁶ ANG 3 Q 23, Letter from Massoulard to the GGF, Oct. 24 1950.

attempts to improve African extractive techniques with the appropriation of African gold discoveries to the benefit of European mining interests.

In 1950, two visions of the future of Siguiiri's gold competed for sanction by the colonial state. For the Service of Mines and Geology, Siguiiri's industrialization—which would turn Africans into modern laborers—seemed finally within view. Engineers and geologists wanted to encourage private investments and mineral research in Siguiiri's subsoil. But for Béréte and other Guinean politicians, Siguiiri's gold deposits constituted a “natural patrimony” that the Bureau of Mines was obligated to protect for the future benefit of “thousands of Africans coming from Senegal, Guinea, Soudan, and Cote d'Ivoire.”⁸⁷ Engineers argued that industrial extraction would not dispossess Africans of their “customary” right to mine alluvial or surface deposits, but Béréte questioned the viability of this promise. “Have you ever seen a happy home between the powerful and the weak, the experienced and the debutant, the fox and the crow, where one doesn't live at the expense of the other?”⁸⁸ By framing European miners as foxes, and African miners as crows, Béréte insisted that these miners existed within a single extractive system. But the colonial mineral code ensured that Europeans benefited “at the expense” of African miners.

Béréte went on to critique the proposition to divide African and European mining rights on the basis of supposed divergences in the technical capacities of each group. According to Béréte, this ran counter to the core principles of French republicanism. “If we are really French,” he wrote, “we have the right to believe that our sons and grandsons could become engineers, trained at the Polytechnique, and capable of unearthing gold wherever it is found.”⁸⁹ African mining supported the livelihoods of thousands, while a company would “simply put this gold in

⁸⁷ ANG 3 Q 23, Letter from Framoi Béréte, President de la Commission Permanente, to the GGAOF and the President of BMFOM, 23 May 1950.

⁸⁸ Béréte, ‘L'Octroi à des sociétés privées.’

⁸⁹ Ibid.

hermetic boxes addressed to the metropole, if not to Canada or America.”⁹⁰ For Bérété, granting Africans unstable “customary rights” was no longer defensible on the grounds of the technical inferiority of African miners. In theory, Africans, now citizens of the French Union, could aspire to acquire the same technological expertise as their metropolitan counterparts. The promise of political membership in the French Union was to obliterate technical and political inequality.

Ultimately, Guinea’s Governor and General Council rejected the permit request of the French financier. Once again, the administration appeared to side with African miners against the interests of European “industrialists.” Only this time, elected African representatives took part in the deliberation. Administrators did not share Bérété’s vision of the radical technological future of African mining and the self-made industrial potential of African miners. Rather, more immediate “political concerns” motivated their decisions. Roland Pre, then Governor of Guinea, wrote to the governor-general in Dakar that there “were more than 100,000 *orpailleur* in Siguiri” and we “do not want recriminations from political parties there.”⁹¹

Several months later, Paul Jochyms, Arnaud’s replacement as AOF’s principal engineer, once again attempted to re-convert this contentious political debate over subsoil rights into a “technical” problem. He submitted a legal proposition to Guinea’s territorial assembly that claimed to specify “with technical precision the rights of *orpailleurs*.” Echoing arguments promulgated by his predecessor, Jochyms proposed modifying the mineral code to constrain “the notion of the indigenous reserve only to deposits that can be exploited by traditional procedures.”⁹² In his words, Jochym proposed a “return to the dispositions of the 1899 decree” that restricted African mining rights based on the supposed material limits of “customary

⁹⁰ Ibid.

⁹¹ ANG 3 Q 23, Letter from Roland Pre, GGF, to the GGAOF, Conakry, 25 Apr. 1950.

⁹² ANG 3 Q 23, Letter from P. Jochyms to the GGF, Conakry, 28 Oct. 1950.

techniques.”⁹³ This was despite the fact that African miners had, since the 1890s, proven their techniques were as adept, or more efficient, than those of European geologists and miners. As this reveals, the legal and discursive bifurcation of “artisanal” and “industrial” mining was based on a racial assertion that certain administrators paraded as a technical description of “reality.”

The Governor-General and the Colonial Ministry in Paris embraced Jochym’s proposal, but it was never codified into law. In 1954, the Mining Bureau drafted a single “modern” mineral code for all of overseas France. Most territories ratified this decree. For reasons that remain unclear, it was never promulgated in West Africa. Rather, the independent states to emerge from AOF would draft the next generation of policies governing access to the subsoil. As documented in later chapters, post-colonial codifications of “artisanal” mining rights—where it was not outlawed altogether—gave rural Africans the right to mine with “customary” tools: hand picks and the calabash. These codes bear striking resemblance to colonial *droit coutumier*.

Conclusion

In French West Africa, this chapter argues, the regulatory category of the “artisanal” miner—*orpailleur* in French—was born in the “customary rights” clauses of mineral codes. Colonial agents argued that the codification of African mining custom mapped onto the actual empirical practices of African miners, but in fact, it was neither straightforwardly “technical” nor empirical. Rather, in order to meet shifting political goals, the state variously encouraged, limited, or criminalized *orpaillage*. There was not one kind of mining custom in colonial AOF, there were many. African miners innovated techniques and discovered new deposits. Moreover, African and European miners exchanged techniques and pirated each other’s gold deposits.

⁹³ Ibid.

Colonial mining codes were a technopolitical classification. They attempted to shape the material world and political possibilities by claiming that European and African mining techniques and capacities were inherently distinct. Geoffrey Bowker and Susan Leigh Star argue that attention to the political and material contestations of categories “reveals the underlying architecture of the classification system.”⁹⁴ Mineral codes were based on a racial classification. They did not codify a “natural” technical division, as claimed by the colonial state. By extracting lode ore and appropriating European methods, African miners challenged the state’s claim that the unequal subsoil rights of subjects and citizens mapped onto actual distinctions in technological capacity or practice. After World War II, African politicians, such as Framoi Béréte, revealed contradictions in the very structure of a “customary” rights framework in a polity that claimed to no longer legally recognize differences between Africans and Europeans. In the face of such persistent critique, the colonial state invested considerable work in making African mining “custom” appear stable and discrete from that of “modern” European extraction.

Colonial policies toward African miners in French West Africa were fluid compared to those of neighboring states, where customary mining was often banned outright. But there was violence in this flexibility. The usufruct mineral rights of African miners were highly unstable and could be rescinded—just as they could be protected—at any moment. Over the span of colonial rule, the state variously experimented with restricting African mining to “traditional” mining areas or by the use of “customary techniques.” By restricting where, when, and how Africans could mine or innovate extractive techniques, these policies rendered African mining “artisanal” compared to their European counterparts. As detailed in later chapters, the priority placed on developing “national” industries in the early decades of independence further marginalized African mining to the shadows of rural custom and criminality. Multi-generational

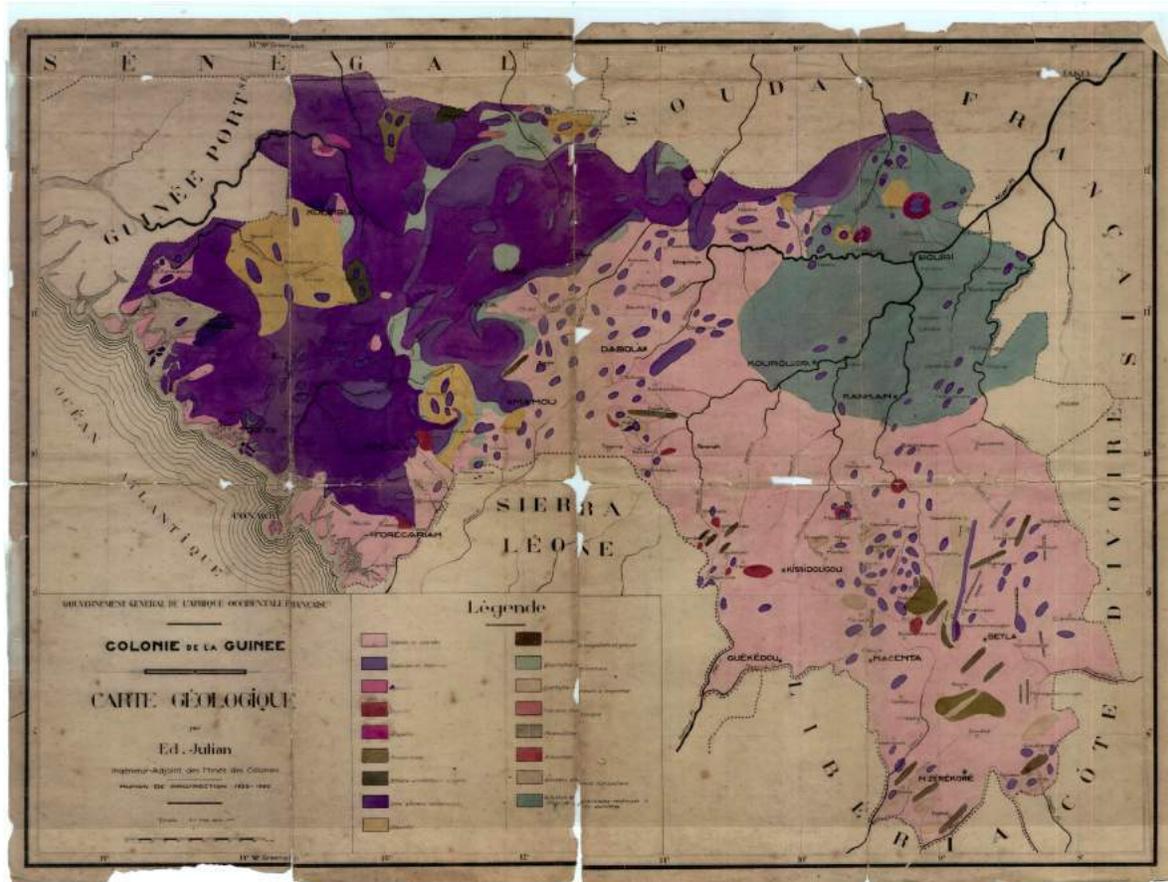
⁹⁴ Geoffrey Bowker and Susan Leigh Star, *Sorting Things Out*, 120.

gold miners were faced with a stark choice: to become wage laborers on state-owned enterprises or to only dig for gold using customary techniques—in short, the tools used by their ancestors at colonial conquest in the 1890s when Maurice Barrat drafted AOF’s first mineral code.

Framoi Bérété was right to suspect that “technical assistance” offered by French geologists and prospectors signaled the future restriction of African mining rights. Chapters 3 and 4 further detail how private prospectors and geologists working for the colonial and post-colonial state appropriated the gold discoveries of African miners, only to lobby for the restriction of African mining rights in favor of European “industrial” expansion. It was during the colonial period that the objectification of African miners as “customary” and “artisanal” producers first took shape. Colonial policies influenced the mineral codes of independent states, while also setting the legal and political frameworks for how rural communities, the state, and expatriate capital would struggle to sanction their legal right to the sub-surface.

CHAPTER 3

Ancient Indexes: Colonial Geology and African Mineral Knowledge



(Figure 13: Mineral Map of French Guinea by Eduard Julian, 1935
Photo courtesy of the *Direction des Mines et de la Géologie*, Senegal)

Introduction: Appropriating African Mineral Discoveries

In Chapter 2, I established that the very category of the “customary” or “artisanal” gold miner emerged as a result of competition between African and European miners in colonial French West Africa (AOF). This competition emerged shortly after conquest as French mining

outfits installed directly on gold deposits already exploited by African miners. Prior to World War I, neither private investors nor the geologists of the colonial state conducted much geological research or mineral exploration in AOF. Rather, European prospectors, most of who were French, used African gold workings as “indexes” for locating gold deposits within a federation over eight times the size of metropolitan France at 4,800,000 kilometers.¹ With new development funds in the 1920s and 1930s, AOF’s Service of Geology and Mines—hereafter, the Service of Geology—launched more systematic studies of the federation’s geological anomalies and minerals. Even then, the Service continued to rely heavily on the knowledge produced by thousands of African prospectors: men and women who scoured the savannah landscape for indications of underlying gold deposits. French geologists tracked the movements of African miners, interviewed African prospectors and blacksmiths, and sampled the soil concentrations of indigenous mining pits. Through these exchanges with African experts, the Service of Geology generated key insights into the region’s geology and drafted the federation’s first mineral maps (including the watercolor map pictured above of French Guinea). Geologists also studied the political institutions and “rituals” of African miners, which inspired a series of projects aimed at improving the extractive techniques of African miners in French West Africa.

Anthropologist Marilyn Strathern has argued that property regimes codify and bind the exchange of knowledge. Scientific inventions and discoveries are made possible by a “field of knowledge”—that is, a host of collaborators and lab and field assistants. But patents or intellectual property claims truncate these connections, dividing those who will benefit from a drug patent, for example, and those who will not.² Similarly, through the legal mechanism of the federal mineral code, the colonial state determined who could benefit from mineral discoveries,

¹ This excludes Togo, which was under a shared mandate with England.

² See Marilyn Strathern, “Cutting the Network,” *The Journal of the Royal Anthropological Institute*, 2:3 (Sep., 1996), 517- 535, 524.

regardless of who contributed to making these discoveries in the first place. This chapter documents the “field of knowledge,” in which both Africans and Europeans participated, that generated knowledge about the location and potential value of gold resources in colonial AOF.

This chapter reinserts struggles over expertise into the historiography of mining capitalism in sub-Saharan Africa and elsewhere in the formerly colonized world. To date, the ethnographic and historical literature on mining has focused almost exclusively on the exploitation of land and labor, the making of working class cultures, and the expansion of capitalist modes of production into non-capitalist forms of production and exchange.³ Remarkably few studies examine controversies over benefits and rights tied to mineral discovery—issues that characterize the protracted “phase” of mineral exploration.

By comparison, there is a rich literature on plant (or bio) prospecting in colonial Latin America and Africa, and in the Atlantic world.⁴ Scholarship on colonial-era mining in Africa mentions that European mines often began as “take overs” of indigenous extractive enterprises.⁵ However, we know little about how Africans responded to these seizures. Despite the lack of

³ See Dissertation Introduction.

⁴ Important contributions to this expanding literature include: Cori Hayden, *When Nature Goes Public: The Making and Unmaking of Bioprospecting in Mexico* (Princeton, 2003); Linda Schiebinger, *Plants and Empire: Colonial Bioprospecting in the Atlantic World* (New York, 2004); Abena Dove Osseo-Arare, *Bitter Roots: The Search for Healing Plants in Africa* (Chicago, 2014).

⁵ The historiography of mining in South and Southeastern Africa includes fleeting accounts of European “take overs” of African gold, copper, and tin mines. According to Bill Freund, the British tin industry in early twentieth century Nigeria “began as an incorporation, a take-over [of African mines], not as a discovery.” Until 1918, the British relied on Africans to “prospect and wash tin ore as they did on the old days.” Bill Freund, *Capital and Labour in the Nigerian Tin Mines* (Harlow, 1981), 47. Charles Van Onselen writes that the “mining of the ancients was both skilled and extensive. [...] So competent were these early miners at detecting gold-bearing reef that virtually no large-scale prospecting was necessary during the first twenty years of capital-intensive mining in Rhodesia: white ‘prospectors’ seeking mineral deposits were simply guided to ancient workings by local Africans.” Charles Van Onselen, *Chibaro: African mine labour in Southern Rhodesia, 1900-1933* (London, 1976), 11. Finally, Ray Dummet documents that European miners in the Gold Coast followed Africans who exploited alluvial and reef-gold deposits. For two decades, a British “capitalist” and “indigenous” gold mining frontier expanded side-by-side, each group benefiting from the mineral discoveries of each other. Raymond E Dumett, *El Dorado in West Africa: The Gold-Mining Frontier, African Labor, and Colonial Capitalism on the Gold Coast, 1875-1900* (Athens, 1998).

scholarship on the topic, the practice of using indigenous miners to “pin-point” reserves is ubiquitous, both today and in the past. Since the late nineteenth century in sub-Saharan Africa, private prospectors and state geologists have mapped indigenous miners to generate baseline mineralization data. At mid-century, the United Nations encouraged newly independent states to rely on its citizens to discover fresh mineral deposits (Chapter 4). Even today, geologists continue to rely on “artisanal” mining indexes in the early phases of exploration (Chapter 5).

The appropriation of indigenous mineral expertise, I argue, was crucial to making “nature” valuable to the French empire and its post-colonial successor states in West Africa. This insight contributes to a vibrant literature emerging at the intersection of environmental history and African studies. This scholarship places Africa at the center of global technological production and argues that African experts and field assistants have made under-acknowledged contributions to scientific and technological advances typically credited to “the West.”⁶ An early generation of environmental historians of Africa documented how the colonial state erroneously degraded and marginalized African knowledge of agronomy, forestry, and animal husbandry.⁷

Helen Tilley, a historian of science in the British empire has challenged this thesis. Scientists, Tilley argues, often critiqued late nineteenth and early twentieth century assumptions that African farmers, miners, and foresters were wasteful and unproductive. Already by the

⁶ Recent examples focused on Africa include Abena Dove Osseo-Arare, *Bitter Roots*; and Helen Tilley, *Africa as a Living Laboratory: Empire, Development, and the Problem of Scientific Knowledge, 1870-1950* (Chicago, 2011). For an overview of research on the contributions of non-Western societies to what has become known as “Western” science and technology, see Kapil Raj, *Relocating Modern Science: Circulation and the Construction of Knowledge in South Asia and Europe, 1650-1900* (Palgrave, 2007). Other key contributions to this debate, include Gyan Prakash, *Another Reason: Science and the Imagination of Modern India* (Princeton, 1999); David Wade Chambers and Richard Gillespie, “Locality in the History of Science: Colonial Science, Technoscience, and Indigenous Knowledge,” *Osiris* (2000) 221–40; and Steven Shapin, “Placing the View from Nowhere: Historical and Sociological Problems in the Location of Science,” *Transactions of the Institute of British Geographers* 23, 1 (1998), 5–12.

⁷ See Michael Adas, *Machines as the Measure of Men: Science, Technology and Ideologies of Western Dominance* (Ithaca, 1989); Leach, Melissa, and James Fairhead, *Misreading the African Landscape: Society and Ecology in a Forest-Savannah Mosaic* (Cambridge, 1996); Maddox, G. I. Kimambo, and J. Giblin, eds., *Custodians of the Land: Ecology and Culture in the History of Tanzania* (Athens, 1996).

interwar period, European foresters, agronomists, and geographers studied and valued African agronomic and therapeutic practices.⁸ This was also the case in French West Africa. While this literature attends to inequality and power relations, its emphasis on the circulation and “co-production” of expertise in the hybrid “contact zones” of empires has clear limits in the realm of mineral exploration.⁹ In French West Africa, for example, both African and European mineral experts learned techniques, and discovered gold, through their mutual exchanges. However, racist colonial property regimes—which denied rural Africans access to private property or mineral concessions—ensured that the benefits of this colonial “open source” economy of subsoil knowledge accrued almost exclusively to Europeans in the long term.¹⁰ The terms “appropriation” and “dispossession” more accurately capture the long-term violence produced from exchanges between European geologists and African miners.

Moreover, the appropriation of African mineral discoveries was not a singular event, but a cumulative historical process. Karl Marx understood the “primitive accumulation” of nature and land by the landed elite and capital to be a singular and irreversible event that alienated peasants from their means of production—land and other natural resources—and made them reliant on wage labor. This created the mass army reserve of industrial labor.¹¹ By contrast, there was often a temporal delay between the “taking” of African mineral discovery and the accrual of benefit from this appropriation. Geological mapping and gold exploration is tedious and time-consuming labor. It can take decades of exploration before a known mineral “reserve” becomes an active mine. Few of the studies carried out by French geologists resulted in the opening of “industrial” mines during the colonial period. However, these studies did lead to the discovery of

⁸ Helen Tilley, *Africa as a Living Laboratory*, esp. chap. 3.

⁹ Kapil Raj, *Relocating Modern Science*.

¹⁰ On the “open source” economy of plant knowledge under colonialism, see Osseo-Arare, *Bitter Roots*.

¹¹ Robert C. Tucker, ed. “Capital, Volume One, Chapter XXVI. The Secret of Primitive Accumulation,” in *The Marx-Engels Reader*. 2nd Ed. (London 1978), 431-38.

gold, bauxite, iron and phosphate deposits opened by independent states and private industries at mid-century. Other studies became “shelf projects” that were opened to private bidders with the rise of hard metal prices in the late 1990s. In sum, the major accomplishment of colonial geologists was to locate mineral deposits for future exploitation. This research, in turn, relied heavily on gold discoveries by African miners.

In many cases, West African states have criminalized “artisanal” mining only with the opening of an “industrial” mine. The temporal delay between discovery and an exclusive property claim to the ore body obscures the vast “field of knowledge” that leads to the discovery of these minerals in the first place. For much of the twentieth century, the “taking” of African mineral discoveries did not create a sensational reaction at the time (although sometimes it did). But more often, rural Africans sought redress for these seizures much later, with the emergence of an “industrial” mining industry. This chapter, combined with Chapter 4, generates the necessary historical context to understand why multi-generational African gold miners today often demand recompense from the state and corporations not only for the loss of their access to mineral resources, but also for the “theft” of their—and their ancestors’—mineral discoveries.

The French colonial state used a very specific mechanism to accrue benefits from the appropriation of African gold discoveries. As documented above, the French generally encouraged *orpaillage*, profiting from taxing the sale of gold mined by African subjects. Key to this laissez-faire policy was the state’s reservation of a legal mechanism to restrict the rights of African subjects to mine gold in the event that a given deposit became favorable for extraction by Europeans. The logic is summed up in a 1936 memo from the Governor General to colony-level Governors. “It is my personal estimation,” he wrote, “that the greatest liberty of exploitation should be left to the natives of Afrique Occidentale,” except for the “rare case where

it compromises the future exploitation of a deposit [by a European industry].”¹² The state achieved this flexibility—to stop indigenous mining if it threatened a future European industry—through reforms to the federal mineral code and ad-hoc regulations at the colony level.

In this chapter, I return to many of the sources, places, and events covered in Chapter 2, but it shifts focus from legal and political struggles over the rights of *orpailleurs* to document how private prospectors and the colonial state appropriated the discoveries of African miners.

Colonial Geology in French West Africa



(Figure 14: Map maker at the Institut Fondamental d’Afrique Noire, Dakar, Senegal, 1947, Courtesy of the Institut Fondamental d’Afrique Noire)

By the late nineteenth century “scramble” for Africa, the development of the earth sciences in Europe was tightly bound to industrial developments and mining.¹³ Geological expertise was

¹² Archives Nationales de la Guinée (ANG), Quoted in letter sent by Launay, 19 August 1936.

¹³ By the late eighteenth century, as production and industrial demand for coal, pig iron, and copper ore increased exponentially in Great Britain and continental Europe, it became clear that an understanding of

crucial for assessing mineral endowments in newly conquered territories. In sub-Saharan Africa, the dream of turning easy profits from minerals was a central impetus for European states to expand their manipulation of markets to direct control over land. During these decades, European states were also conducting more systematic surveys of “national” mineral resources and starting to make comparative estimates of global mineral resources at international geological conferences.¹⁴ The professionalization of a range of sciences, including geology, corresponded to the expansion of global capitalism and imperial conquest—which produced a host of new studies of the earth, and its inhabitants, and encouraged an impetus toward the standardization and comparison of natural phenomenon and its conscription within imperial property regimes. Along with agriculture and forestry, states used geology to redefine nature as “natural resources” amenable to calculation, bookkeeping, planning, and speculation.¹⁵

As early as conquest—and far earlier in the case of gold—French administrators and technicians began documenting the resource endowments and economic potential of what became French West Africa (Chapter 1 and 2). While dreams of pulling easy riches from West Africa’s goldfields proved illusory, the flourishing of indigenous gold mining under French colonialism made gold the AOF’s primary mineral export until the mid-1950s. Until the postwar

the natural history of the earth was crucial for the mining industry. The growth in subterranean activities—quarrying for rocks and construction materials; the carving of tunnels for railways and the early subways—led to unexpected discoveries about the earth and its composition. mining was not the only stimulus for geological research during this time period—in many countries, geology was considered an important gentlemen science, far removed from the demands of industry and more tied to developing theories of the formation of the earth in different regions. Roy Porter, “The Industrial Revolution and the Rise of the Science of Geology,” in *Changing perspectives in the history of science: essays in honour of Joseph Needham*, edited by Mikula Teich, 320-43 (London, 1973), 322.

¹⁴ Comparing inventories of natural resources was a means of measuring state power and managing international relations. Colonial geological services played an important role in calculating the known “reserves” of the empire within forecasts of future world mineral consumption, and prices. Andrea Westerman, “Geology and World Politics: Mineral Resource Appraisals as Tools of Geopolitical Calculation, 1919-1939,” *Historical Social Research* 40 (2015) 2, 151-173.

¹⁵ David R. Oldroyd, *Thinking About the Earth: A History of Ideas in Geology* (Cambridge, 1996), 115. See also James Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven, 1998); Westerman, “Geology and World Politics.”

demand for so-called “industrial” minerals—phosphates, bauxite, uranium, iron, and petrol—the Service of Geology focused its mineral exploration efforts on gold and, to a lesser extent, diamonds. Colonial-era geologists tracked African miners, mapping their gold discoveries and continuing exploration of deposits propitious for future “industrial” extraction.

The strong reliance of the Service of Geology on indigenous knowledge and gold production was unique in the context of colonial Africa. As discussed in Chapter 2, most states outlawed mining and the possession of minerals by African subjects. Further, compared to their counterparts in British and Belgian colonies, AOF’s Service of Geology operated on a shoestring budget with minimal staff. AOF’s administration marginalized industrial development, particularly mining. The Colonial Ministry funneled far greater funds into agronomy and agricultural programs. By the onset of World War I, AOF had gained a comical reputation in international scientific and industrial circles as a federation that “had more mineral legislation than mines.”¹⁶ The mining engineer Fernand Blondel contested this view. After heading the geological service of Indochina from 1926 to 1929, Blondel traveled to mines and conferences in South Africa, Belgian Congo, the Gold Coast, and French West and Central Africa. Embarrassed by the paucity of mineral development in French Africa, upon his return to Paris Blondel challenged the Colonial Ministry to account for why “mineral riches appear, by virtue of an inexplicable phenomenon, to stop at the political frontiers of Black French Africa?”¹⁷

Blondel forged alliances with metropolitan-based smelting and mining industries and launched a vigorous lobby in favor of intensifying mineral exploration in the colonies. Blondel’s

¹⁶ Quoted in Stephanie Samson, “Fernand Blondel: Reforme administrative et reconnaissance géologique en Afrique subsaharienne française dans les années 1930.” In Garçon, Anne-Françoise and Bruno Belhoste, dir. *Les ingénieurs des Mines: cultures, pouvoirs, pratiques: Colloque des 7 et 8 octobre 2010*, 387-402. Paris: Institut de la gestion publique et du développement économique, 2012 (Accessed October 6, 2014), Available on <http://books.openedition.org/igpde/926>.

¹⁷ Fernand Blondel, “La richesse minière inconnue de la France d’outre-mer” conférence faite a la Société industrielle de l’Est le 22 janvier 1931, *Bulletin de la Société industrielle de l’Est*, Nancy 1931, 5-20.

vision articulated with a growing emphasis between the wars—in imperial France and elsewhere—on state planning and intervention in the economy, which included estimations of imperial and global reserves of strategic natural resources.¹⁸ AOF became a laboratory for Blondel’s attempt to systematize mineral exploration by promoting the unglamorous work of geological mapping as a necessary precondition for developing a future mineral industry.¹⁹

AOF’s Service of Geology was based in Dakar, the administrative center of the federation. Dakar was the “center of calculation” for a host of French colonial scientific enterprises, including ethnographic institutions, medicine and psychotherapy, botanical stations, topography, and geology.²⁰ Until the 1950s, the Service occupied a single floor in a downtown office building and housed a chemistry and gold smelting laboratory, map drafting room, and collections of soils, rocks and maps. At different moments, the Service was staffed with geologists, prospectors, and a few mining engineers, statisticians, and mineralogists. Most employees were contractual geologists from France who spent the long Sahelian dry season conducting field research across the federation and several months analyzing their samples back in Dakar. To generate baseline knowledge about the mineral endowments of AOF, the Service carried out two basic forms of research. Geological mapping focused on establishing the metamorphic and structural history of West Africa’s “basement rocks,” including the distribution of different rock and sediment types. Mineral prospecting was more specialized. It focused on assessing the presence of minerals on a more granular scale than baseline mapping. Colonial scientists colloquially referred to geology as “basic” science and prospecting as “applied” or

¹⁸ Catherine Coquery-Vidrovitch, “Vichy et ‘Industrialisation aux Colonies,’” *Revue d’histoire de la Deuxième Guerre mondiale*, 29, 114 (1979), 69-94.

¹⁹ Stéphanie Samson, “Fernand Blondel”; and Fernand Blondel, “Le problème minier aux colonies,” *Le Monde colonial illustre* (May 1930), 219-130.

²⁰ Tilley, *A Living Laboratory*. On the Dakar laboratories, see Georges Rocci, “L’oeuvre des géologues française en AOF,” *Travaux du Comité Français d’Histoire de la Géologie*, 3: XXVI, 2 (2012), 25-54.

“economic.” In practice, however, geological questions of “scientific” interest were rarely neatly cordoned from studies of “economic” interest, such as locating profitable minerals. In many times and places in colonial AOF, basic geological mapping and prospecting—particularly for gold, diamonds, and iron—were carried out by the same technicians on different missions.

Dakar was the stage for scientific exchange and conviviality during the rainy season while during the dry season geologists were “alone” in the colonies—that is, without other European counterparts. Geologists were, however, accompanied by thirty to sixty African porters. Together these men mapped vast territories by horseback, foot, and “hamac” (African porters carried geologists through forested areas in rope hammocks). Geological research was difficult in AOF. The basement rocks of West Africa are several billion years older than those of France. Until Fernand Blondel created a “pre-colonial” training for geologists in France, French technicians were unfamiliar with the rock structures and sedimentary deposits of West Africa. In many regions, there were no pre-existing topographical maps.²¹ As a result, geologists often provided the local colonial administration with basic baseline data about the terrain, evidence of natural curiosities, and even the location of remote villages and farming hamlets.²²

The task of colonial-era geologists was not unlike that of the historian: reading the earth’s sedimentary strata as a kind of palimpsest, correlating the fragments and arranging them in a temporal sequence.²³ In the absence of aerial and radio-metric mapping, the most important road-signs for the natural history of the earth were outcroppings: rock formations or boulders exposed

²¹ By 1930, Blondel had organized the industrial lobby around the *Comite d’études minières de la France d’outre-mer* (CEMFOM). In 1931, he founded and became the director of the *Bureau d’études géologiques et minières coloniales* (BEFMC), which coordinated research efforts in the colonies. Finally, he founded a “stage précoloniaux”—an apprenticeship for geologists and engineers embarking for the colonies—at the *Ecole des Mines* in Paris. Georges Rocci, “L’oeuvre des géologues français en AOF,” *Travaux du Comite Français d’Histoire de la Géologie*, 3: XXVI, 2 (2012), 25-54.

²² Pierre Legoux and Andre Marelle, eds., *Les mines et la recherche minière en Afrique Occidentale Française* (Paris: Harmattan, 1991) 151.

²³ David R. Oldroyd, *Thinking About the Earth: A History of Ideas in Geology* (Cambridge, 1996), 115.

through erosion or tectonic uplift that are visible indicators of bedrock or ancient superficial deposits. Outcrops are windows into the underlying structure of the earth, called the *terrane*. By measuring the bedding planes, foliation, and depositional features of a series of neighboring outcrops, geologists began to construct a picture of the underlying *terrane* and how and when it was formed. But outcrops are exceedingly rare in the Western Sahel, where the *terrane* is covered in several meters of laterite rock deposited through erosion and, in some zones, volcanic activity. The exception was the Sahara Desert, where high winds denuded rocks of sand. But there were few minerals of economic value to the colonial administration in the desert. Different obstacles were posed to the south, where tropical forests, rather than laterite, covered outcrops and other rock formations that might provide clues about the sub-surface. Geologists complained incessantly about traversing monotonous landscapes for days without finding a “clean rock.” They frequently retreated to the gallery forests lining river ways, where water erosion denuded the laterite and exposed underlying rocks. Because outcrops were so rare geologists relied on sparse data to develop theories of *terranes*. This work was cumulative. Early generations of geologists mapped geological features at a large scale and across broad surface areas. Later generations detailed these maps, refining theories about the *terrane* and its minerals.

The Service of Geology recruited contractual geologist who were young, athletic, and in the words of one administrator in 1940, showed signs of “loving a life in the bush.”²⁴ Much like earlier generations of European explorers in Africa, geologists “camped” in villages as guests of local chiefs and only rarely sojourned at colonial posts with other Europeans. Due to their intimacy with rural populations and African assistants, many geologists became far more skilled in local languages than territorial administrators, who frequently cycled through regional posts

²⁴Archives de la Direction des Mines et de la Géologie du Sénégal (ADMGS), Gilbert Arnaud 1940, 13 September.

every five years or less. Thus, it is not surprising that geologists documented the social and political institutions of the populations they encountered as well as the physical landscape.

By the 1910s, geologists produced two major kinds of studies of African miners. They mapped the physical features of indigenous mines—their location, depth, status as active and abandoned, and the physical relationship of indigenous mine workings to other features of the landscape. Geologists also conducted studies of the “customs” and “rituals” of African gold miners and the notions of sub-soil property exercised by different mining populations in Cote d’Ivoire, Senegal, and Guinea. The goals of this latter genre were manifold. Officials commissioned technicians to study native miners in order to inform administrative efforts to adapt the federal mineral code to the “customary rights” of African gold miners (see Chapter 2). These studies tabulated the profits earned by African miners, and tributes paid among miners and mining “chiefs,” in order to better regulate and tax gold production by working through the “customary” intermediaries of the goldfields. In many respects, studies of “native” mining, like colonial ethnographies more generally, were an instrument of governing through indirect rule. But they also generated technical information about the structure of the earth and its mineral deposits. The fact that studies of indigenous mining were motivated by such sundry goals reinforces one of this chapter’s central arguments: the appropriation of African gold discoveries went hand-in-hand with administrative attempts to regulate mining by African subjects.

Studies conducted by French technicians of African mineral experts crucially informed geological research and mineral prospecting in AOF. Geologists recruited blacksmiths and gold miners to lead them to iron and gold mining sites, both active and abandoned. They interviewed elders and requested guides to the “neighborhood of the ancients”—the location of abandoned gold mines. Geologists speculated about the history of “ancient indigenous industries,” zones

puckered with abandoned gold, salt, or copper mines. Contributing to a common racist colonial myth, geologists speculated that in the deeper past Arab—or even “white” populations—had introduced these complex mine workings, forcing Africans to labor as slaves in the mines.²⁵ Others acknowledged ancient mines as the work of ancestors of local populations, but speculated that these societies had fallen into ruin during the long centuries of the trans-Atlantic slave trade. Geologists imagined that current mining practices were but a relic of more technologically sophisticated extractive practices of the deeper past. Speculation about mining history was particularly intense in regions of Guinea and Soudan dominated by ethnic Mande and, to a lesser extent, Baoule speakers from Cote d’Ivoire and Haute Volta. Mande speakers and their connection to medieval Mali particularly enamored colonial ethnographers and administrators. French and African ethnographers, including Maurice Delafosse and Amadou Hampate Ba, published reports of the technical and ritual features of Mande iron smelting and smithing.²⁶ French geologists also actively recruited Mande gold miners to accompany them on prospecting missions to Cote d’Ivoire, Haute Volta, and Dahomey.²⁷ Mande miners conducted soil samples for French geological missions using local panning techniques, which the French called the “*a la*

²⁵ ADMGS OG, Julian, ‘Rapport sur l’exercice’, 21 Aug. 1929.

²⁶ Beatrice Appia, “Les forgerons du Fouta Djallon,” *Journal de la Société des Africanistes*, 35:2 (1965): 317-352; Amadou Hampate Ba and G. Dieterlen. *Koumen: Texte Initiatique des Pasteurs Peul* (Paris, 1961); Youssouf Cissé, “Notes sur les sociétés de chasseurs Malinké,” *Journal de la Société des Africanistes*, 34:2 (1964), 175-226; Youssouf Cissé, *La confédération des chasseurs Malinké et Bambara: Mythes, rites et récits initiatiques* (Ivry, 1994); Maurice Delafosse, *Haut-Sénégal-Niger* (Soudan français), edited by Gouverneur Marie François Joseph Clozel (Paris, 1912); Raymond Mauny, *Tableau Géographique de l’Ouest Africain au Moyen Age* (Dakar, 1961).

²⁷ African field assistants also accompanied geologists. Despite the rich archival record of geological missions—and a compendium of published memoirs—we know frustratingly little about these field assistants. Alphonse Obermuller, “Difficultés d’un géologue inexpérimenté débutant en AOF,” in Legoux and Marelle, eds. *Les mines et la recherche minière*.

batté nègre.”²⁸ French prospectors also commissioned *orpailleurs* to dig “*puits Malinké*” and “*puits Baoule*,” which translates as Malinké and Baoule pits or wells, as exploration trenches.²⁹



(Figure 15: A wooden sluice introduced by the Service of Geology, Siguiri, Guinea, 1943, Photo Courtesy of the Institut Fondamental d’Afrique Noire)

²⁸ Hervé Robin, “La vie dans un cercle de brousse; mission d’exploration et de prospection dans la région du Bas-Cavally,” in Legoux and Marelle, eds. *Les mines et la recherche minière*, 161.

²⁹ Legoux and Marelle, *Les mines et la recherche minière*; and Samson, “Blondel,” 126.

African miners also learned new techniques from French technicians. From observing and working for French gold prospectors, *orpailleurs* began to build dams in order to divert waterways to strategically lower the water table near placer mines adjoining rivers. Many women gold washers in Guinea and Soudan continued using the wooden sluices introduced to Siguiri by the Direction of Mines in the 1930s and 1940s. These are just two small examples of how, throughout the colonial period, African and European mineral experts constituted a dynamic “field of knowledge” about extractive and prospecting techniques, particularly for gold. However, it was by mapping and surveying techniques of the colonial state that French technicians began to systematically appropriate and learn from African mineral discoveries.

With key exceptions, most *orpailleurs* in AOF mined secondary or alluvial gold deposits.³⁰ The colonial state, however, was most interested in locating parent-rock deposits (also known as lode ore or *filon* in French), for future exploitation by capital-intensive means. Alluvial deposits often serve as “indexes” for primary deposits, because the former are produced by the weathering and disaggregation of gold from lode ore. Since gold is a heavy metal, alluvial deposits are typically transported only minimally through the local water table and are typically formed in close proximity to the parent-rock. For this reason, several generations of French geologists came to refer to African mines as “indexes” for parent-rock deposits. Once African miners discovered a new alluvial deposit, French geologists conducted more detailed geological mapping in an attempt to locate the lode ore from which the secondary deposit originated.

Directors of the Service of Geology referenced the importance of using native mining activities as indexes for locating parent-rock deposits. For example, in 1934 Fernand Blondel wrote that, during “our early general exploration, in effect, geologists noted, each time they were

³⁰ There are a number of reasons why African miners of the Western Sahel infrequently mined parent-rock deposits. For one, extracting lode ore requires more physical exertion. Secondly, many lode ore deposits were considered ritually dangerous because they are lodged in mountains haunted by *jinne*.

able, the native exploitations [...].”³¹ A decade later in 1944, the director of the Service of Geology elaborated on the importance of native mines as “indexes” for research.

We know basically nothing about the location of primary deposits. But we know they are derived from the secondary ones exploited by natives, and we are certain that the gold was only minimally transported, thus the attentive study of the placers in the process of being exploited will permit us to discover primary deposits that can be industrially exploited. [...] The thick laterite covering [of AOF] uniquely complicates this research of deposits. From this regard, we must profit from all of the indexes that can be evidenced by indigenous exploitations.

For much of the colonial period, geologists and private prospectors located gold deposits exclusively by mapping African miners and tracing alluvial deposits back to parent-rock formations.³² The next two sections document the techniques used by several generations of colonial-era technicians to learn from African miners.

Prewar Prospecting and “Take-Overs” of African Gold Mines

With the organization of the federation of French West Africa, the colonial state began to elaborate a more systematic approach to the “rational” exploitation and development of the region’s natural resources. Prior to World War I, the *mise en valeur* of AOF’s “natural resources” focused on rubber collection in Guinea and peanut and cotton farming in Senegal and Soudan. Prior to World War I, both Cote d’Ivoire and Guinea hosted a modest gold boom that attracted French (and some British) mining outfits. These firms lacked proper financing, knew little of West African geology, and were plagued by disease and “labor problems” in regions where Africans preferred to mine for themselves. By 1914, these mining enterprises had closed—with the exception of several dredges operating on regional river-ways. While the

³¹ Fernand Blondel, “Etudes: Les recherches d’or en Afrique française,” *La chronique des mines coloniales*, 33, (1934), 362-9, 369.

³² Since the colonial period, this distinction has been an important arguing point for mining companies and the state: that local populations discover secondary deposits, professional geologists primary ones.

colonial state declared prewar European mining in AOF a failure, the flood of private prospectors and speculators did produce knowledge about the location of indigenous gold mines.

Due, in part, to articles published by French military leaders on the conquest campaign about “the presence of gold a little bit everywhere in West Africa,” by the mid-1880s, a visit to African mines became part of the standard circuit of explorers and traders in West Africa.³³

Published in a French travel journal in 1898, the following is typical of accounts of the day:

Place yourself, along a hillside, a trickle of water flows beside you to the basin of the banks of the Bimbetta, a river running the length of 1200 meters along which several thousand pits are dug so close to each other, such that the soil resembles a sponge or a giant sieve. All around these holes, many of which are over 20 meters deep, men, women, children, are occupied recuperating dirt from pits and going to wash it. [...] And all these people naked, or almost naked, from women of sixty years to girls of twelve to fifteen, perspiring and panting under a burning sun, sinking into the yellow mud up to their knees, struggling constantly. [...] It is truly a human anthill.³⁴

Descriptions of African mines as “anthills” or “beehives” evoked a common racist trope of Africans as an undifferentiated, naked, and dirty mass. These accounts also served as advertisements to metropolitan investors, signaling the ubiquity of gold in West Africa and the availability of a local labor force for future European-managed mines.³⁵

Late nineteenth century travel accounts, and rudimentary maps sketched by French military officers, became the primary guides for French firms who requested gold exploration permits in Guinea and Cote d’Ivoire in the 1890s and 1900s.³⁶ At the time, the insipient French

³³ Centre des Archives d’Outre-mer, France (CAOM), AOF XIII, 2, 4 June 1896. See also Gallieni, “Une Colonne dans le Soudan française, par le colonel Gallieni (Paris, 1888), 66.

³⁴ Louis Le Barbier, “Comment les Noirs extraient l’or a la Cote d’Ivoire,” *Le Tour du Monde* 25 (1903), 98-99. See also Emile Serrant, *Les mines et gisements d’or de l’Afrique occidentale* (Paris, 1889).

³⁵ Archives Nationales du Sénégal (ANS), Mines P 468, “Rapport Atherin,” 18 Décembre 1912.

³⁶ ANS, P Mine File 468. By 1903, the Governor General had delivered to Europeans over 75 permits for research, and 7 for exploitation in Senegal and the Soudan; 190 for research in Guinea, and over 500 for research in the regions of Cote d’Ivoire bordering Ghana, where the British were exploiting kilograms of gold from the ground each year. Several French prospectors followed directly on the heels of military campaigns in the Soudan. Mamadou Lamine—who organized a resistance campaign against the French in Upper Gambia—targeted French gold prospecting camps in Bambuk on several raids. See Abdoulaye

colonial state knew little of regional geology. In fact, the first geological map of AOF was not published until 1911 and was the work of a single French geologist.³⁷ The administration was often ill informed of the political situation in the auriferous zones in which they delivered permits, and they knew even less of the pragmatics of mining. When French mining outfits began to arrive in Guinea and Soudan, local administrators (namely the *commandants* of *cercles*) reported that Europeans were not prospecting for gold as such. Rather, they were seizing deposits already discovered—and actively mined—by Africans.

The first paper trail on these conflicts was produced by a debate between two French prospectors in the goldfields of Bambuk, located to the south of Kayes in colonial Soudan. In 1898, a Frenchman by the name of Leopold Vidal accused another Frenchman of stealing and mining a gold deposit Vidal claimed to have discovered the year prior in the village of Dialafandiri.³⁸ While inquiring into the accusation, the *commandant* of Satadouougou learned that the African residents of Dialafandiri claimed to have discovered and exploited the gold deposit under question for over a generation.³⁹ The administration sided with the village, but similar conflicts emerged several years later on the goldfields of Siguiri in French Guinea.

In 1913, a decade into Guinea's gold boom—which was, by then, already in sharp decline—the *commandant* of Siguiri, a certain Mr. Bidiane, reflected on the causes of a series of disputes between African and French miners. In Bidiane's words:

Bathily, "Mamdou Lamine Drame et la Resistance Anti-Imperialiste dans le Haut-Senegal (1885-1887)," *Notes Africaines*, 125 (1970), 20-32.

³⁷ Henry Hubert traversed the entire federation on foot and horseback, mapping the broad geological contours of each region at a large scale. Pierre Legoux, "L'Afrique Occidentale Française avant la Second Guerre mondiale," in *Les mines et la recherche minière en Afrique Occidentale Française*, edited by Pierre Legoux and André Marelle, 9-30. Paris: Harmattan, 1991; and Henry Hubert, *État actuel de nos connaissances sur la géologie de l'Afrique occidentale, carte au 1/5 000 000e* (Paris, 1911).

³⁸ ANS, P 465 & P 467, "Commandant de Cercle de Kenieba, Le Vidal Affair," 1898.

³⁹ *Ibid.*

In regarding things closely, one rests convinced that practically all of the permits accorded contain, in their perimeters, old and recent pits dug by the natives, and one is led to conclude that the permits were requested because the natives mine for gold within the perimeter, or because they are close to the native work sites. And one could judge that it is not necessary, in most of the cases, that the permit holders undertake laborious research. The work of the natives has already attested to the presence or the proximity of the precious metal.

The Governor General once again sided with native miners, who claimed that the company was violating their “customary rights” to mine gold. The Governor’s judgment hinged on the fact that local *orpailleur*—and not the French miners—had discovered the deposit under question. He wrote: “Since the permit demander [of the permit] ignored that the natives extract a large profit from these deposits—because it is precisely this reason that guided his choice [of permit]—he must evidently accept in advance the conditions of Article 9.”⁴⁰

These conflicts make clear that private gold prospectors in prewar AOF requested permits and installed mining equipment exclusively on gold deposits already discovered by Africans. In the short term, these conflicts reinforced the usufruct rights of Africans, protected in the “customary rights” clause of the federal mineral code. The colonial state realized that AOF’s unique customary rights framework discouraged European investors. However, they also recognized that there were long-term advantages to allowing Africans to prospect for gold. On this point, let us briefly return to the figure of Maurice Barrat, the young mining engineer from Paris commissioned by the Colonial Ministry to draft AOF’s first mineral code. In the mid-1890s, Barrat examined dozens of pre-colonial traveler accounts of native mining and concluded that the state had “much to learn” from prospecting for gold in regions already “undertaken by

⁴⁰ Article 9 refers to the customary rights framework of the federal mineral code of 1899. Décret du 6 July 1899 portant réglementation sur la recherche et l’exploitation des mines dans les Colonies et pays de protectorat de l’Afrique Continentale autres que l’Algérie et la Tunisie (Promulgué en Afrique Occidentale le 29 Décembre 1899).

the natives.”⁴¹ Barrat understood *orpaillage* as an evolutionary stepping-stone on the path to a future and modern mineral “industry.” African mining would lead to the discovery of mineral deposits that could—when the economic and political conditions were ripe—be profitably mined by Europeans. In time, Barrat argued, Africans will cease to work “blindly for themselves” and join “well constituted companies, overseen by [European] geologists.”⁴² Barrat elaborated:

Without doubt, in several years, the social state of these people will be profoundly modified, if the gold mines prosper, they will have the advantage of abandoning their primitive exploitations for agriculture or more profitable mines, but we must not frighten them in the beginning, we must attract them progressively to industrial work.⁴³

For Barrat, “customary rights” would reduce political tensions in the short term while brokering the transition from native to industrial mineral exploitation in the longer-term. Barrat’s evolutionary vision articulated with the broader philosophy of the French civilizing mission in West Africa at the turn of the twentieth century.⁴⁴ What is unique about the case of mining is the prominent role administrators imagined African extractive and prospecting expertise would play in the hoped-for transition from “artisanal” to “industrial” extraction. However, as will become clear below, this transition was constantly deferred and rife with contradictions. In the meantime, colonial geologists accrued considerable geological knowledge by tracking native miners.

⁴¹ ANS, Maurice Barrat, Paris, le 21 octobre 1895.

⁴² ANS, P 465 & P 467, “Commandant de Cercle de Kenieba, Le Vidal Affair,” 1898.

⁴³ ANS, P 499.

⁴⁴ On the French civilizing mission in AOF, see Alice L. Conklin, *A Mission to Civilize: The Republican Idea of Empire in France and West Africa* (Stanford, 1997).

Mineral Mapping in the ‘Neighborhood of the Ancients’

Prior to World War I, it was largely private prospectors who took over African gold mines and discoveries. Between the wars, the colonial administration increasingly formalized the appropriation of mineral knowledge through the systematic mapping of African gold discoveries and study of indigenous mining and prospecting techniques. After the brief prewar gold boom, there was little interest on the part of French investors in AOF’s gold deposits. Beginning in the 1920s, the colonial administration actively encouraged gold mining by African subjects (Chapter 2). The rapid expansion of indigenous mining during this time period, gave geologists the opportunity to document dozens of new gold mining sites located across the federation of French West Africa. The Service of Geology systematically catalogued these discoveries and, in certain cases, conducted more detailed research into African mining sites to determine if they could be industrially exploited. Many of the regions in which interwar geologists tracked African miners were classified as “native reserves,” where only African subjects could mine, to the exclusion of European citizens. But colonial geologists were confident that customary rights laws would be modified in the future—re-opening these territories to industrial activities. In the interim, mapping indigenous gold discoveries within reserves could help in planning for a future European industry. Stated otherwise, efforts to modernize and improve *orpaillage* in the short term was tied to an ambition to replace *orpaillage* altogether with European *industrie*.⁴⁵

By the 1920s, the Service of Geology was coordinating efforts to map indigenous gold discoveries. Fernand Blondel, the French engineer introduced above, recruited new funds for the Service of Geology. Blondel was confident that careful scientific research of AOF’s mineral would “make disappear the opinion, with no real foundation, that AOF is a poor country from the

⁴⁵ ANG, Orpaillage de la Guinée, “Rapport a M. Le Directeur General des Travaux Public, Objet: Programme mise en valeur sous-sol AOF,” January 1944.

mineral point of view and possesses no exploitable mineral substance.”⁴⁶ In the same article, Blondel wrote: “A country, where the natives could by their work extracted 2,900 kilograms of gold in the year, must retain possibilities from production operations for others.”⁴⁷ In 1927, Blondel appointed Jean Malavoy, a young geologist, to head AOF’s Service of Geology.⁴⁸ In 1931, the Service of Geology received a subsidy from the federal bank, enabling Malavoy to recruit a group of roughly thirty contractual geologists to conduct baseline geological research of the federation in addition to some focused gold prospecting.⁴⁹ Under Malavoy’s direction, technicians produced mineral inventories for regions judged to have valuable mineral reserves. In the 1920s and 1930s, the administration prioritized gold and diamond exploration, which could rapidly develop into future mines. Dispatched from Dakar, contractual geologists fanned out across West Africa for six to eight months of the year with instructions to “fill in” quadrants of the federal maps. This work drew heavily on African mineral experts and their discoveries.

The career of the mining engineer, Eduard Julian, embodied the contradictory goals of the Service of Geology to “improve” and “modernize” African mining while simultaneously appropriating African gold discoveries with the hopes of building European industry.⁵⁰ As detailed in Chapter 2, Julian managed the “model mine” project in Kentinian, Guinea from 1932 to 1936, when the Service of Geology announced the project a failure and closed the mine. While

⁴⁶ ADMGS, M. L. Lavila, Ingénieur Principal des Mines des Colonies, “L’Industrie Minière en Afrique Occidentale Française,” Dec. 1932.

⁴⁷ Fernand Blondel, “Etudes: Les recherches d’or en Afrique française,” *La chronique des mines coloniales*, 1934 (33), 362-9.

⁴⁸ Malavoy essentially replaced Hubert’s post, which had been vacant since 1923, when Hubert was transferring to his position in meteorology. Malavoy remained in service until 1935 (8 years).

⁴⁹ Catherine Coquery-Vidrovitch, “Vichy et ‘Industrialisation’ aux Colonies,” *Revue d’histoire de la Deuxième Guerre mondiale*, 29e Anne, No 114 (1979), 69-94.

⁵⁰ The model mine was framed within an ideological framework of “mutual development”: improved methods would increase the wealth of France, but also assist in the “economic and social evolution of the populations themselves.” Moreover, the model mine would encourage African technological ‘evolution’ and while remaining within the bounds of ‘customary’ institutions (see Chapter 2).

in Kentinian during the heart of the interwar gold boom, Julian succeeded in producing numerous studies of indigenous mining techniques and mapping fresh African gold discoveries.

Julian began interacting with gold miners in Siguiiri in 1927, when he was assigned as the sole geologist in French Guinea to map the territory's mineral potential. In 1931, Julian published an extensive report and compendium of maps on Guinea's mineral endowments, the data for which he collected while traversing the entire colony on foot and horseback. Julian's study focused on the potential of developing iron deposits in the southeastern corner of the colony and gold in Siguiiri—which occupied the basin of the Niger in the northeast. In Julian's estimation, current global prices for minerals, coupled with the high cost of developing infrastructure in Guinea, rendered gold the only profitable mineral to exploit in the near term. Julian was, in fact, an early proponent of the Service of Geologist working to “rationalize” the “indigenous exploitations” of Siguiiri through research and technical assistance. After all, Julian argued, *orpaillage* was “Guinea's only active and viable ministry industry at present.”⁵¹

Julian's estimates of Guinea's gold reserves and future industrial potential were based exclusively on regions actively exploited by local miners—namely Mande speakers in Siguiiri. Similar to Maurice Delafosse—a colonial administrator and ethnographer whose magnum opus focused on Mande groups in Soudan—Julian was enamored by the “lost civilization” of medieval Mali.⁵² Julian imagined the mining techniques of “the ancients” were far superior to those of current populations. One day while on tourney in the countryside, Julian toured a mining cavern supported with wooden beams, a technology Julian's contemporaries judged beyond the

⁵¹ ANG, OG, Eduard Julian, Ingénieur-adjoint des Mines, “Mission d'Etudes Géologiques et de Recherches Minières (1923-1930),” Rapport General, Colonie de la Guinée Française.

⁵² Maurice Delafosse, *Haut-Sénégal-Niger*.

reach of West African *orpailleur*. Julian concluded that Arabs or other “immigrants” built these mines while using Africans as slave laborers.⁵³

While elaborating his plans for the model mine in Kentinian, Julian studied the techniques of male miners who dug mining shafts and women who recuperated and washed gold with water. While managing the model mine in Kentinian, Julian traveled across French Guinea visiting recently discovered gold deposits. For example, in February of 1933, Julian traveled to the *cercle* of Kouroussa after the local commandant signaled the opening of a new *dioura*. Over the course of several days, Julian camped at the edge of the village bordering the mine. Each morning he joined *orpailleurs* on the road to the mines. He joined these miners on the bank of a nearby river, where he sketched the distribution of active mining pits on the landscape in reference to other notable topographical features. He sent African assistants to sample soils from mining shafts for concentrations of gold and other minerals. Julian also conducted interviews with several elders in the circle, who guided him to an “ancient neighborhood” of gold workings, abandoned over a century ago. Julian ordered the African chief of the canton of Kouroussa to recruit laborers to dig a row of twelve prospecting pits adjacent to the active mine in order to speculate on the size of the underlying gold deposit exploited by local miners, which was a former alluvial gold mine. Before leaving Kouroussa, Julian recruited several men and women to visit the “model mine” in Kentinain for instruction in “improved” gold washing techniques. Julian, of course, returned to Kentinian with new knowledge of his own: Kouroussa was now on the mineral map of AOF.⁵⁴

Julian’s hope was that the intensifying prospecting and extractive activities of African miners would lead to the discovery of gold deposits that could be profitably exploited by

⁵³ On similar colonial-era theories of “Arabs” building mines and earthworks in pre-colonial Zimbabwe, see Henrika Kuklick, “Contested Monuments: The Politics of Archaeology in Southern Africa,” in George Stocking, ed., *Colonial Situations: Essays on the Contextualization of Ethnographic Knowledge* (Madison, WI, 1991), 135-169.

⁵⁴ ADMGS, Eduard Julian, Kentinian, Feb. 22, 1933.

Europeans in the future, once Africans exhausted the exploitation of surface deposits.⁵⁵ As Julian wrote in a report addressed to the federal Service of Geology in October of 1930, “We are going to examine the advantages we can pull from the actual state of things and the possibilities for future requests (for permits from European enterprises).”⁵⁶ During his initial exploration of several alluvial deposits mined by local populations, Julian recommended to his superiors in Dakar that further geological research and prospecting be carried out to determine if the mine was associated with a larger parent-rock ore body that could be exploited by European firms.

After the model mine was declared a failure in 1936, the Service of Geology sent a new contractual geologist to Kentinian to wrap up the project. While Julian’s primary assignment was to help *orpailleur* improve their gold mining and washing techniques, the role of the new geologist, named Bardin, was limited to gold prospecting.⁵⁷ During the same time period, in 1935, a geologist by the name of Alexis Chermette explored other native “indexes” in Cote d’Ivoire. Chermette—whose hand-drawn maps are featured below—was asked to map the “amplifier of the former work of the natives on a vein of auriferous quartz, situated by an abandoned village.”⁵⁸ In this case, the “ancient indexes” consisted of tailings produced by local extraction of a parent-rock deposit, first noted by Jean Malavoy in 1928 while he was exploring for manganese. During his mission in Cote d’Ivoire, Chermette commended the skills of African miners, most of whom had abandoned gold mining in favor of working on the cocoa plantations of southern Cote d’Ivoire and Ghana. Like Eduard Julian, Chermette interviewed elders who had

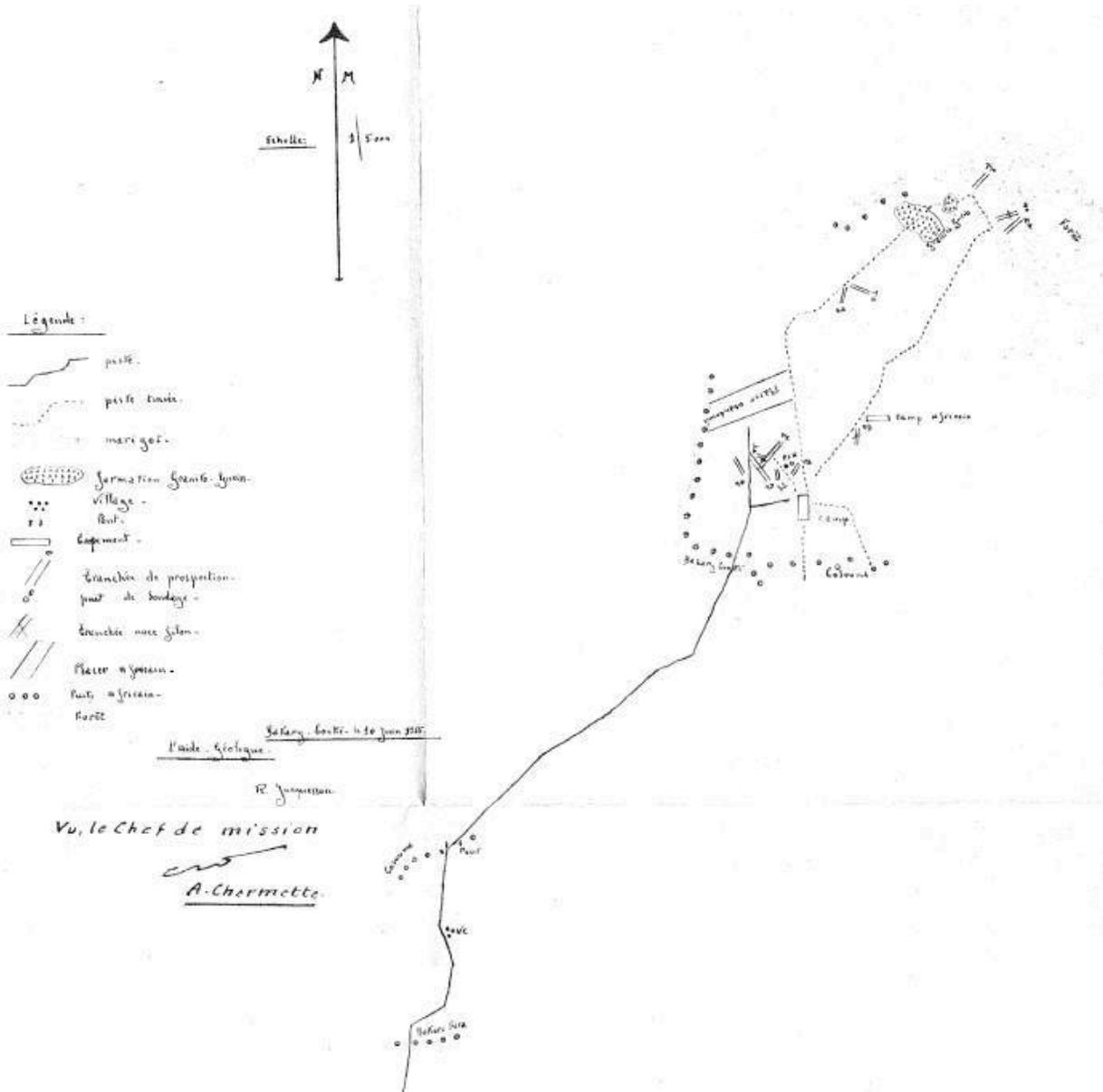
⁵⁵ ADMGS, Julian, Oct. 15, 1930

⁵⁶ ADMGS, Eduard Julian to Malavoy, Kentinian, 15 October 1930,

⁵⁷ ANG, OG, Launay, Dakar, Sept. 11, 1934. Bardin was also charged with demonstrating women how to recuperate more gold during the washing process by using a water sluice.

⁵⁸ ADMGS, Alexis Chermette, Géologue Principale des Colonies, “L’or Filonien Dans le Fitaba, Cercle de Dabola (Haute-Guinée),” Service de Géologie et de Prospection Minière, June 1956. See also Alexis Chermette, “Les Filons de Quartz Aurifère de Hire Cote d’Ivoire,” Sep. 1935; Alexis Chermette, “Rapport Technique sur l’Ensemble des Travaux de Recherches Minières Effectues dans la Chaîne du Niandan Banie, Au Cours, 1 April 1943 to the 1 June 1945.

exploited the parent-rock deposit prior to World War I. Chermette commissioned local laborers to clear an old military road connected to the mines and began to take samples of the “work left by the natives.” Chermette dug exploration pits parallel to the former activities of local miners. Based on these studies, Chermette estimated that there was still ore left to mine.⁵⁹



(Figure 16: Map of *orpailleur* gold workings by Alex Chermette, Siguiri, Guinea, 1935, Courtesy of the Direction des Mines et de la Géologie, Senegal)

⁵⁹ Ibid, 169.

Rotislav Gouloubinow arguably acquired the most intimate knowledge of African mining techniques between the wars. Gouloubinow was a specialist in gold exploration, and his superiors frequently praised his fluency in Maninkakan (Malinké in French), acquired while conducting years of gold prospecting among Mande gold miners in Guinea. Gouloubinow was among the first full-time prospectors assigned to AOF. Diligent and respected among his colleagues, Gouloubinow spent years mapping gold deposits in Guinea and Soudan. In 1936, he published a doctoral thesis on geology and the gold resources of northeastern Guinea.⁶⁰ In 1940, Goloubinow would publish an article detailing how to combine basic geological exploration with rapid gold prospecting, a method he developed in interwar Guinea. As Gouloubinow wrote: “the only guide to the prospector is a large scale map, delimiting auriferous regions to eventually prospect and indicating a certain number of rudimentary indigenous exploitations.”⁶¹

In the mid-1930s, the Office du Niger, which ran a cotton-farming development project in colonial Soudan, briefly experimented with gold prospecting with the idea of introducing a gold mining component into the “indigenous colonization” promoted by the Office.⁶² Between 1936 and 1940, the Office dug a total of 25,000 meters of exploration pits in the middle of the “ancient indigenous workings” focused on locating lode ore deposits.⁶³ The exploratory mission of the Office du Niger also established a map of 1/10 000 in order to map, more precisely, the zones worked by the natives. Similar to geologists working for the Service of Geology, the mission

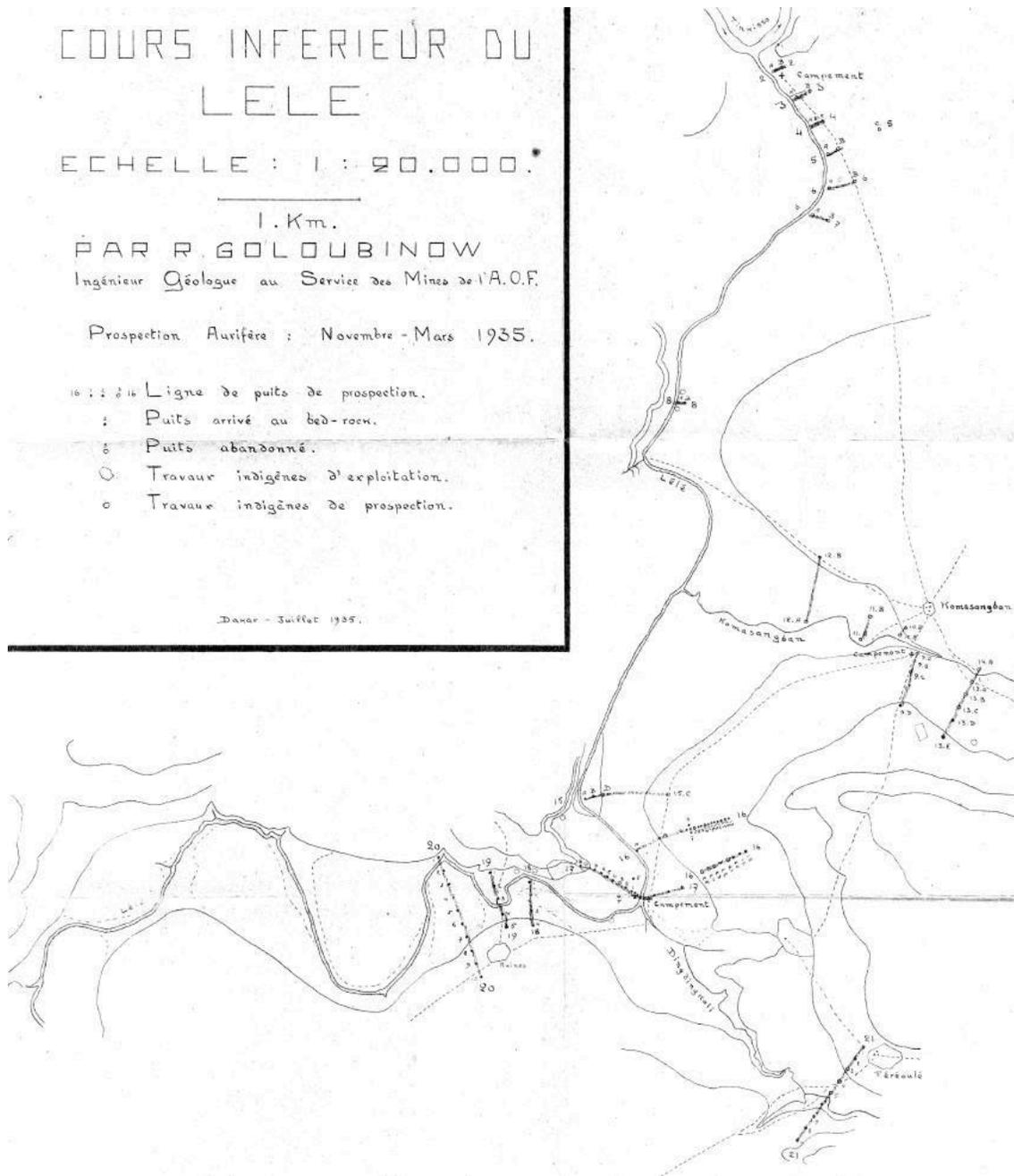
⁶⁰ Rotislav Goloubinow, “La géologie et les ressources en or du Nord-Est de la Guinée Française,” Nancy 1936; Rotislav Goloubinow, “L’or en Guinée française,” *Extrait du Congrès International des Mines, de la Métallurgie et de la Géologie appliquée, VII Session* (Paris, Oct. 1935), 20-26; ANG, Rotislav Goloubinow, Ingénieur Géologue, “Rapport de Prospection Aurifère sur le Cours du Lele, Guinée” (16 November 1934 5 9 January 1935).

⁶¹ Rotislav Goloubinow, “La Prospection et les gisements d’or de demain,” *Publications du Bureau d’études géologiques et minières coloniales*, 15 (1940), 5-11, 5.

⁶² For this project, the Office du Niger acquired most of the materials from Julian’s model mine.

⁶³ ADMGS, Bagama, Office du Niger.

interviewed elders about the antiquity of certain abandoned mines, noting that the “oral tradition dates them to before the time of Samory [Toure].”⁶⁴



(Figure 17: Map of indigenous mines by Rotislav Goloubinow, Guinea, 1935, Courtesy of the Direction des Mines et de la Géologie, Senegal)

⁶⁴ Ibid.

Private prospectors also carried out studies of indigenous mines between the wars. For example, Hippolyte Marie Mathelin de Papigny, a Belgian with extensive experience prospecting for gold in the Belgian Congo, spent fifteen days living among African miners in the Soudan.⁶⁵ De Papigny's estimated that the "question of indigenous gold exploitations presents for those who would like to try their hands at the minerals of Senegal and Soudan, a primary interest." Similar to geologists in the Service of Geology, de Papigny proposed that an "examination of their [African] methods of research and exploitation permits us to determine if there are chances of finding new deposits, in their former workings or in their proximity."⁶⁶ During his stay in Soudan, de Papigny measured the depth of African mining shafts, the distance between pits, and conducted interviews with local miners on their techniques and former mining sites. De Papigny argued that while this region of the Soudan was covered by an "indigenous reserve" [...]

an examination of their [African] methods of research and exploitation permits us [European prospectors] to account for the chance of finding deposits that or new or in the proximity of their former work, but still susceptible to exploitation.⁶⁷

De Papigny surmised that there were "great chances of discovering profitable deposits immediately bordering former indigenous mines." But he was less optimistic about the possibilities of recruiting local gold miners who prefer to "work for themselves" [rather than Europeans].⁶⁸ These are just several examples of dozens of studies produced by geologists in the 1930s and 1940s about the techniques, locations, and history of *orpaillage* in AOF.

⁶⁵ De Papigny, Hippolyte Marie Mathelin, "Note sur les exploitations indigènes du Satadougou," *Bulletin du Comité d'études historiques et scientifiques de l'Afrique occidentale française*, 8(3), 1925, 394-404. In 1910, De Papigny was a civil engineer sent by the Belgian government on a gold prospecting mission in Belgian Congo. In 1918, he became the Director of Engineering in the Mangbetu territory of Congo.

⁶⁶ *Ibid*, 394.

⁶⁷ *Ibid*, 396.

⁶⁸ *Ibid*, 394.

Postwar Experiments with “Indigenous Empiricism”

For several years during World War II, the Governor General of AOF outlawed gold mining by African subjects altogether to encourage agricultural production and the collection of bush products—including rubber. With increased demand for tropical commodities for the war effort, the AOF could no longer afford to ship grain to populations who did farm, to miners on Siguiri’s goldfields. When the ban on gold mining was lifted in 1944, global prices for gold had fallen markedly. Africans returned to the goldfields of Guinea, Soudan, and Senegal, but in much smaller numbers than before the war. Throughout the 1940s and 1950s, geologists continued to document the mineral discoveries of African miners and study their techniques. But new factors in the postwar economy and policy climate led to a shift in AOF’s policies toward *orpaillage*.

World War II severely troubled the moral foundation of imperialism and shattered the notion that Europe was impervious to critique or defeat. African soldiers had made crucial contributions to the French army and witnessed France under foreign rule. Upon returning ‘home’ to West Africa, they demanded political rights more commensurate with French citizens, whom they had fought alongside, now in two world wars. In the aftermath of war, France and Britain embraced “development” as a renewed justification for colonialism. With the “Brazzaville Conference” of 1944, France began extending limited political rights in the colonies. In October 1946, the French Empire was renamed the French Union and a new constitution was drafted for the Fourth Republic. An important feature of the new constitution was that each overseas territory now elected representatives to “General Councils,” which presided over the allocation of land, mining permits, and other natural resources.⁶⁹

The postwar French empire was increasingly technocratic. The Brazzaville conference outlined policies for industrializing colonies by encouraging private investments and state

⁶⁹ On these transitions, see Ruth Morgenthau, *Political Parties in French-Speaking Africa* (1965).

planning of the economy (“*une économie dirigée et planifiée*”). With the assistance of Marshal Funds, France invested in scientific research overseas, including mineral exploration. For the first time since conquest, France also emphasized the importance of industrial development—albeit restrained—in French Africa. Prospecting for gold remained a priority, but a new emphasis was placed on exploring for “industrial” minerals: uranium, bauxite, petroleum, iron, chromium, and phosphates. Geologists in AOF hoped new research funds and an emphasis on industrial development would usher in the long hoped-for transition from a mining economy based on “*orpaillage artisanale*” to an “*industrie européenne.*” Once again, geologists imagined African mineral expertise playing a role in brokering this transition. What differentiated the postwar era from earlier chapters in colonial history was that the Service of Geology created more formal mechanisms to incorporate African miners, prospectors, and “chiefs of the mines” (*diourakuntigi*) into the scientific and administrative apparatus of French West Africa.

In 1948, France reconsolidated its overseas mineral operations through the creation of a public enterprise, *Le Bureau Minier de la France d’outre-mer* (BUMIFOM). By 1950, the staff and resources of the Service of Geology in French African colonies quadrupled. In Dakar, a new three-story building was built on the campus of the Université de Dakar to house BUMIFOM. The complex was designed to house up to 45 geologists and was equipped with laboratories, a mineral museum, dozens of offices, a map-making studio, and a state-of-the art library with mineral, geological, and chemistry periodicals from around the globe.⁷⁰ With fresh funds, equipment, and an expanded mandate, AOF’s Service of Geology launched a far more ambitious

⁷⁰ Only petroleum and uranium prospecting remained out of BMFOM’s ambit, as separate public agencies carried out research on these strategic minerals. BMFOM also foresaw the incorporation of more Africans into geological research, as laboratory aids and field prospectors. In 1958, over 36 scholarships were attributed to African students from across French West Africa to pursue geological training in France. In 1959, a “prospecting school” was created at BMFOM in Dakar to initiate African technicians to methods of mineral exploration laboratory work. See Georges Rocci, “L’oeuvre des géologues français en AOF.”

plan for geological research and mineral prospecting. To accompany the launch of BUMIFOM in Dakar, geologists and mining engineers working in West Africa and France drafted a new plan for the “Mineral Development of AOF.” The plan reiterated Fernand Blondel’s philosophy: the primary role of the public institution of the Service of Geology was to conduct basic geological reconnaissance and to indicate the “most useful mineral substances in the colonies” that could be developed by private mining industries under the close regulatory eye of the state.

A series of wartime reports influenced the drafting of this plan, including a 1944 report by Gilbert Arnaud, then director of the Service of Geology, titled “Program for the ‘mise en valeur’ of the sub-soil of West Africa.”⁷¹ Like his predecessors since the late nineteenth century, Arnaud believed that *orpaillage* was an evolutionary phase on the path toward modern industry. Arnaud imagined that *orpaillage* would “become a thing of the past” as peasants found greater returns in mechanized agriculture.⁷² Moreover, he argued that geologists had now “identified in several points of the federation geological formations that enclose rich primary deposits like those of the Gold Coast that only remains for us to prospect.”⁷³ Also like his predecessors, Arnaud imagined a role for African *orpaillieur* in brokering the transition to a mining “industrie.” West Africans, he argued, are “experienced miners, true specialists who have a deep experience with certain types of deposits and who conduct real prospecting.”⁷⁴ This “mass of specialists [...]

⁷¹ ADMGS, Haut Commissariat de la République en Afrique Occidentale Française, Direction Fédérale des Mines et de la Géologie, Programme d’Activité de 1958 a 1962, May 1957.

⁷² According to Arnaud, the near disappearance of *orpaillage* in Cote d’Ivoire and Ghana was evidence that Africans would stop mining with the introduction of mechanized agriculture or tighter integration into the market economy. Arnaud, ‘Rapport sur l’organisation administrative,’ 1944.

⁷³ ANG, 3 Q 10 Arnaud, Directeur des Mines de l’AOF, ‘Rapport sur l’organisation administrative, technique, et coopérative d’orpaillage’, Dakar, 11 Sep. 1944.

⁷³ Ibid.

⁷³ Ibid.

⁷³ Arnaud’s policy formalized the long-standing practice of French geologists to map native miners. See ADMGS OG, Goloubinow, ‘Prospection aurifère en Guinée’, 9 Aug. 1935.

⁷⁴ ANG, “Arnaud, Directeur des Mines de l’Afrique Occidentale Française,” 11 Sep. 1944.

probably more than 100,000 in number, already familiar with subterranean work and with recuperating gold, is an immeasurable capital for the AOF that we must prudently manage.”

Arnaud called for the administration to benefit from this “human capital” by mapping the distribution of native mines across the federation--in other words, to formalize a long-standing ad-hoc practice of the Service of Geology.⁷⁵ For Arnaud, *orpailleurs* could continue to mine their gold discoveries, unless the administration judged the deposit better suited for industrial mining.

Orpailleurs will keep, however, the right to discover and exploit primary deposits, under the reserve that, if the rational exploitation of these judgments exceeds their technical capacities, the Administration can evict them to the profit of an industrial enterprise.⁷⁶

This is the most explicit reference to the larger strategy of the colonial state detailed in this chapter: to encourage *orpaillage* in order to document African gold discoveries, while retaining legal mechanisms to restrict these rights in order to encourage European industries. Paul Seyer, chief engineer of mines in AOF during World War II, proposed a similar scheme.⁷⁷ Europeans and Africans would both prospect, but specialize in their extraction of these discoveries: Africans would mine alluvial deposits and Europeans’ parent-rock. In Seyer’s words:

It is now technically possible to guide, for the research of new mines, the empiricism of the native *opraillieurs* in a manner to notably expand their production: a qualified engineer, assisted by five topographers and as many foremen managing sampling machines, could in several years orient the natives toward a more rational and productive exploitation of mines that they have traditionally exploited. There is no reason to think that black miners are less open to progress than black peasants, who very quickly recognized the merits of plows and animal traction for agriculture.⁷⁸

Both Arnaud and Seyer believed that collaborative mapping would benefit both European and African miners. The downfall of African prospecting, according to Arnaud, was that Africans did not “possess a general view of the geographic distribution of mineralized zones. Thus, they could

⁷⁵ Arnaud, ‘Rapport sur l’organisation administrative, technique, et coopérative d’orpaillage’, Sep. 1944.

⁷⁶ As long as the Direction of mines or the private industry have not found primary judgments like those of the Gold Coast we must count on African mining as the principal source of gold in the AOF.” Ibid.

⁷⁷ ANG, Seyer, Chief Engineer of the Service of Mines, Nov. 4, 1940.

⁷⁸ ADMGS, Seyer 1941.

only extrapolate timidly within the neighborhood of ancient mines, which limits their chances of success.”⁷⁹ With mapping technologies, however, French geologists could offer an “aerial view” of the distribution of gold deposits and then guide African mining chiefs to the most “productive zones to exploit.” Arnaud elaborates on this point in his 1944 report:

In following attentively for several years the work of African prospectors we could probably delimit the mineralized zones that, with our advice, permit future mining chiefs to locate much quicker deposits they can extract with their empirical knowledge.⁸⁰

For Arnaud, Africans would carry out the bulk of gold reconnaissance, “at their risk but also to their entire benefit,” with occasional technical assistance of French geologists.⁸¹ Paul Marelle, who succeeded Arnaud as director of the Service of Mines, elaborated a similar vision for combining European and African prospecting expertise, with the goal of encouraging Africans to specialize in exploiting secondary, and Europeans primary, gold deposits.⁸² In Marelle’s words:

And the best means to increase their productivity will be to facilitate the work of the natives, notably for research. We must delimit mineralized zones [...] and then guide indigenous prospectors and encourage them more than we have the habit of doing.⁸³

The Service of Geology proposed--and, in some cases, implemented--several policies that combined the “empiricism of the natives with our scientific knowledge.” To facilitate collaboration between African gold prospectors and colonial technicians, Arnaud proposed creating a formal post for African “chiefs of mines” (*diourakuntigi*) analogous to “village chiefs” (*dugutigi*), approved or appointed by the colonial administration. In Arnaud’s words:

...role of the chief of the mine must be conserved because they are, in the technical domain, the natural intermediaries between the administration and the natives just as the chiefs of the village are in the political domain.⁸⁴

⁷⁹ ANG, Arnaud, ‘Rapport sur l’organisation administrative,’ 1944.

⁸⁰ *Ibid.*

⁸¹ *Ibid.*

⁸² *Ibid.*

⁸³ ADMGS, Marelle Files.

⁸⁴ ADMGS, “The Governor General to the Ministry of Overseas France,” Apr. 5, 1946.

Creating a formal investiture for chiefs of the mines, according to Arnaud, offered “social advantages” because these men would exercise a “strict discipline on the placers.”⁸⁵ The Governor General supported Arnaud’s proposition to “officially” integrate mining chiefs, since they were “invested by tradition in the past.” The Governor General stipulated that *diourakuntigi* should “obtain a written authorization from the commandant de *cercle* or of the subdivision” before each season of gold prospecting (the dry season).⁸⁶ This had a double advantage of increasing the state’s surveillance and taxation of the mines, while facilitating the mapping of African discoveries by geologists. Beyond several investitures of *diourakuntigi* in Guinea, there is scant archival evidence for the degree to which this policy was implemented in practice.⁸⁷

In the 1940s, the Service of Geology also opened several training centers that incorporated African miners into official prospecting activities. Proposals were elaborated for a “school for prospectors and mining foremen” in the Ecole Technique Supérieure de Bamako—which trained Africans in a range of technical fields. Technicians planned to recruit young men from auriferous regions to the school, including *soughoumbali*--young miners who re-excavated abandoned mining shafts at great personal profit and peril. The school would offer professional training for African gold prospectors and future *diourakuntigi*. At the same time, it would give colonial geologists an opportunity to “monitor and encourage the evolution of artisanal techniques.”⁸⁸ While the Service of Geology never opened the prospecting school in Bamako, they did open a much smaller school based on the same model in Cote d’Ivoire in the 1940s. Plans for the school took shape when a group of Liberians began exploiting gold in the circle of Bas-Cavally, Cote d’Ivoire in the early 1940s. Liberians were largely exploiting alluvial gold

⁸⁵ ANG, Arnaud, ‘Rapport sur l’organisation administrative’, 1944.

⁸⁶ ADMGS, “The Governor General to the Governor of Guinea,” May 10, 1945.

⁸⁷ ANG, “The Governor General to the Governor of Guinea, Feb. 1946.

⁸⁸ *Ibid.*

deposits along a major river in circle.⁸⁹ The *commandant* signaled the insipient gold rush to the Service, who dispatched a geologist, Hervé Robin, to map the new discoveries and to “put order to this clandestine extraction.” Arriving in Bas-Cavally in 1947, Robin employed local laborers to dig reconnaissance pits across the mineralized zones, a technique used by geologists throughout the 1930s and 1940s to sample deposits discovered by native miners. The gold rush quickly waned, but the Service continued exploring the area. By 1950, another staff geologist, M. Bolgarsky, suggested actively encouraging *orpaillage* in the region. There was a rich history of native mining in the neighboring regions of Haute Volta (now Burkina Faso), but most families had abandoned dry-season mining in favor of more lucrative employment on cocoa and coffee farms to the south. Bolgarsky hoped to revitalize *orpaillage* by opening a “prospecting school” to train Africans in systematic mineral exploration. The idea was that Africans trained in these techniques would, in turn, document new local gold discoveries to the Service of Geology in Abidjan and back in Dakar. This would vastly expand mineral exploration in Cote d’Ivoire, which had been marginalized by the Service in comparison with Soudan, Guinea, and Senegal.

Bolgarsky’s project was approved and by 1951 a geologist by the name Roger Causse was sent to Bas-Cavally to develop the school in the town of Guiglo. In November 1951, Causse instructed 12 students to read a topographic map, map their exploration routes with a compass, to coordinate the digging of rectangular exploration pits, and to sample mineral concentrations with simple panning techniques. Causse instructed students already fluent in basic French to write reports and prepare documents for permit requests. While enrollment was initially timid, the school was declared a success. By the close of 1951, it was inaugurated as the “Ecole de Moniteurs de Mines” and permanently attached to Cote d’Ivoire’s Service of Geology. Through these diverse initiatives, the Service of Geology attempted to formally incorporate African

⁸⁹ Hervé Robin, “La vie dans un cercle de brousse,” 159.

orpailleur into the scientific and administrative apparatus of the federation. These initiatives built upon decades of informal exchanges among French prospectors, geologists and administrators and African *orpailleur* and *diourakuntigi*.

Conclusion

Since colonial conquest in the 1890s French prospectors and miners “discovered” gold deposits in French West Africa by tracking the active and abandoned mines of *orpailleurs*. After World War I, the Service of Geology initiated more systematic efforts to document African gold discoveries through targeted mineral exploration of specific regions. French geologists also conducted studies of the customs and rituals of African miners. These studies informed the drafting of federal mineral decrees and diverse efforts to “improve” African extractive methods. African miners also learned and appropriated techniques from colonial agents, including methods of diverting streams, prospecting, and the use of wooden sluices to concentrate gold during the mineral washing process. West African and French mineral experts created a “field of knowledge” that led to the discovery of a host of new goldfields in French West Africa.

Few of the gold deposits discovered and documented from conquest in the 1890s until decolonization in the late 1950s led to the opening of “industrial” mines under French rule. However, independent African states and private industries under their regulation exploited a number of colonial-era discoveries in later decades. Today, the village of Kentinian—where Eduard Julian established his “model mine” in the 1930s—sits at the heart of Guinea’s largest open-pit gold mine, now operated as a joint venture between the government and Anglo-Gold Ashanti. It was during the colonial period, and largely due to Julian’s “failed” model mine, that

Kentinian became legible as an important gold “reserve.” Further, colonial-era mineral prospecting generated baseline studies for independence-era mineral mapping (Chapter 4).

While the colonial state encouraged Africans to discover new gold deposits, they also selectively restricted and criminalized the rights of Africans to mine these discoveries.

Orpillage was encouraged when it generated export taxes, paid for head taxes, and led to discoveries that could be “shelved” for future industrial development. But colonial officials considered African mining a stepping-stone to a future *industrie*. In the 1930s and 1940s geologists piloted programs to capitalize on the skills of African miners, recognizing that this “mass of specialists” could facilitate the discovery of gold deposits exploitable on an industrial scale. This evolutionary vision of *orpillage* transitioning into *industrie* was, however, fraught with contradictions. Colonial technicians both wanted to “improve” and “modernize” African mining techniques, at the same time as they decried artisanal mining as primitive--lower on the evolutionary scale of technology than highly capitalized European methods. Further, attempts to combine European and African mineral expertise raised political questions. If Africans discovered a given deposit, would they retain a right to exploit it? As documented in Chapter 2, African politicians took up these questions in French parliament, in territorial assemblies in West Africa, and in the press. In later decades, multi-generational *orpilleur* would continue this debate by seeking recriminations for the “taking” of their, and their ancestors, gold discoveries.

Despite the ambiguities of the colonial state’s political vision for *orpillage*, it should now be clear that state geologists and private prospectors benefited from the prospecting activities of African miners. The violence of colonialism created an “open source” economy of knowledge about the subsoil, as well as therapeutic plants and other natural resources. Scholars working at the intersection of science studies and African history argue that African field

assistants and experts “co-produced” a range of scientific discoveries in the colonies that are typically credited to European agents. Certainly, many of the gold deposits documented by French geologists were the product of collaborative labor. But, in many cases, appropriation is a more apt term to describe this knowledge production. Most of the deposits explored by French geologists were first discovered, or signaled by, African *orpailleur*. Over time, African miners benefited little from exchanging subterranean knowledge with European geologists and miners. By drawing attention to the capture of African mineral knowledge by the French colonial state, this chapter reinserts struggles over expertise into the scholarship on mining capitalism in Africa.

PART III

Nationalizing Extraction in Senegal

Part III of this dissertation shifts its geographic focus from the goldfields of colonial French West Africa to examine how decolonization and the globalization of the mining industry shaped the mineral policies of a single independent state: Senegal. In so doing, the narrative returns to the goldfields of Upper Gambia, with which this dissertation began. Today, the colonial designation of Upper Gambia largely aligns with the region of Kedougou, Senegal. The colonial period was characterized by a certain regulatory fluidity toward *orpillage*. Independence, however, narrowed the rights of citizen miners. While the leaders of independent Senegal, Mali, and Guinea embraced divergent visions of African Socialism, they all promoted a rural citizenry composed of family farmers or industrial laborers on state-owned enterprises.

There was no place in their vision of national economies for the mobile *orpilleur* in search of accumulating individual wealth. Further, resource sovereignty initiatives--supported by the Bandung Conference of 1955, and later the United Nations Organization--encouraged independent states to restrict the access of “private” (namely ex-imperial) firms to Africa’s natural resources. By strengthening state control over natural resources, these policies also restricted the rights of “private” citizens to minerals, land, and forest products. Below, I briefly outline how national and international political ambitions converged to increasingly criminalize mining by African citizens. At the same time, independent states and expatriates working for cooperative mineral mapping programs continued to learn from the knowledge and skilled labor

of “artisanal” miners. This introduction overviews key domestic and international concerns that shaped the mineral policies of independence-era Mali, Guinea, and Senegal. This interlude also places Senegal’s policies and developmental ambitions for minerals within a broader regional and transnational framework, which extended far beyond its post-imperial ties to France.

Decolonization, African Socialism, and Industrialization

After World War II, African politicians and colonial reformers in French West Africa began to renegotiate their relationship with France, pushing for more equal treatment with metropolitan citizens and for greater political representation in French parliament and in representative bodies at the federal and colonial level in West Africa. In 1956, the passing of the *loi cadre* reforms by the French National Assembly transferred substantial powers from Paris to elected territorial governments in French West Africa. These reforms also expanded suffrage for African men and women. In 1958, Charles de Gaulle organized elections in West Africa to determine the future relationship of these territories to France. De Gaulle offered African colonies the option of immediate independence or increased autonomy as junior members of the *Communauté Française* of France’s newly formed Fifth Republic. In a referendum held in September 1958, Guinea was the only colony to opt for immediate independence by popular vote. France withdrew from Guinea swiftly and with retribution, severing economic and diplomatic ties. By October, Guinea proclaimed itself a sovereign and independent republic and expelled many French traders, missionaries, and businessmen from its territory. Ahmed Sékou Touré—the leader of the Parti Democratique de Guinée (PDG) that spearheaded Guinea’s independence-movement—became Guinea’s first president. Senegal and Soudan voted to joint the *Communauté Française* in a federal venture called the “Mali Federation,” which linked the

two colonies into a single political and economic unit coordinated from Dakar. In 1960, after negotiations with France, the federation became independent. Yet less than two months later, the Mali Federation disbanded. Modibo Keita became the president of independent Soudan (renamed Mali) and Léopold Sédar Senghor the first president of Senegal.

Independence-era leaders had the challenge of forging a platform for self-government that signaled a break from colonial rule while also uniting their spectacularly diverse populations. They aimed to remake the geography of colonial markets and infrastructures, and to also “recover” African values and cultural practices that had been compromised by six decades of colonial rule and by the long centuries of the trans-Atlantic slave trade. Young presidents aimed to replace affiliations of race, ethnicity, and region—which animated a great deal of postwar political organizing—with “national” forms of identity and affiliation. Various versions of “African Socialism” became the ideological template upon which these men relied.¹ Guinea and Mali pursued aggressive policies of total economic and political decolonization, minting their own currency, expelling the French military, and courting technical and financial assistance from the U.S.S.R., the Popular Republic of China, and the United Arab Republic.² While Senegal declared itself a fully independent republic, it remained tightly linked to France by “accords of association.” Signed shortly after independence, these cooperative agreements established privileged trading policies, military assistance, and a shared monetary system.³

¹ From the 1950s-1980s, no less than 35 out of 53 African nation-states proclaimed themselves socialist at one juncture or another. Independent states pursued diverse forms of socialism ranging from the scientific socialism of Karl Marx to more populist visions of “African Socialism.” On these divergences, see Anne Pitcher and Kelly M. Askew, “African Socialisms and Postsocialisms,” *Africa* 76: 1 (2006).

² Guinea left the French franc zone in 1961, Mali in 1962.

³ On the transition to independence in French West Africa, see Chafer, Tony *The End of Empire in French West Africa: France’s Successful Decolonization?* (Oxford, 2002); and Yves Person, “French West Africa and Decolonization,” in *The Transfer of Power in Africa: Decolonization 1940-1960*, Prosser Gifford and William Roger Louis, eds. (New Haven, 1982). On Mali, see Gregory Mann, *From Empires*

Despite policy divergences, the socialist policies elaborated by Sékou Touré, Modibe Keïta, and Leopold Senghor shared key characteristics. For one, these men emphasized the role of the state in planning and coordinating national economies. They also believed socialism in Africa should be adapted to “African realities”--namely, the spiritual and moral values of pre-colonial African societies rather than the atheistic socialism pursued in China and the USSR. Similar to many of their counterparts elsewhere in the “Third World,” these leaders professed a faith in technology-driven development focused on communal agricultural production. From the start, the policies of Senegal, Guinea, and Mali emphasized the restoration of a glorified African past and the simultaneous modernization and rationalism of material, social, and race relations. All three countries emphasized agriculture as the “natural” vocation of Africans and core to moral development. These factors influenced policies established in the early independence years that radically transformed the access of citizens to natural resources: the nationalization of land, rural development programs focused on agriculture, and increased state control over production.

Land Tenure Reform

By 1964, Guinea, Mali, and Senegal had nationalized land and declared the subsoil the exclusive property of the state.⁴ Nationalization allowed states to re-appropriate property owned and managed by “colons” or private French companies under colonialism.⁵ By declaring land the property of the state, independence-era leaders hoped to equalize social relations in the

to *NGOS on the West African Sahel: The Road to Nongovernmentality* (Cambridge 2015); on Guinea, see Elizabeth Schmidt, *The Global Cold War and Decolonization in Guinea, 1946-1958* (Athens, 2007).

⁴ Sénégal: *Domaine National, la Loi et le Projet de Réforme* (Loi 64-46 du 17 juin 1964 relative au Domaine National); Guinée: Land Nationalisation Law of 20 Octobre 1959. The 1959 law was reiterated and strengthened by further laws passed in 1962, 1974, and 1983 (Decrets 025/PDF du 10 janvier 1962; 170/PRG du 5 avril 1962; 127/PRG du 25 avril 1974; 237/PRG du 2 mai 1983); Mali: citations here.

⁵ The appropriation of land from private interests by the state was less emphasized in Senegal, where many private property titles by French nationals were retained after independence.

countryside by making this land available to all citizens. In theory, regardless of their ethnic or social background, people could access land by “putting it to use” (*mise en valeur*).

Nationalization of land was also seen as a first step in the reformation of village-level land tenure laws that were unequal or “feudal,” a word in Mali and Guinea, in particular, to reference regions where relations of exploitation existed between hereditary nobility and a class of un-free people or ex-captives.⁶ In Senegal, some analysts have interpreted nationalization of land as an attempt to curb the control of the Mouride’s, a powerful Sufi Muslim brotherhood based in Senegal, over land allocation in peanut-producing regions.⁷ While these new land policies were designed to democratize access to productive resources, in practice, the ability to claim usufruct rights through *mise en valeur* was highly uneven and often favored elites.⁸

Rural Development

Keïta, Touré, and Senghor coupled nationalization of land with aggressive rural development policies aimed at remaking social relations in the countryside. Initially, food

⁶ While the French abolished slavery throughout AOF in the early 1900s, many ethnic groups (most notoriously the Fulbe and Maninka) maintained social hierarchies based on older distinctions among nobles, artisans and former slaves. On these legacies in the Sahelian zones of Mali, Guinea, and Senegal, see William Derman, *Serfs, Peasants, and Socialists* (Berkeley, 1973); Gregory Mann, *Native Sons: West African Veterans and France in the Twentieth Century* (Durham, 2006); and Richard Roberts, *Warriors, Merchants and Slaves: The State and the Economy in the Middle Niger Valley* (Stanford, 1987).

⁷ For Senghor and Dia rural inequality in particular was a consequence of alien bourgeois tenure arrangements imposed and propped up by colonial legal and political systems. On the uneven impacts of independence-era Senegal’s rural development programs, see Dennis Galvan, *The State Must Be Our Master of Fire: How Peasants Craft Culturally Sustainable Development in Senegal* (Berkeley, 2004); Catherine Boone, *Merchant Capital and the Roots of State Power in Senegal 1930-1985* (New York, 1992); Donald B. Cruise O’Brien, *The Mourides of Senegal: The Political and Economic Organization of an Islamic Brotherhood* (New York, 1971); Donald B. Cruise O’Brien, Momar-Coumba Diop, and Mamadou Diouf, eds. *La construction de l’État au Sénégal* (Paris, 2002).

⁸ *Mise en valeur* policies claimed to recognize the “customary” usufruct land rights exercised in villages, while eliminating unequal land policies of earlier eras. On the intended consequences of this policy on inter-ethnic tensions in Guinea, see Mike McGovern, *Unmasking the State: Making Guinea Modern* (Chicago, 2012), esp. 100-101. On tensions surrounding land tenure reforms in the heavily populated region of Siin Saloum in Senegal, see Dennis Galvan, *The State Must Be Our Master of Fire: How Peasants Craft Culturally Sustainable Development in Senegal* (Berkeley, 2004).

independence was an important goal. For reasons both practical and political, this was particularly the case in Guinea and Mali, now severed from French food aid and subsidies.

In Senegal, Senghor's Prime Minister, Mamadou Dia, was the primary architect of the country's rural development agenda (until his imprisonment by Senghor in 1962 on accusations that he was organizing a coup d'état). Aiming to increase the productivity of peasant agriculture, Dia established subsidies for fertilizer, seeds, and draft plows and created a program of rural technical and social assistance called "Animation Rurale."⁹ Touré and Keïta experimented with a number of communist-inspired collectivized farming schemes and some state and military-run farms.¹⁰ Touré's "Cultural Revolution" emphasized "collective" labor as a core value and in 1960 he launched a campaign to make participation in communal farming mandatory for Guinean youth.¹¹ Keïta also aimed to create a "socialist rural economy." To fight against the polarization of manual labor in the countryside and intellectual labor in the city, he called for all citizens to participate in agriculture and "return to the earth" ("*retour a la terre*").¹² Keïta attacked the supposed conservatism and feudal hierarchies of village life by creating "Action Rurale." Similar to Senegal's "Animation Rurale," field agents extended new agricultural techniques and socialist principles. Similar to Touré, Keïta aimed to embed political life in Mali

⁹ See Dennis Galvan, *The State Must Be Our Master of Fire*, chap. 4. Animators were generally young and were trained to instruct rural residents in "improved" farming techniques and about their rights and responsibilities as citizens in a society guided by (supposedly their) rural African principals. See also Interview, Bocar Sidibe, Kedougou, Mar. 25 2014. Sidibe was the first Animator assigned to Kédougou.

¹⁰ Touré drew on elements of Mao's Communist Revolution for his development programs. See James Fairhead and Melissa Leach, *Misreading the African Landscape: Society and Ecology in a Forest-Savanna Mosaic* (New York: Oxford University Press, 1996), 252-257.

¹¹ During the summer holidays from school, Touré sent youth to work in regions other than their own in an effort to encourage "cultural" exchange and to combat "racism" or political organization along ethnic and religion lines. On the organization of rural production in Guinea, and Touré's agricultural youth brigades, see Claude Riviere, *Guinea: The Mobilization of a People* (Ithaca, NY, 1977).

¹² see Gary-Tounkara 2003:49). Lecocq 2003:42; Cheick Oumar Diarrah, *Le Mali de Modibo Keïta* (Paris, 1986), 107.

within rural cooperatives that enforced communal labor on collective fields.¹³ Already by the late 1960s, however, most of these initiatives languished in poor returns and growing resistance in the countryside, particularly to collectivized (and often forced) farming. In Guinea, thousands of rural dwellers chose to evade the tightening surveillance of their productive activities by migrating to neighboring states--particularly Senegal and Sierra Leone.¹⁴

Commercial Policies

Increasing state control over markets and rural production was also central to independence-era ambitions to transform the rural social order and dismantle the colonial “*economie de traite*” based on buying cheap tropical commodities in exchange for expensive but poorly crafted European manufactures. Independence-era leaders considered control of markets crucial for encouraging state-managed industrialization and import-substitution programs. These policies also aimed to reduce the influence of private merchants (French, African, and Lebanese) by creating direct links between agriculturalists and state institutions. Keïta, Senghor, and Touré all created national enterprises of importation, commercialization, and agricultural companies that extended inputs and seeds to farmers purchased their crops at state-controlled prices. Modibo Keïta argued that these institutions edified socialism by accruing to the state profits formerly hoarded by private merchants.¹⁵ Keïta and Touré repressed private trade and decried traders as “parasites” that embodied the exploitative relations of colonial capitalism.¹⁶ Leopold Senghor and Mamadou Dia nationalized the peanut trade and created a state monopoly over the

¹³ Diarra, *Le Mali de Modibo Keïta*, 110.

¹⁴ CLAUDE RIVIERE

¹⁵ Laura Ann Twagira, “Robot Farmers” and Cosmopolitan Workers: Technological Masculinity and Agricultural Development in the French Sudan, 1945–68”, *Gender & History*, 26:3 (2014), 459–477.

¹⁶ Diarra, *Le Mali de Modibo Keïta*, 81; and Samir Amin, *Trois expériences africaines de développement: Le Mali, La Guinée et la Ghana* (Paris, 1965).

In 1961, Sékou Touré, Guinea's first president, declared all mining enterprises the property of the state.¹⁸ In Guinea, colonial-era French bauxite and diamond mines were replaced with state enterprises run in partnership with capital investments and technical assistance from the USSR, and later, the U.S. based Harvey Aluminum. Modibo Keïta's 1963 Mining Code also established a monopoly over mineral resources, outlawing private direct investment in Mali's subsoil, but leaving open the possibility for state cooperation with private foreign companies. In 1964, Senegal also putatively nationalized their phosphate mines, although the management (and, to an extent, ownership) remained in French hands.¹⁹ African states hoped to fund national development by strengthening control over the subsoil. Former states of the AOF were the least industrialized in Africa, a legacy of the federation's mercantilist economy. Keïta, Senghor, and Touré aimed to funnel rural production into industrial import-substitution programs in the capital—making matches, cigarettes, cotton clothing, canned tomatoes and meat, peanut oil, and even pharmaceuticals based on “national” agricultural, forest, and animal products.²⁰

Within this schema, African citizens would labor as farmers or on state-owned factories and mines. Neither an industrial worker nor a communalist agriculturalist, the mobile and cosmopolitan *orpailleur* had no place in this policy context. Sékou Touré and Modibo Keïta promulgated mining codes that outlawed *orpaillage*, deploying the military to close *diouras*. Keïta closed placer mines in 1963, a policy enforced “vigilance brigades” and rural paramilitary organizations created by the national government to “dissuade the departure of adventurers who

¹⁸ Journal Officiel de la République de Guinée, 15 Mars 1961, ‘Ordonnance 806 PRG du 6 mars 1961.

¹⁹ Journal Officiel de la République du Sénégal, 2 octobre 1961, Décret n 61-356, du 21 septembre 1961, fixant le régime de l'exploitation des carrières au Sénégal Décret n 61-357 du 21 septembre 1961, réglementation et codifiant le régime des substances minérales au Sénégal à l'exception des hydrocarbures liquides ou gazeux, 1418-1434.

²⁰ Import-substitution industries were far more aggressive in Mali and Guinea than in Senegal. On the retention of French interests in these programs in Senegal, see Boone, *Merchant Capital*.

put their interests before those of the state.”²¹ Sékou Touré dispatched the Guinean military to close the gold mines of Siguiri.²² Compared to Mali and Guinea, the “traditional” gold mining population was far smaller in Senegal and largely isolated to the *cercle* of Kedougou. This might explain why Leopold Senghor did not actively criminalize *orpaillage*. At the same time, the mining codes ratified under his presidency neither mentioned nor protected the practice.

Artisanal mining also worked against the communitarian ethic of African socialism because it was focused on individual accumulation.²³ Sékou Touré decried *orpaillage* as a mode of capitalistic “parasitism. More broadly, seasonal migration to the goldfields posed an obstacle to controlling rural mobility and curbing the rapid expansion of urban populations.²⁴ Finally, there was concern that *orpaillage* encouraged the abandonment of agriculture, which was a national development priority. If *orpaillage* posed an ideological challenge to African socialism and its ideals of communitarianism and place-based agrarianism, it also posed practical obstacles for state control over the movement of its citizens and markets. As an activity that operated outside of “official” channels of commerce, it flaunted independence-era ambitions to control and plan for the agrarian economy. The fact that colonial-era centres of *orpaillage* was concentrated in the borderlands of Mali, Guinea, and Senegal—at a moment when these independent states were heavily policing their borders—increased concerns over its regulation.

²¹ Daouda Gary-Toukara, *Migrants Soudanais/ maliens et conscience ivoirienne: les étrangers en Cote d’Ivoire, 1903-1980*, (Paris, 2003), 55.

²² Fieldnotes, Siguiri, Guinea, Jun-August, 2010.

²³ Julius Nyerere’s, independent Tanzania’s first president, purportedly argued that it was best for Tanzania to leave its minerals in the ground until they developed national expertise to exploit them. See *Mineralizing Africa* (introduction).

²⁴ In this vein, Keita attacked what he termed “rural migrancy” (*nomadisme rural*), grouping both seasonal pastoralism and migration to the *diouras* in this framework (Diarrah, 73). Touré and Keita also saw *orpaillage* as a domain in which usury and extraction by merchants—African *dioula* as well as French and Lebanese traders—prevailed. As detailed in Chapter 2, the colonial state largely left these private merchants to control sold sales and to provision indigenous mines with the imported rice, sugar, and other basic staples that supported such large “non-agricultural” migrant populations. For Sekou Touré, in particular, curbing *orpaillage* was seen as part of larger state-led effort to reduce the power of African traders or “parasites” over economic life in the countryside (see n. 15).

There is little evidence in the secondary literature and in the scant government records available for the early independence-era of resistance among multi-generational gold miners to the criminalization of their access to the subsoil. A couple factors could explain this absence. Gold prices were at an all-time low in the 1950s and 1960s, while demand was rising for bauxite, phosphates, uranium, and fuels—resources not historically mined by rural West Africans. As in earlier time periods, inhabitants of auriferous zones adapted their subsistence strategies to global market conditions, concentrating on more lucrative opportunities in state-subsidized agriculture. In Modibo Keïta’s Mali, inhabitants of Bambuk simply migrated to Kedougou during the dry season to mine.²⁵ The presence of the state was thin on the ground in Kedougou. In contrast to western Mali, where gold mining competed with cotton production, Kedougou was not a major producer of export crops. The Senegalese state rarely bothered to police the region’s *diouras*. These factors help explain why rights to gold—a crucial item on the agenda of West African politicians after World War II—did *not* animate rural protest in the 1960s and 1970s.

Resource Sovereignty, the Bandung Conference, and the United Nations

African socialism—as both a diverse suite of ideologies and concrete state policies—was inspired by trans-Atlantic and trans-Pacific conversations about Pan-Africanism, *négritude*, and decolonization. These dialogues, which began between the wars, intensified at the Bandung Conference of 1955, where representatives from 29 Asian and African nations (then still colonies) gathered in Indonesia to discuss economic development and decolonization in the “Third World.” Resolutions made at Bandung outlined principles of self-determination, mutual respect for sovereignty, and equality. Natural resources were also on the agenda. For colonies in

²⁵ Moussa Cissokho, Tomboroncoto, Mar. 10, 2014; Archives de la Direction des Mines et de la Géologie du Sénégal, Baud, ‘Rapport sur l’Activité Minière dans le Bassin de la Falémé en 1944’, Dakar, Aug. 1944.

the process of decolonization, Bandung solidified principles of what became known as “resource sovereignty.” This was the right of states to use their natural endowments for reasons of public utility, security, and national interest—rather than individual or private interests, whether domestic or foreign.²⁶ The principle of resource sovereignty was carried forward in the creation of the nonaligned movement during the Cold War, and was recognized by the United Nations General Assembly resolutions of 1960 and 1962.²⁷

The international recognition of the sovereignty of the “Third World” over their natural resources coincided with growing international demand for bauxite, copper, phosphates, and iron to furnish the postwar consumer boom. Africa was an emergent market for these minerals, particularly for the United States and Canada, which did not have colonies on the continent. During the 1950s and 1960s, the United Nations (UN) extended considerable assistance for mineral mapping and prospecting to newly independent states in Africa (Chapter 4). In fact, natural resource development comprised the bulk of UN assistance to Africa.²⁸ The primary objective of the UN “Revolving Fund for Natural Resource Exploration,” created in the 1960s, was to assume the risks involved in conducting geological reconnaissance in order to locate future mines. The motivation behind this fund was to assist countries that had not benefited from

²⁶ The final communication of the Bandung conference invoked the “vital need of stabilizing commodity trade” and emphasized “respect for the sovereignty and territorial integrity of all nations.” Nico Schrijver, *Sovereignty over Natural Resources: Balancing Rights and Duties* (Cambridge, 1997).

²⁷ The United Nations General Assembly Resolution 1515 (XV) of 15 December 1960 and 1803 (XVII) of 14 December 1962.

²⁸ Mineral resources development has become a major element of the Special Fund program of 1959. Of 194 UNDP projects entrusted for execution to the United Nations since 1959, 92 were mineral resources development projects (or roughly 40% of the total). “Annex: International Co-Operation in Mineral Development,” 66-74, esp. 69, in United Nations Department of Economic and Social Affairs, *Mineral Resources Development with Particular Reference to the Developing Countries* (New York, 1970).

intensive geological research or industrial mining in the past—namely former colonies.²⁹ At the same time, these initiatives contributed to mapping global mineral reserves.

The UN also encouraged newly independent states to adopt “modern” mineral regimes that secured state sovereignty over the subsoil. In the 1960s and 1970s, ascribing to a theory of “trickle-down” economics, the UN advised African states to pursue large-scale mining and agricultural projects.³⁰ Considering this, it is surprising that the first mineral codes ratified by independent African states had no provisions for the “artisanal” or “customary” mining rights of its citizens. Rather, these codes created a legal framework for capital-intensive mining operations in which the government was the sole manager or a joint venture partner with private industries.

Thus, the UN contributed to marginalizing the rights of African citizens to the subsoil at independence. Yet already in the 1970s, certain UN experts began to question whether large-scale miners truly benefited African economies, recognizing that the benefits of mining in Africa appeared to accrue to transnational corporations, based largely in the northern hemisphere. In this context, the UN organized a series of international conferences focused on the benefits of small-scale mining in the 1970s. Within the decade, the World Bank hosted regional conferences on the same topic.³¹ These meetings took part in a growing interest in small-scale “appropriate” technology in the global South in the face of mounting evidence that many large-scale projects—ranging from dams to major agricultural schemes—failed to produce desired “development”

²⁹ The Fund was officially established by a resolution of the General Assembly, passed in December of 1973 after several years of deliberations. The fund was designed to sponsor mineral exploration in places where private capital was not willing to make investment risks—at mid-century, this was namely in Africa. Prior to the establishment of “The Fund,” most large-scale mineral exploration was carried out by the United Nations Development Programme (UNDP) and the Department of Economic and Social Affairs of the United Nations. Most of these initiatives did not include prospecting for petroleum, natural gas, and groundwater. On the evolving fund, see John S. Carman, “Chapter 68, The Revolving Fund for Natural Resources Exploration: Truths and Misconceptions,” 429-433, esp. 429.

³⁰ The United Nations, *Mineral Resources Development*.

³¹ For example, the International Conference on the Future of Small-Scale Mining held in Jurica, Mexico in 1978 and a regional workshop held in Kenya in 1980. Gavin Hilson, personal communication, 2015.

goals. Geologists and mining engineers from around the globe participated in these events. Publications issued from these meetings included case studies from the United States, Canada, and Europe, but the overwhelming focus was the “developing” or “underdeveloped” world—that is, former colonies. From these conference reports, an increasingly uniform definition of “artisanal” mining began to emerge. In 1972, the Department of Economic and Social Affairs of the UN published a landmark survey on *Small-Scale Mining in the Developing Countries*.³² The report defined “artisanal mining” as involving the “the application of human energy directly (as with a pick) on a one-to-one ratio to the physical production of minerals without multiplying that energy using mechanical means (jackhammer).”³³ Evoking the language of technical evolutionism, these reports frame artisanal mining as a “primitive” and “archaic” form of extraction once practiced throughout the world, but now limited to developing countries.³⁴

International conferences on the “future of small-scale” mining clearly outlined the nefarious aspects of artisanal mining: difficult to regulate; artisanal miners risked “fracturing” ore bodies more “efficiently” extracted by capital-intensive means; and the activity was labor intensive, dangerous, and “brutalizing.” Yet, economists and earth scientists conceded that small-scale mining generated more employment than larger mines, cultivated a “cadre of local expertise,” and could be oriented toward import-substitution industries. There were also social advantages to the “local” of artisanal mining: for one, it discouraged young people from

³² Frank H. Skelding, then employed for the AMDEC Corporation, was the primary author. The report’s goal was to provide developing countries with small-scale mining policy recommendations. United Nations, *Small-Scale Mining in the Developing Countries* (New York, 1972).

³³ Ibid, 21. Small-scale mining was defined as the “application of modern concepts, techniques, and technology to the production of minerals on a limited scale of output

³⁴ In other words, artisanal mining is seen as a vestige of a pre-industrial past or as an undesirable stepping-stone on an evolutionary pathway to “modern” industry. The caption accompanying a photo of gold panning in Ethiopia in the 1972 report typifies this view: “Although this picture was taken in Ethiopia not long ago, it could have been almost anywhere in the world and at any time over a span of centuries.” United Nations, *Small-Scale Mining in Developing Countries*, 48.

migrating to post-colonial urban “shanty dwellings with their attendant high crime rate, malnutrition, and a preponderance of communicable diseases.”³⁵ These conferences called for extending technical assistance for artisanal miners and a revision of mining codes to include provisions for smaller-scale operations. However, these conversations evolved in relative isolation from the larger policy orientation of the day: large-scale, capital-intensive mines.

One practice carried over from colonialism into the 1960s and 1970s was the continued reliance of state geologists--now increasingly African nationals--on the knowledge, skilled labor, and gold discoveries of *orpailleur*. United Nations reports of the 1970s stressed the value of small mines for national geological mapping. An article to emerge from the 1978 Mexico conference encouraged public (national) geological agencies to take the lead in a “systematic exploration strategy that makes full use of that peripatetic renewable resource, the individual prospector.”³⁶ As noted in a 1970 UN report on mineral resources in the “development world”:

That many developing countries have a substantial number of potential prospectors among herdsmen and nomadic tribes, who cover a great deal of ground in short periods of time. The offer of suitable rewards may encourage them to report unusual rock occurrences and bring in samples.”³⁷

In another 1972 UN Report, a geologist by the name of Frank Skelding recommends that developing countries formalize relationships with local miners by offering “free, possibly even subsidized, short courses in prospecting techniques” to train “nomadic herdsmen and other

³⁵ A.R. Berger, “The Importance of Small-Scale Mining: A General Review,” in *Strategies for small-scale mining and mineral industries: report of a regional workshop held at Mombasa, Kenya, April 14-25, 1980*, ed. James M. Neilson (Association of Geoscientists for International Development, 1982), 1-12.

³⁶ Allen L. Clark and Jennifer L. Cook, “Chapter 7: Small Mines as a Precursor for Mineral Resource Development,” in *Strategies for small-scale mining and mineral industries: report of a regional workshop held at Mombasa, Kenya, April 14-25, 1980*, ed. James M. Neilson (Association of Geoscientists for International Development, 1982), 41-7. Another article, published in the same volume, noted that “prudent” small-scale miners often discover what become large-scale mines in developing countries and “perform a ‘preliminary feasibility study’” of mineral resources, “even if he has never heard of the word.” Jeffrey C. Wynn, “Chapter 12, Exploration Geophysical Methods and Strategies, and their use to locate and assess small mineral deposits,” *Ibid*, 75-82.

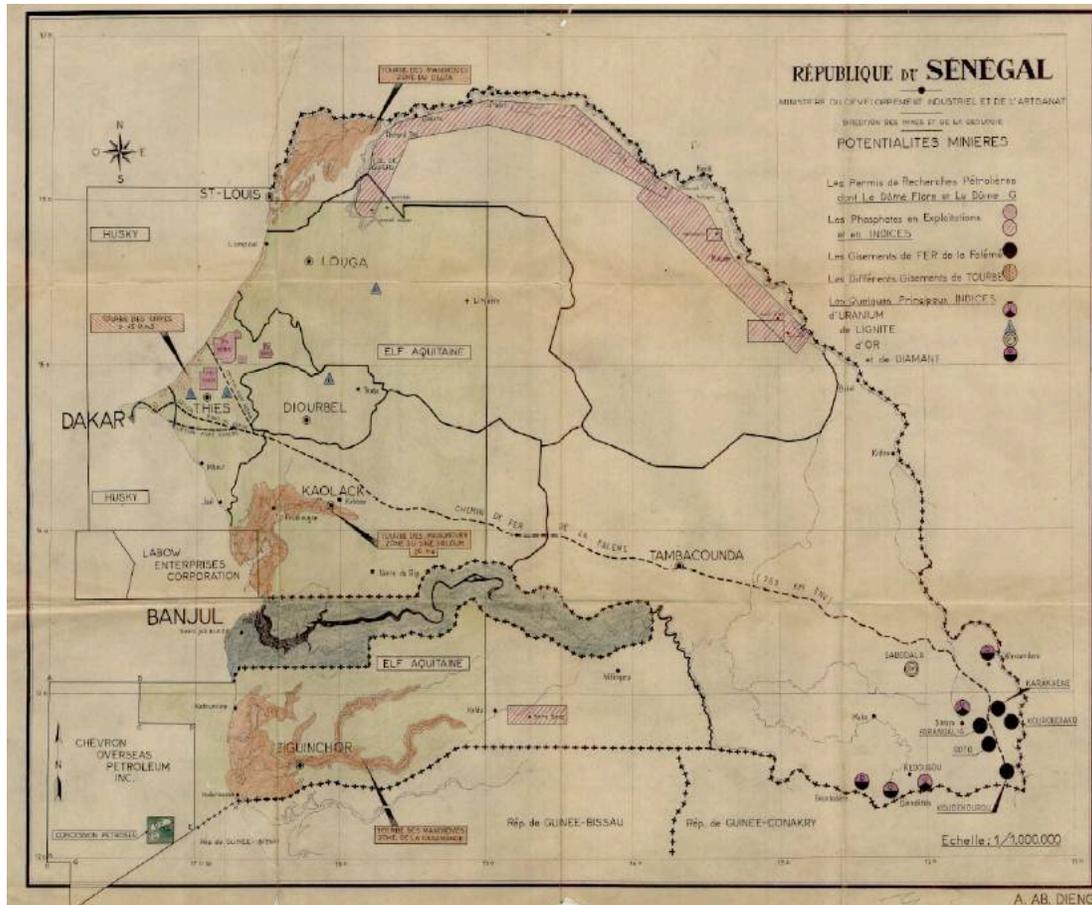
³⁷ United Nations Department of Economic and Social Affairs, *Mineral Resources Development with Particular Reference to the Developing Countries* (New York, 1970), 2.

peripatetic persons” to look for unusual rocks and outcrops.³⁸ Chapter 4 examines how Senegal, in the context of the global Cold War, brokered cooperative partnerships with the United Nations, France, and the USSR to conduct mineral mapping. These missions focused on cataloguing gold and other hard metal deposits in the remote region of Senegal Oriental that could be exploited on an industrial scale. Like their colonial counterparts, the technicians who staffed these missions drew on the knowledge and labor of local miners.

³⁸ Skelding continues: “One of the most valuable aspects of small-scale mining is that, if allowed to flourish, it can often make a significant contribution to the nation’s mineral reserves in terms of new discoveries.” United Nations, *Small-Scale Mining in the Developing Countries* (New York, 1972), 80-5.

CHAPTER 4

Earth's Archive: Decolonization and Mineral Mapping in Senegal



(Figure 19: “Senegal’s Mineral Potential,” State Planning Document, circa 1965, Courtesy of the Direction des Mines et de la Géologie, Senegal)

Introduction

When “the Russians” arrived in the village of Momokhono in 1971, they requested by name the compound of Dembélé Danfakha. Momokhono is a village of several thousand, located roughly a dozen miles from the border of Mali in southeastern Senegal. In the 1970s, its

population hovered at several hundred, but it had already hosted four international mineral research missions. These were products of cooperative research protocols signed between independent Senegal and the United Nations Organization (UNO), France, and the U.S.S.R.

Danfakha first earned his reputation as an expert “bush guide” for geologists and mining engineers while working with a French geologist in 1959 who was mapping southeastern Senegal’s gold deposits. A group of Swiss and Senegalese geologists—funded by the UNO to map the region’s gold, diamond, and copper deposits—later recruited Danfakha. The personnel of this mineral mission mentioned Danfakha’s name when crossing paths with Soviet scientists in Dakar, who were recruited by the Senegalese state to conduct gold reconnaissance based on the promising indexes identified by the French and the UNO missions. In Danfakha’s memory, a stream of all-terrain vehicles filled with scientists marked Senegal’s independence from France. This was “the time of electricity in Momokhono.” At night, geologists powered floodlights with diesel generators to sort soil samples while children danced in the hazy glow of artificial light.

I first learned of Danfakha’s days as a bush guide as we took cover from the piercing afternoon heat under a thatched awning. We conversed in French and Maninkakan, the *lingua franca* of southeastern Senegal. Danfakha did not attend school, nor did most men of his age in Momokhono. Yet he spoke French comfortably, a legacy of collaborating for decades with geologists from France, Switzerland, and Russia. Danfakha’s grandson, Aruna, accompanied us in the shade, preparing a round of tea to follow our mid-day meal. Aruna is no more than twenty and finished high school a year ago. Aruna has returned to Momokhono to take up a livelihood as an *orpailleur*. Today, Momokhono sits within the exploration permit of a Canadian mining company, Teranga Gold. Teranga operates Senegal’s only industrial open-pit gold mine and mill.

Several months ago, Danfakha participated as a “village elder” in a meeting with Teranga, when the company announced their plans to exploit a deposit found within the Momokhono permit, expanding the production of the mill. The new mine was still in the planning stages. If opened, it could mean more local employment, the eventual removal of the village—or both.

Today, roughly half of Momokhono’s working-age population is employed as laborers, chauffeurs, or drivers at Teranga’s operational mine, known as “Sabodal,” the name both of a village and the major gold deposit exploited by Teranga. The remaining half of the village toils illegally as *orpailleurs* on goldfields situated within Teranga’s permit. Now in his 80s, Danfakha was Aruna’s age when Senegal gained independence from France in 1960. He remembers newly appointed Senegalese administrators visiting Momokhono and imploring village elders to facilitate the work of *toubabs* (Europeans) who would prospect for gold in the region at the invitation of president Léopold Sedar Senghor. Danfakha recalls promises that these *toubabs*, would help transform the region into an engine of industrial development for the new nation. In the event, it was not until the late 1990s that an “industrial” gold mine was opened in Senegal. But it was during the early decades of independence that the state transformed it’s most geologically and culturally anomalous region--Senegal Oriental--into a mineral reserve. In the context of the global Cold War, Senegalese officials brokered strategic international partnerships to acquire knowledge of national mineral endowments. Scientists from around the world staffed the “mineral missions” of the 1960s and 1970s. They trained the first generation of Senegalese geologists and gold prospectors as well as mapmakers, technicians, and machine operators. These transnational teams of scientists also relied heavily on the labor and expertise of Danfakha and his peers, who, from their fathers and grandfathers, had learned methods of locating “indexes” of gold. They also knew how to dig specialized pits to reach auriferous rock below. In

the early decades of independence, French, Soviet, Swiss, Belgian, and American geologists collaborated with these multi-generational “artisanal” miners to identify the rocks and soils that would become the raw materials for Senegal’s ambitions for national development.

This chapter takes up a single decade of Dembélé Danfakha’s working life—the long 1960s—as an opening into a poorly understood chapter of West Africa’s post-colonial history. How, I ask, did newly independent states navigate the perils and opportunities of international aid in the context of the global Cold War to generate knowledge about mineral and other natural resources? And in the course of this research, how did African states and expatriate “technical assistants” learn from and appropriate the natural knowledge of their citizens?

Studies of cooperative assistance in Africa in the era of decolonization focus almost exclusively on high-level diplomacy, cultural exchanges, and the political history of the “Franco-African family.”¹ Yet historians have only begun to explore the centrality of science and medicine in cooperative research at independence. Guillaume Lachenal and Neomi Toussignant, historians of medicine, have examined the intimate social relations of French *coopération* in the laboratories of post-colonial capitals.² These and other studies tend to hold stable the categories of “African” and “expatriate” (often European) as the most salient racial divisions in post-colonial scientific practice. This might well be the case in laboratories based in Dakar and Yaoundé, which were cosmopolitan, multi-ethnic and deeply enrolled in the urban projects of

¹ Tony Chafer, “Chirac and ‘la Françafrique’: No Longer a Family Affair,” *Modern and Contemporary France* 13:1 (2005), 7-23; Jean Pierre Dozon, *Frères et Sujets. La France et l’Afrique en perspective* (Paris, 2003); Charles-Robert Ageron et Michel Marc, eds., *L’Afrique noire française: L’heure des indépendances* (2015); Assane Seck, *Sénégal. Émergence d’une démocratie moderne (1945-2005): Un itinéraire politique*, (Paris, 2005).

² Guillaume Lachenal, “The intimate rules of the French “Coopération”: Morality, race and the post-colonial division of scientific work at the Pasteur Institute of Cameroon”, in Wenzel Geissler & Sassy Molyneux (eds), *Evidence, Ethos and Experiment: The Anthropology and History of Medical Research in Africa*, Berghahn, Oxford, (2011), 373-402; Neomi Toussignant, “Broken Tempos: Of Means and Memory in a Senegalese University Laboratory,” *Social Studies of Science* (2013); Gabrielle Hecht, *Entangled Geographies: Empire and Technopolitics in the Global Cold War* (Cambridge, MA, 2011).

crafting national political constituencies at independence. A markedly different story emerges by moving out of the laboratory and into “the field” to examine the routines and hierarchies mineral exploration in the physical and cultural borderlands of the Senegalese state in the 1960s.

First, I argue that the history of state mineral mapping—a fascinating and largely underexplored topic in its own right—is a crucial component of the “technopolitical” system that made possible the transformation of this region into a global mineral frontier in the 1990s. There is no doubt that the current mineral boom emerged from the fertile conjunction of rising hard metal prices and the pro-market investment climate encouraged by the structural adjustment reforms imposed on African governments by the World Bank and the IMF in the 1980s – 2000s.³ But this narrative fails to account for the crucial role of knowledge—the labor of mapping structural geology—in the transformation of fluids and rocks into commodities and markets.⁴

Throughout sub-Saharan Africa, newly independent states recruited transnational experts to assist in large-scale mineral mapping projects. These initiatives were crucial for countries that did not inherit a robust colonial geological service, such as the former colonies of France and Portugal.⁵ Many of the gold deposits currently exploited in Senegal, Mali and Guinea by private

³ For an overview, see James Ferguson, *Global Shadows: Africa and the Neoliberal World Order* (Durham, 2006); see also Ferguson, “Seeing Like an Oil Company: Space, Security, and Global Capital in Neoliberal Africa,” *American Anthropologist* 107:3 (2005), 377-82. For a discussion of Senegal’s gold boom as an articulation of “neoliberal” economic conditions in West Africa, see Mouhamadou Lamine Diallo, “Mine d’or et développement durable: Quelques réflexions sur le site de Sabodala (Sénégal oriental),” *EchoGeo* 8 (2009), Fatimata Bineta Mbodj, “Boom aurifère a l’est du Sénégal, l’ouest du Mali et au nord-est de la Guinée: mutations socio-économiques et spatiales d’anciennes marges géographiques et économiques,” (Thèse de doctorat de géographie, Université Gaston Berger, St. Louis, Sénégal (2011); Martin Williams, “The Gold Standard of Governance: Mining, Decentralization, and State Power in Africa,” *Politique Africaine* 17 (2010), 127-148.

⁴ Hecht, *Entangled Geographies*; Timothy Mitchell, *Carbon Democracy: Political Power in the Age of oil* (New York, 2011). Hannah Appel, “Offshore Work: Oil, Modularity, and the How of Capitalism in Equatorial Guinea,” *American Ethnologist* 39:4 (2011).

⁵ See Chapter 3, but also see Pierre Legoux and Andre Marelle, ed., *Les mines et la recherche minière en Afrique Occidentale Française* (Paris, 1992).

companies were first “discovered” or “valorized” during the 1960s and 1970s. Several reasons account for why these gold deposits were not exploited for decades after their initial discovery. Auriferous zones in all three nations were isolated, located far from ports and rails located on the Guinean and Senegalese coast and in the cotton-producing regions of Mali. Moreover, for much of the 1950s-1980s, gold prices were historically low. During this period, West African countries pursued far more lucrative industrial mining ventures in bauxite, phosphates, uranium, and construction materials. In this context, many mineral-mapping projects of gold conducted during the early decades of independence became archived “shelf projects” or “reserves.”⁶

In the 1980s and 1990s, geologists and administrators returned to this archive of the earth’s subsoil, created by the colonial state and during the early decades of independence. In the intervening decades, many techniques used by geochemists and structural geologists of the 1960s were outdated. But reports from mineral missions still contained valuable baseline data about the region’s industrial gold, iron, and copper potential. These reports served as initial guides for geologists from Senegal and elsewhere who worked for venture capitalists who, in the 1980s and 1990s, began to expand investments in Africa’s mineral, fuel, timber, and marine sectors.

It is also telling that one of the first projects to accompany the pro-market reforms made to Senegal’s mineral code in 2003 was a large-scale digitization project.⁷ Funded by the European Union, and staffed largely by ex-colonial (then retired) French geologists, the project aimed to “update” and market independence-era mineral maps to private mining investors. One branch of the project included digitizing the pre-existing maps and geological reports held in the archives of Senegal’s Direction des Mines et de la Géologie. The second component involved

⁶ On “reserve,” see Andrea Westermann, “Geology and World Politics: Mineral Resource Appraisals as Tools of Geopolitical Calculation, 1919-1939,” *Historical Social Research* 40 (2015) 2, 151-173.

⁷ In Senegal, the largest digitizing project was PASMI, funded by the European Union. The World Bank and the IFC funded similar projects in neighboring African States.

aerial radiometric mapping of baseline mineralization activities across large territories—a technology not available to geologists in the 1960s and 1970s. The point here is that Africa’s so-called “neoliberal” mineral boom was founded on the backs of basic geological and intensive mineral prospecting conducted during earlier decades. By attending to this history of state knowledge acquisition at independence, this chapter begins to document the technopolitical legacies of decades of mineral exploration on West Africa’s current gold boom.⁸

This chapter also argues that independence-era mineral mapping profoundly shaped national expertise as well as more localized perceptions of the politics of mineral exploration.⁹ I examine these legacies on two levels. First, I document how the Senegalese state drew on the labor and expertise of diverse citizens—elites and illiterates as well as local residents and technicians recruited in Dakar—to identify the mineral resources of Senegal Oriental. Senegalese geologists learned from the skilled labor of expert “artisanal” miners in Senegal Oriental. Mineral missions also materialized fraught labor hierarchies characteristic of late colonialism that positioned coastal Senegalese, particularly ethnic Wolof, in positions of social and political authority over minorities from “the interior.” Mineral missions reinforced these divisions by recruiting Senegalese “technicians” in Dakar who were then charged with recruiting and disciplining villagers in Senegal Oriental who were classified as unskilled laborers.

⁸ Andrew Apter, *The Pan-African Nation: Oil and the Spectacle of Culture in Nigeria* (Chicago, 2005); Fernando Coronil, *The Magical State: Nature, Money, and Modernity in Venezuela* (Chicago, 1997); Michael Watts and Ed. Kashi, *Curse of the Black Gold: 50 Years of Oil in the Niger Delta* (Brooklyn, 2008). For apt overviews of the new scramble literature, see Padraig Carmody, *The New Scramble for Africa* (Cambridge, 2011); Roger Southall and Henning Melber (eds.), *A New Scramble for Africa? Imperialism, Investment, and Development* (Kwa-Zulu Natal, 2009).

⁹ A rich literature documents the effects of medical research on subject formation and political action, but far attention has been paid to subject formation through research on “nature.” On the former, see Adriana Petryna, *Life Exposed: Biological Citizens After Chernobyl* (Princeton, 2013); Steven Epstein, *Impure Science: Aids, Activism, and the Politics of Knowledge* (Berkeley, 1996). On post-colonial subject formation and plant research see Abena Dove Osseo-Asare, *Bitter Roots: The Search for Healing Plants in Africa* (Chicago, 2014); Cori Hayden, *When Nature Goes Public: The Making and Unmaking of Bioprospecting in Mexico* (Princeton, 2003).

While local laborers were classified as “unskilled,” oral histories and the archives of these projects attest to the importance of local expertise to the mineral “discoveries” made by these missions. Dembélé Danfakha’s work collaborations exemplify this. A French geologist taught him to read the flowering of granite as evidence of an ancient rock fissure. From a Soviet scientist, he learned to sort rock from sand by a diesel-powered machine. A Senegalese technician, working for the UN mission, instructed Danfakha how to map soil samples on a grid. But Danfakha’s knowledge was also a resource for these scientists. Danfakha led them to ancient desiccated streams where he and his father dug pits ranging from three to fifteen meters in depth to reach the *nada* (auriferous bedrock) below. Danfakha also taught these scientists to scan particular trees, root formations, and termite mounds as “indexes” for proximate gold deposits.

But the benefits of this fluid exchange of knowledge, techniques, and labor were uneven. Mineral missions launched the international careers of many expatriate geologists, and the prominent national careers of the Senegalese scientists first trained by them. However, with few exceptions, locally recruited laborers acquired minimal professional mobility from these encounters. More recently, some of the local men who worked for independence-era mineral missions reinterpreted their encounters with expatriate geologists as a “theft of consciousness.”¹⁰ Danfakha and many of his peers now lament the ease with which they shared the location of regional gold deposits. Today, the local population is legally excluded from extracting gold from several deposits to which Danfakha once guided Swiss, French, Soviet, Senegalese, and Australian geologists. Since the early 2000s, multinational corporations hold permits giving them the explore right to explore and extract these deposits. This recent history of exclusive property claims and marginalization of local rights to minerals has led many men to reinterpret their historic collaborations with expatriate scientists—once a source of pride—as exploitative.

¹⁰ Interview, Danfakha, Saraya, May 2014; Tigana, Beledougou, May 2014.

Finally, this chapter contributes to recent studies of how decolonization and the global Cold War shaped the formation of technological and scientific expertise in post-colonial Africa.¹¹ I join Gabrielle Hecht and Clapperton Mavunga in pushing analyses of the global Cold War in Africa beyond a traditional focus on ideological battles and high-level diplomacy to specify how newly independent African states acquired technological expertise.¹² Senegal initially presents as a rather mundane country to study Cold War techno-politics in Africa.¹³ While neighboring Guinea and Mali pursued radical political platforms and welcomed technicians from the USSR into their universities and newly nationalized industries, Senegal strengthened its ties to French cooperation and Charles de Gaulle's Cold War policies and allies. Guinea's Sekou Toure and Mali's Modibo Keita accused Senghor of neo-colonialism and a stifling reliance on post-imperial networks. Scholars have often echoed these sentiments.

But a more complicated picture emerges when we move beyond the corridors of high-level diplomacy in Dakar. While Senghor remained cautious of Soviet involvement in Africa—and frequently accused the Eastern Bloc of attempting to “recolonize” the continent—he also mobilized Soviet technical aid to meet Senegal's needs for specialized technological expertise. Senghor strengthened the scientific capacity of independent Senegal by brokering multi-national

¹¹ Elizabeth Schmidt, *The Global Cold War and Decolonization in Guinea, 1946-1958* (Athens, 2007); Anne Pitcher and Kelly M. Askew, “African Socialisms and Postsocialisms,” *Africa* 76 (1) (2006); Jay Straker, *Youth, Nationalism, and the Guinean Revolution* (Bloomington, 2009); Mike McGovern, *Unmasking the State: Making Guinea Modern* (Chicago, 2013); Clapperton Mavhunga, “A plundering tiger with its deadly cubs? The USSR and China as weapons in the engineering of a Zimbabwean Nation, 1945-2009,” In *Entangled Geographies*, Gabrielle Hecht, ed. (2011); Andrew Ivaska, *Cultured States: Youth, Gender, and Modern Style in 1960s Dar es Salaam* (Durham, 2011).

¹² Hecht, *Entangled Geographies*, 6; Odd Orne Westad, *The global Cold War: third world interventions and the making of our times* (Cambridge, 2005). See also Gregory Mann, *From Empires to NGOs on the West African Sahel: The Road to Nongovernmentality* (Cambridge 2015).

¹³ Beyond the rare article or monographs published by political scientists in the 1960s and 1970s, Africa's historians have not taken up the fascinating legacy of Soviet technical expertise in Africa. By contrast, excellent studies exist on Cold War era cultural exchanges in Africa. Kelly Askew, *Performing the Nation: Swahili Music and Cultural Politics in Tanzania* (Chicago, 2002); Ivaska, *Cultured States*; McGovern, *Unmasking the State*.

protocols with agencies such as the United Nations Organization, whose geology missions were heavily staffed by scientists from the Eastern Bloc. From the perspective of Cold War technical missions, Senegal was no exception to the rule that African decolonization unfolded as a transnational—and not just a post-imperial—story.¹⁴ Nowhere is this legacy more visible than in the active efforts of the post-colonial state to acquire knowledge of its mineral resources and to forge national experts in the earth sciences through technical agreements with France, the USSR, and the UN. The impacts of these mineral missions also extended far beyond the temporal boundaries of the Cold War by shaping the careers of Senegal’s first generation of geologists.¹⁵

Decolonization and Development in Senegal Oriental

In June 1960, through a power transfer agreement, Senegal gained its sovereignty from France. Shortly thereafter, Léopold Sédar Senghor became the country’s first president.¹⁶ Senegal retained close fiscal, military, and political ties to France. But Senghor also exercised sovereignty in key diplomatic relations, renegotiated relationships with French technical advisors, and unraveled a series of developmental and research efforts that made a deliberate attempt to break with colonial territorial logics.¹⁷ A key component of independent Senegal’s new developmental strategy was to “re-territorialize” Senegal’s rural economy: to redress the

¹⁴ Jean Allman, “Between the Present and History: African Nationalism and Decolonization,” In John Parker and Richard Reid, eds, *Oxford Handbook on Modern African History* (Oxford, 2013); Tony Chafer, *The End of Empire in French West Africa: France’s Successful Decolonization* (Oxford, 2002).

¹⁵ Hecht, *Entangled Geographies*, 10-11.

¹⁶ For less than a year in 1959, Senegal was part of the independent Mali Federation with the French Sudan. The federation broke up on August 20, 1960, at which time both Senegal and the French Sudan (renamed Mali) proclaimed independence. After independence, Senegal allowed the French army to remain on its territory and it retained the French CFA as currency. Mali and Guinea, by contrast, pushed French military from their soil and created their own currency, at least for a time.

¹⁷ Mamadou Diouf, “Senegalese Development: From Mass Mobilization to Technocratic Elitism,” In *International Development and the Social Sciences*, Frederick Cooper and Randall Packard (eds.), Berkeley: University of California Press (1997), 291-319.

uneven infrastructural development of the French colonial economy, which pivoted around the evacuation of peanuts from Senegal's central-west basin to markets in France.¹⁸ Colonial infrastructure ignored large regions of Senegal, including the entire eastern region of the country and the Senegal River Valley. The architect's of Senegal's development plans attempted to redraw this cartography by identifying natural "zones" or "development poles" in peripheral zones around which the productive activities of rural dwellers could be re-oriented.¹⁹



(Figure 20: Geomorphological Map of Tinkoto, United Nations Organization, Senegal Oriental Mission, 1961, Courtesy of the Direction des Mines et de la Géologie, Senegal)

¹⁸ Mamadou Dia and Father Louis-Joseph Lebret were the key architects of this strategy. Mamadou Dia served as Senghor's Prime Minister from 1957 to 1962. He was forced to resign and then imprisoned in Kedougou for a decade amidst allegations that he was planning a military coup. Lebret was a Dominican Priest who represented the Vatican in Senegal and greatly influenced Senegal's developmental planning.

¹⁹ Mamadou Dia, *Memoirs d'un militant du Tiers Monde: Si memoire ne ment* (Paris, 1985); and Catherine Coquery-Vidrovitch, "The Transfer of economic power in French-speaking Africa: from "colonial exclusivity" to "North-South" relations," in P. Gifford and W.R. Louis (eds.), 105-34.

This section briefly reviews how leaders of newly independent Senegal re-imagined the developmental future of the vast and remote region of Senegal Oriental, which occupied over 20,000 kilometers in the country's southeastern corner. At independence, it was estimated that 45,000 people inhabited Kedougou, classified as a department of the region of Tambacounda—the name of the crossroads city located 250 kilometers to the north.²⁰ The French state had marginalized this sparsely populated zone, administering it as *Afrique inutile* (useless Africa) and treating it as a seasonal labor reserve for the country's peanut farms.²¹ Wedged between the headwaters of the Gambia and the Faleme Rivers, the French saw little value in investing in the roads and bridges requisite to link Senegal Oriental to the rail and road system of coastal markets. Kedougou was a multi-day 600-kilometer journey to Dakar by washed-out dirt roads. From June to October, the height of the rainy season, the region was inaccessible by road from the north. Senegalese advisors worried that Senegal Oriental was culturally allied with Guinea and Mali more than Senegal. The administration closely surveyed regional politicians; concerned the population was susceptible to “radicalization.”²² In the early 1960s, bureaucrats newly appointed to Senegal Oriental referred to it as “barely integrated into the Senegalese territory.”²³

However, the region's natural endowments—particularly its distinctive wildlife and geological structure—also rendered it valuable to the post-colonial state. By mid-century, it was the only region in Senegal that hosted populations of lions, hippopotami, and elephants. In 1954,

²⁰ Archives Nationale du Senegal, Documentation, “Operation Kedougou,” February 29—March 4, 1960. The author of this report, which was undertaken just after Senegal's official independence, recounted that the “President has noticed the delay of the region compared to other parts of Senegal.”

²¹ For example, see Archives Nationales de la Guinée (ANG), Conakry, 3 Q 10 Arnaud, Directeur des Mines de l'AOF, ‘Rapport sur l'organisation administrative, technique, et coopérative d'orpaillage’, Dakar, 11 Sep. 1944.

²² ANS, V-P files, Correspondence with Tambacounda Police, 1961; *Dakar-Matin*, La Guinee, 1961.

²³ Archives du Senegal (ANS), Dakar, Archives of the Government of Senegal, Office of the Vice President An administrative assignment to Kedougou in the 1960s-80s was considered a form of punishment for recalcitrant civil servants. See Chapter 5.

the colonial state attempted to conserve and capitalize on this biological diversity by establishing the Niokholo Koba, a 240,000-hectare nature preserve covering the entire southwestern portion of Senegal Oriental. Senghor expanded the boundaries of the park, invested heavily in promoting the region as a tourist destination. From the 1950s through the 1980s, Niokolo Koba was the centerpiece of Senegal's participation in international conservation efforts.²⁴

Senghor's interest in transforming Senegal Oriental's developmental future through its natural resources also extended into the mineral sector. Compared to most of its neighbors, Senegal had few mineral resources that could be readily converted into profitable mines or industries. Geologically young sedimentary deposits undergird most of Senegal's landmass, of which phosphates and sand were the only minerals of major economic value. By contrast, Senegal Oriental was a land of "old rocks," occupying the Birimean Greenstone belt. This roughly two billion year old rock deposit runs under large portions of West Africa and contains deposits of gold, diamonds, iron, lithium, tin, molybdenum, nickel, copper and chromium.

The presence of gold in southeastern Senegal was well known and documented by the colonial state due to the antiquity of the local gold mining economy and its expansion under colonialism. Colonial geologists mapped and tracked "artisanal" mine workings in southeastern Senegal, as they did in neighboring Mali and Guinea. After World War II, with fresh funds from the Bureau of Overseas Mining, the Service of Geology designated Senegal Oriental a priority region for detailed mineral exploration, particularly for iron, diamonds, and gold. In the 1950s,

²⁴ See the fascinating article by first Senegalese governor of Sénégal Oriental, Ibrahima Niang, "Développement du Tourisme dans la Région du Sénégal Oriental," *Cahiers du Centre de recherches anthropologiques*, XII, 2:1-2 (1967), 174-6; and Léopold Sedar Senghor, "Preface," In André-Roger Dupuy, *Soldat des Bêtes Soldat des Bêtes: Vingt ans de lutte pour la défense de la faune africaine* (Rennes, 1991).

French geologists conducted a series of systematic studies of the structural geology of the region, including reports on local exploitation of alluvial gold deposits.²⁵

Shortly after independence, Senghor's administration set out to learn more about Senegal Oriental's mineral potential. This required considerable expertise and funds. Scientific research, along with development planning and the nationalization of land, were the primary tools used by Senghor's administration to imagine a new developmental cartography for Senegal.²⁶

Throughout the 1960s, French and African technical advisors working for the new Senegalese state sought out cooperative aid agreements to fund ecological, social, and economic research into a number of the state's developmental priorities. Cooperative aid from France, for example, funded multi-disciplinary research teams of Europeans and Africans to conduct studies of different rural "*milieu*" in the Senegalese countryside. *Milieu* was a holistic concept that included physical features as well as human interactions with the landscape that broke with the focus of colonial ethnography on stabilized "ethnic groups." Based on the results of these interdisciplinary studies, the state identified "natural zones" of economic activity around which Senegal's new developmental poles would be oriented.²⁷ But Senegal Oriental figured only marginally in these efforts. The developmental goals for Eastern Senegal were vague in early planning documents. Rather, a very different group of multi-national scientists descended into

²⁵ The most comprehensive work to emerge from the 1950s was the thesis of Jean Pierre Bassot, which was later published as *Etude géologique du Sénégal Oriental et de ses confins guinéo maliens, Mémoires du Bureau de Recherche Géologique et Minière*, no. 40 (1961).

²⁶ National planning would be carried out by the state as the trustee of land and productive resources (put into practice by land reforms in 1964), and by centralized public establishments tied to the government. Senghor identified the goals of effective planning as the elimination of private property; the development of scientific research; and the establishment of a true economic plan. Léopold Sédar Senghor, *Négritude et humanisme* (Paris, 1964).

²⁷ Most of this research was focused on agricultural "milieu," which was prioritized by Senegal's version of African socialism—understood as a "middle way" between Soviet Marxism and American liberalism. Léopold Sédar Senghor, "Negritude and African Socialism" *African Affairs* 15 (1963): 9-22; Senghor, *Négritude*; Mamadou Dia, *L'économie africaine* (Paris, 1957).

this region: geologists, geochemists, and mining engineers charged with identifying the geological *milieu* of this border zone. Rather than study the human landscape, their goal was to locate mineral deposits of economic value to the Senegalese state in the near-term.

Senegal in Search of Subterranean Knowledge



(Figure 21: African geological assistants operating mortar-pickers, Senegal Oriental, circa 1959, Courtesy of the Archives Nationales du Senegal)

In the 1960s, a host of foreign aid and technical agencies offered assistance to African states, but bi- and multi-lateral protocols for cooperative assistance were fraught with the politics of the global Cold War. In the 1960s and 1970s, this section documented, Senegal's Direction of Mines (DMG) brokered access to geological knowledge by weaving together a series of international cooperative research protocols for mineral surveys. In line with Senegal's broader foreign policy, France remained the largest contributor to research in Senegal's mineral sector--

but only by a narrow margin.²⁸ Protocols with the United Nations and the USSR also funded mineral exploration and trained the first generation of Senegalese geologists and mineralogists. Senegal remained more closely aligned with France's policies and politics than its neighbors. But independent Senegal was far from a "puppet" or "proxy" of French interests, as some scholars and journalists have argued.²⁹ The DMG pooled funds and diverse networks of expertise to generate knowledge about its mineral reserves.³⁰ For example, the Direction acquired aerial radiometric surveys of mineral anomalies from French cooperative research, baseline geochemical studies from the United Nations, and gold prospecting from the Soviet Union.

Geological research was particularly well adapted to the vagaries of international funding and lapses between different phases of projects. Research on agriculture and ecological conditions could become quickly outdated as rainfall patterns, pests, or available fertilizers shifted. By comparison, knowledge of mineral deposits--at least baseline data--is relatively static and can be aggregated. Of course, new technologies for mineral exploration emerged, leading to reappraisals of the size, depth, or composition of different ores and basement rocks. Despite this, it was possible for the Senegalese state to acquire knowledge from one mineral mapping mission that it could "shelve" for years until it was able to mobilize funds to expand upon earlier results. However, the DMG's search for subterranean knowledge was also constrained by French interests in Senegal's mineral sector and control over key laboratories and geological archives.

²⁸ Mamadou Diouf, 'Senegalese Development: From Mass Mobilization to Technocratic Elitism,' In *International Development and the Social Sciences*, F. Cooper and R. Packard (eds.). Berkeley: University of California Press, 1997, 291-319. From 1960-1966, 40% of Senegal's budget came from foreign aid (85% from France, followed by the U.S., West Germany, the USSR, and Canada). Senghor also nurtured close relationships with Charles de Gaulle and Georges Pompidou.

²⁹ Dozon, *Frères et Sujets*; Gellar, *Senegal*.

³⁰ As a case in point, many African states readily ruptured relationships with former colonial powers or new "partners," such as the USSR, if transfers of technological assistance did not materialize or if they suspected political advisors of pursuing alternative agendas to those agreed upon. Guinea's rupture with the USSR in 1961 over technical problems is a compelling example. Robert Legvold, *Soviet Policy in West Africa* (Cambridge, 1972).

Bureau Minière des Recherches géologiques et minières

Like many African states, independent Senegal set about dissimulating the structures of colonialism and transforming them into national ministries, offices, and laboratories. French institutions also scrambled to reorganize and re-label colonial institutions. The Office of Geological and Mineral Research (BRGM) was one such relabeling. BRGM was created as a public institution in 1959 in the midst of the rapid reconfiguration of colonial research institutions in France's overseas colonies. BRGM was roughly divided into two branches: one focused on technical assistance, the other on the commercialization of mineral projects overseas.³¹ BRGM absorbed and consolidated the colonial Federal Direction of Mines and Geology (DFMG) and the Mineral Office of Overseas France (BUMIFOM).³² In so doing, the BRGM also acquired the publication services, archives, and physical infrastructures of these federal institutions in Dakar. This included the former building of the DFMG, which housed a large scientific library and archives. Built in 1954, it boasted state-of-the-art geochemistry and geophysical laboratories and mineral collections assembled by geologists across the federation.

BRGM did not transfer this building to Senegal's Direction of Mines until the 1980s. Until then, the BRGM used the laboratories and archives of the former DFMG building for commercial purposes. BRGM worked closely with "*la coopération*," another French institution born at decolonization. *Coopération* consisted of material, institutional, and technical assistance from the French metropole namely to its former overseas colonies.³³ In Senegal, *coopération*

³¹ By contracting out its services overseas, the BRGM also assisted with France's budgetary crisis between 1962 and 1964. BRGM's contracts with Saudi Arabia were particularly important.

³² Under the French colonial federal state, the DFMG focused on geological research, whereas the BUMIFOM carried out mineral exploration and managed relationships with mining companies and private prospectors. By the mid 1950s, the functions of these two agencies increasingly merged.

³³ In a timeline similar to that of the BRGM, the "Ministère de la Coopération" was formed in 1959 as a reconstitution of the "Ministère de la France d'Outre Mer." While France later expanded its cooperative efforts into other "underdeveloped" countries, in the 1960s and 1970s its cooperative accords were

took the form of protocols and missions funded by the Fonds d'Aide de la Coopération de la République Française (FAC). FAC funds were tied to *coopérants*—French expatriates, many of whom converted jobs in the colonial service into new careers as “technical advisors” within the government and universities in newly independent African states.³⁴ BRGM was the key institution through which French geologists chartered post-colonial “African careers” (*carrières africaines*) in former French colonies.³⁵ While the BRGM was reconverting its colonial era personnel into technical advisors, the DMG set up shop across time. The DMG was designed to organize and authorize all mineral research on national soil, in addition to administering mineral concessions.³⁶ However, the scientific capacities of the DMG were limited. While the BRGM enjoyed the laboratory services of the colonial state, the DMG occupied a few sparse offices in an aging building in downtown Dakar. Such unrealized institutional “transfers” of laboratories and facilities was characteristic of Senegal’s fraught relationship with French cooperation.³⁷

In most cases, the BRGM continued to carry out mineral missions undertaken by the colonial DFMG in the late 1950s. In Senegal these missions were concentrated in Senegal

focused on its former colonies. Senegal was the largest recipient of French aid in sub-Saharan Africa. Gellar, *Senegal*; Chafer, *The End of Empire*.

³⁴ Many former colonial employees pursued employment within the UN and other inter-territorial organizations formed in the postwar and early independence era. On the “recycling” of colonial experts into international institutions, see Perrin Selcer, *Constructing Spaceship Earth: UN Scientists and the Cold War Origins of Sustainable Development* (Columbia University Press, Forthcoming).

³⁵ For example, Jean-Pierre Bassot, who started his thesis research during the late French colonial period, worked for BRGM in Mali and in the Democratic Republic of Congo in the 1960s and 1970s. Similarly, Andre Blanchot, who was the last director of the Service of Geology of AOF before independence, spent the rest of his career collaborating comprehensive mineral maps of Africa—published by BRGM.

³⁶ Other colonial federal institutions based in Dakar contributed to geological and mineral research. For example, “L’Institut français d’Afrique noire” (IFAN) hosted a small mineral laboratory and museum. Theodore Monod, IFAN’s first director, maintained an eclectic research agenda that combined geological studies with ethnography, natural history, and even climatology. ORSTOM, which became IRD, also occasionally funded geological research. See C. Bonneuil and P. Petitjean, “Les chemins de la création de l’Orstom, du Front Populaire à la Libération en passant par Vichy, 1936-1945: recherche scientifique et politique coloniale,” in P. Petitjean (ed.), *Les sciences coloniales, figures et institutions 2* (1996):113-61.

³⁷ In the 1970s and 1980s, the BRGM and the DMG collaborated on a number of mineral missions and activities, including the drafting of what became the 800-page *Direction des Mines et de la Géologie, Plan Minéral du Sénégal* (Dakar, 1984). All of these collaborations were financed by the FAC.

Oriental and focused on gold prospecting and basic geological research, which was only briefly interrupted in the midst of decolonization.³⁸ In most cases, geologists who worked for the colonial DFMG continued to work for the newly nationalized BRGM.³⁹ By contrast, the DMG also pursued mineral exploration initiatives distinct from those of BRGM. The DMG's priorities included cataloging the country's mineral resources and training a young cohort of citizens in the geological and mineral sciences. In 1962, Senegal signed its first bilateral agreement with the FAC to fund a private French agency to conduct an aerial magnetic survey of Senegal Oriental. The survey was designed to detect magnetic anomalies, which could indicate hard mineral deposits. The initial results were promising, but mineral reconnaissance on the ground was needed to confirm if the anomalies indicated economically valuable deposits.⁴⁰ For this task, the Direction of Mines appealed to the United Nations.

The United Nations Organization

Senegal was an early recipient of multi-lateral assistance, including transfers from the European Development Fund and the United Nations.⁴¹ In the early 1960s, the United Nations Organization (UNO) extended assistance to newly independent states to explore their natural resources. There were a number of reasons why mineral exploration appeared on the UNO's agenda. For one, it took part in the broader technical assistance mission of the UNO, which came of age through assistance to Greece and Haiti in the early postwar period, and later shifted to

³⁸ Bassot, *Etude géologique du Sénégal Oriental*.

³⁹ Perhaps the most significant change was the name of the publication series from the "Bulletin de Bureau minier de la France d'outre mer" to the "Memoires de Bureau des Recherches géologiques et minières. On this transition for French personnel, see Legoux and Marelle, *Les mines et la recherche*.

⁴⁰ Aerial photographic surveys, conducted in the 1950s by the "Institut français de géographie" in French West Africa, had already begun to revolutionize knowledge of the region's mineral deposits.

⁴¹ The EDF was created in 1957 by the Treaty of Rome, and primarily extended aid to former European colonies. Senegal ranked 3rd among recipients of aid extended by the first EDF.

extend technical expertise and training citizens of newly independent nations.⁴² In 1958, the United Nations established a “Special Fund” to finance major technical research projects in the most impoverished countries.⁴³ The majority of Special Fund projects were in the mineral sector, which was seen as a major target for rapid economic growth in the “developing world.” In particular, the UNO funded mineral exploration in regions where the private sector would not invest and in countries where the state was eager to develop its mineral sector.⁴⁴ Further, as Donna Mehos and Suzanne Moon argue, UNO technical assistance promoted a particular brand of internationalism designed to transcend Cold War politics.⁴⁵ The UNO aimed to extend technical aid while abstaining from interfering in the political affairs of the recipient country. To accomplish this, the UNO deployed multi-national teams of experts to ensure that the political agendas of particular countries would not be over-emphasized. Yet politics of other forms seeped into UNO mineral exploration.⁴⁶ The concept of “development” to emerge out of the postwar period relied strongly on the use of natural resources for industrialization. In the postwar period, the United States and the USSR, in particular, were concerned about the outstripping of mineral resources by rapid global population growth and industrialization.⁴⁷ Mineral missions allowed

⁴² By 1949, the UN had established an Expanded Program of Technical Assistance for the Economic Development of Less-Developed Countries (EPTA) with the goal of providing expertise rather than capital. This made the deployment of experts central to its mission. United Nations Letters.

⁴³ In 1965, the Special Fund was merged with the Expanded Program of Technical Assistance to form the United Nations Development Program. Nico Schrijver, *Sovereignty over Natural Resources: Balancing Rights and Duties* (Cambridge, 1997).

⁴⁴ The United Nations Department of Economic and Social Affairs, *Mineral Resources Development with Particular Reference to the Developing Countries* (United Nations, New York, 1970).

⁴⁵ Perrin Selcer, *Constructing Spaceship Earth: UN Scientists and the Cold War Origins of Sustainable Development* (Columbia University Press, Forthcoming); Donna Mehos and Suzanne Moon, “The Uses of Portability: circulating experts in the technopolitics of Cold War and decolonization,” In *Entangled Geographies*, Gabrielle Hecht, ed. (2011).

⁴⁶ See also the UN Commission on Permanent Sovereignty over Natural Resources (1961) and the 1946 UN Scientific Conference on the Conservation and Effective Utilization of Natural Resources.

⁴⁷ The vulnerability of future global mineral supplies was made of explicit concern in the Atlantic Charter of 1941 and the first GATT documents.

the UNO to support the national development of post-colonial states, while simultaneously locating mineral deposits of value to the so-called “developed” countries.⁴⁸

In the early 1960s, Senegal benefited from two major UNO technical missions. One included a 5.8 million dollar subsidy to study the technical feasibility of building a dam on the Senegal River; the other was for a broad-based “Mineral Survey of Senegal Oriental.”⁴⁹ The Direction of Mines and Geology requested assistance in exploring for gold and diamond deposits in Senegal with the hope of locating minerals--such as diamonds and gold--that could be profitably exploited without making massive investments in rail and road infrastructure. The UNO agreed to send a team of experts to conduct a “Mineral Survey of Senegal Oriental” to test the geochemical properties of soils that aligned with aerial anomalies. The UNO also agreed to meet Senegal’s equally urgent need: to train Senegalese personnel in techniques of mineral exploration and geochemical laboratory testing.⁵⁰ An initial protocol was signed between the UNO and Senegal to finance a mineral survey from 1963-1965. The UNO funded two additional phases of the project, focused on the most promising results of the first broad-based survey. The second mission focused on gold and diamonds (1966-69) and the third on copper (1970-71).

In January 1963 a team of UNO experts arrived in Senegal. They appeared to embody the UNO’s commitment to national diversity in its development missions.⁵¹ Out of the initial group of ten expatriate personnel, two were French, two Swiss, two Russian, and there was one expert each from the Netherlands, Spain, Canada, and Belgium. This apparent diversity belied

⁴⁸ F. Dixey, United Nations Educational, Scientific and Cultural Organization (UNESCO), *The Investigation of Geology and Mineral Resources in Africa* (Paris, 1961); Schrijver, *Sovereignty over Natural Resources*.

⁴⁹ This represented Senegal’s largest effort to develop the peripheral regions lining the Senegal River. This became the OMVG project. See *Memento de l’economie Africaine* (Paris, 1967). From 1960 to 1965, the UN gave an estimated \$13,320,000 to Senegal in multi-lateral aid.

⁵⁰ F. Dixey, *The Investigation of Geology*.

⁵¹ Selcer, *Constructing Spaceship Earth*; Mehos and Moon, “The Uses of Portability.”

significant continuities with French colonial expertise. Three of the four geologists assigned to the UNO mission in Senegal Oriental were formerly employed by BRGM for mineral exploration in Senegal Oriental (in some cases, within the same year as the UNO mission).⁵² Jean Bois, a French geologist, and Frank Witschard, a Swiss geologist, had both worked in Senegal Oriental since the late 1950s as contract personnel for the French colonial state.⁵³ Another colonial legacy of the missions was their use of BRGM as a primary sub-contractor for laboratory analyses.⁵⁴ Throughout the 1960s and 1970s, BRGM benefited from sub-contracting with dozens of mineral mapping missions that worked in independent Senegal and elsewhere.⁵⁵

Despite the cozy overlaps between UNO personnel and the BRGM, the UNO mission framed its scientific research in Senegal Oriental as a clear break from colonial-era research, which, they argued, had focused too much on basic geological questions. By contrast, the research of the UNO mission was “applied.” The goal was to train national experts in mineral exploration in the field and to identify economically productive mineral deposits that could be exploited by the Senegalese state to meet its developmental ambitions.⁵⁶ The United Nations covered the costs of research equipment, laboratory services, and the travel and salaries of its “technical experts.” In turn, the Senegalese state furnished fuel and lodging in Dakar for experts as well as the salaries of Senegalese employed for the mission.⁵⁷ Senegalese personnel were

⁵² Not all of the scientists who worked for BRGM were French citizens. In the immediate postwar period, France often employed other Francophone positions, particularly in certain technical positions.

⁵³ Bassot, *Etude géologique du Sénégal Oriental*; Fred Witschard, *Contribution à l'étude géologique, pétrographique et métallogénique des massifs granitiques du Sénégal oriental*, Editions Bureau de Recherche Géologique et Minière (1965).

⁵⁴ Harold Bloom, a well-known American geochemist, marveled at the capacities of the BRGM laboratory in the 1960s, which was run by a French husband-wife team of *coopérants*.

⁵⁵ The BRGM also charged a fee for cooperative missions to consult colonial-era maps and geological research reports, filed in la bibliothèque.

⁵⁶ United Nations Organization, Mission to Senegal Oriental, 1963, 1971.

⁵⁷ The United Nations Special Funds allocated roughly 1.5 US million to the project. The contribution of the Senegalese government was estimated at a little over 1 million, which included skilled labor.

divided into three categories: scientists or technicians, mechanics or administrative assistants, and manual laborers. The first two categories were recruited in Dakar, the latter category locally.

The Senegalese personnel recruited in Dakar include some of the most important names in the geological sciences in post-colonial Senegal. Ousseynou Dia, Pierre Diadhiou, Mamadou Sy, Mountaga Diallo, and Mamadou Yacine Fall later occupied the most important posts within the DMG, the Département de Géologie at the Université de Dakar, and within Senegal's private mineral industry. All of these men started their careers as "geology aids" (*aide géologique*) and "prospecting aids" (*aide prospecteur*) for the expatriates working for the UNO mission. These Senegalese technicians traveled, camped, and conducted research with UNO personnel in Senegal Oriental. During the rainy season, when travel was impracticable in Senegal Oriental, the team of expatriates and Senegalese returned to Dakar for vacations and laboratory work.⁵⁸

In Senegal Oriental, the UNO established a base camp in Senegal Oriental. Mako was situated on the Gambia River and along the road linking Kedougou to the regional seat of Tambacounda. From here, the mission split into sub-teams for mineral exploration "in the bush."⁵⁹ At 25,000 square kilometers, the UNO's research zone was vast. Each team investigated a quadrant of this territory, focused around anomalies detected in the 1962 aerial surveys. Sub-teams consisted of a single UNO expert, one to two Senegalese counterparts, and anywhere from six to 25 local workers. Equipped with all-terrain vehicles, the teams worked in relative autonomy. Working 75 to 100 kilometers from Mako, most teams established sub-camps closer to their research zones. Technological hierarchies emerged in the clustering of UNO experts during field research. Soviet geologists specialized in exploring alluvial and quartz gold deposits,

⁵⁸ Time in Dakar was spent on reporting, reviewing the laboratory analyses carried out by BRGM, and for vacations back in Europe for the expatriate staff. Senegalese technicians sometimes remained in the field.

⁵⁹ Dia would become one of the most influential geologists in post-colonial Senegal. In 1981, he collaborated with Alhassane Dia to found the Institut de Sciences de la Terre, which is one of West Africa's top institutions for the training of engineers in earth sciences.

domain in which they were considered the clear experts in comparison to Francophone scientists. French and Swiss geologists returned to zones they had surveyed in earlier years while working for the French administration.⁶⁰ Reports commented on the expertise of Soviet geologists and the fact that some field scientists were familiarized with Birrimean rock formations from cooperative technical research carried out in Ghana, which began hosting Soviet scientists in 1957. When the UNO mission in Senegal Oriental was renewed in the mid-1960s, its focus was narrowed to gold and diamond prospecting. French and Swiss geologists were largely replaced by Soviets.⁶¹

In their quarterly and yearly reports, the UNO catalogued the presence of gold, chromite, cooper, iron, and molybdenite in Senegal Oriental. Diamond prospecting yielded few results. While the UNO had identified a number of rich mineral deposits, few could be profitably exploited at current market prices for hard metals. The distance of the region from coastal ports, and local obstacles of generating electrical power raised costs for a potential mine. There were promising indexes for a future copper mine, but not at current global market prices. The UNO did, however, recommend more research into the region's gold reserves. The UNO had primarily conducted reconnaissance of alluvial gold along the Faleme River. Preliminary studies of quartz deposits near the village of Momokhono, in particular, appeared promising. The DMG carried through on this suggestion by reaching out to the USSR for specialized technical assistance.

⁶⁰ If the employ of former colonial employees was discouraged by most UN missions, this was not the case in the three UN missions to Senegal Oriental in the 1960s.

⁶¹ For later missions, the camp at Mako was abandoned in favor of two smaller camps: one at Wassandara along the Faleme (diamonds and gold) and one at Gabou near Bakel (copper and chromite).

Sénégal-Sovietique

Throughout the 1960s, the relationship between Senegal and the USSR was mutually guarded and often tense. Despite the exchange of diplomatic missions in the early 1960s, diplomats from the USSR vocally criticized the neo-colonial policies of the “semi-colonies” of Senegal and Cote d’Ivoire.⁶² Senghor and other high-level policymakers were also critical of Soviet as well as Cuban involvement in Africa—warning of the possibility of a “colonial reconquest by the east.” As Senegal became France’s largest recipient of foreign aid in West Africa in the early 1960s, Guinea and Mali solicited the USSR for assistance.⁶³ The USSR funneled considerable aid into these states, which pursued putatively radical programs of decolonization.⁶⁴ When Senegal’s Mamadou Dia visited the USSR in 1962, he emphasized that Senegal’s “African socialism” was not inspired by Marxist-Leninist communism, but was a natural extension of the social and economic life of African peoples.⁶⁵ When the first Soviet diplomatic mission arrived in Dakar in 1962, Senegal’s Ministry of Foreign Affairs drew careful attention to the country’s position of nonalignment and noninterference in the internal affairs of other nations.

These tensions did not stop Senghor and his technical advisors from capitalizing on the unique opportunities for technical aid offered by the USSR during the 1960s and early 1970s. And as the 1960s progressed, and the USSR liberalized its policies and extended more technical

⁶² Legvold, *Soviet Policy*.

⁶³ Senghor famously critiqued Cuban and Soviet involvement in Angola and Ethiopia, as a friend and potential ally. Sheldon Gellar, *Senegal: An African Nation Between Islam and the West* (Boulder, 1982), 82-3. This view is also drawn from Senghor’s support for the Western-backed National Union for the Total Independence of Angola. From the postwar period until independence in 1960, Senghor aimed to increase Senegal’s internal political and administrative autonomy, while insuring the continuation of French economic support and African economic space. W.A.E. Skurnik, *The Foreign Policy of Senegal* (Evanston, IL, 1972).

⁶⁴ Senegal’s policy of staying in the franc zone and allowing the French military to use Senegal as an operations base was in marked contrast to Mali and Guinea, who pushed the French army from national soil and minted their own currency. For a detailed account of Senegal’s foreign policy during the 1960s, see Skurnik, *The Foreign Policy of Senegal*.

⁶⁵ Gellar, *Senegal: An African Nation*; Legvold, *Soviet Policy*

aid to African states considered “moderate,” the relationship between USSR and Senegalese diplomats eased considerably. USSR technical assistance to Senegal remained modest. Only three major missions were carried out on Senegalese soil. The first, in 1962, was a feasibility study for a pump-irrigation project along Senegal’s northern river region.⁶⁶ A second accord was signed in 1967 to assist Senegal’s industrial tuna industry. The longest Soviet mission on Senegalese soil, which lasted for three years, was carried out in Senegal Oriental. Born of a 1969 protocol, the project became known colloquially as “Sénégal-Sovietique.”

Senegal’s Direction of mines asked the USSR to explore anomalies identified by the UNO mineral missions in the mid-1960s, particularly promising indexes of gold. At the time, the USSR boasted more advanced gold prospecting and geochemical laboratory techniques than France.⁶⁷ Little evidence exists—either in memory or archival documents—for the context under which this mission was conceived. We do know that Sénégal-Sovietique was run exclusively by Soviet scientists and overseen by Mamadou Sy, then the director of the Direction of Mines Dakar. Sy had worked on the UNO mission and was the recipient of a scholarship to attend a year of university in Moscow, where he studied geochemistry focused on gold. Upon his return, Sy reincorporated into the UNO mission and continued specialized training with one of the Soviet geologists employed by the United Nations. While there was no direct overlap between the Soviet technical advisors of the UNO and the Sénégal-Sovietique mission, it is possible that Mamadou Sy brokered this agreement during his time as a student in the USSR.⁶⁸

⁶⁶ Skurnik, *The Foreign Policy of Senegal*.

⁶⁷ Interview with Cheik Diop, Kedougou, June 2014.

⁶⁸ The current DMG did not have the major technical reports of the mission on file and several people I interviewed within the Mineral of Mines even denied its existence (or were unaware of it). I accessed the final report through the personel archives of Cheik Diop who studied mining engineering—focused on industrial gold mines—in the USSR in the late 1970s. One of his thesis advisors had served on the Sénégal-Sovietique mission and had passed along his personal copy of the technical report.

Sénégal-Sovietique retains a lively place in the memory of many older residents of Momokhono, the village with which this chapter opened. Momokhono hosted UNO and BRGM, the latter while Senegal was still a French colony. The Soviet Mission chose Momokhono as a base camp and it returned to the village for the dry seasons of 1971, 1972, and 1973. In total, roughly 25 Soviet experts, a dozen Senegalese technicians, and over 220 local laborers worked for the mission. From the base camp in Momokhono, groups divided into sub-teams focused on prospecting for either alluvial and quartz rock. Sénégal-Sovietique rehired several Senegalese technicians who worked for the UNO, including two men trained as prospecting aides.⁶⁹ In contrast to the UNO, Sénégal-Sovietique did not contract with the BRGM for laboratory services. The team performed its own geochemical analyses in a bush laboratory with equipment imported from St. Petersburg. Advanced tests were run in a Dakar-based laboratory, where Soviet geologists also trained Senegalese technicians working for the Direction of Mines.

Today, senior Senegalese geologists regard the research conducted by Sénégal-Sovietique as the most thorough and scientifically sound of the independence-era missions. By the time the mission was concluded in 1973, Russian geologists had identified the potential of mining a lode ore gold deposit located close to the village of Sabodala. Another twenty years would pass before the first attempts were made to exploit gold in Sabodala on an industrial scale (see Chapter 5). The Soviet mission is credited with documenting the potential of Sabodala.

The departure of Sénégal-Sovietique in 1973 marked the end of a distinctive era in Senegal's post-colonial techno-political history. There were growing global concerns about the decrease in the flow of foreign investment in the natural-resources sector tied to the low prices of

⁶⁹ Many Senegalese who pursued technical training in the USSR with scholarships in the 1960s and early 1970s were, upon their return to Senegal, locked out of employment with French industries. They were often forced to double or replicate (“redoublée”) their studies in France. When incorporated into the civil service, they were given posts with little responsibility or upward mobility. Dakar, June 2014.

many minerals (oil was the exception) and other commodities. By the mid-1970s, the BRGM and the Commissariat à l'énergie atomique (CEA) remained the only organizations involved in mineral exploration in Senegal Oriental.⁷⁰ With the assistance of FAC funds, the BRGM intermittently collaborated with the Direction of Mines to conduct research in the zone. But increasingly, the DMG operated as a “gate keeper” for the private mineral exploration of French para-statales. It would not be until the late 1990s and early 2000s that multi-national teams of geologists returned to Senegal Oriental en masse. This time, British, Canadian, Australian, and Indian mineral researchers and geologists joined their ranks. They came with new techniques for mapping and archiving the earth. They carried with them the maps and reports from independence-era mineral missions, building on the work of an earlier generation of scientists.

Sorting Out the Missions: Expertise, Labor and Memory in the Field

By creatively combining technical cooperative agreements, Senegal's Direction of Mines and Geology created a dense archive of the mineral endowments of Senegal Oriental. As the state accumulated maps, reports, charts, and mineral samples, Senegal Oriental also became legible as a frontier for industrial-scale mineral development. In this section, I consider how the local population of Senegal Oriental was incorporated into the mineral missions of the 1960s and early 1970s. Clusters of villagers, and particular men, worked for as many as five different missions. They provisioned research teams with skilled labor and guided expatriate geologists to deposits of gold, iron, and copper discovered by their distant ancestors and recent generations.

⁷⁰ Since its founding in 1945, the CEA made uranium prospecting a top priority. CEA was among the first organizations in Africa to use airborne methods for geological surveys. By 1960, the CEA was operating uranium mines and mills in France, Madagascar, and Gabon. The agency conducted research in Senegal in the 1960s-1980s (centered on the village of Saraya) but judged the deposits too small for exploitation. Gabrielle Hecht, *Being Nuclear: Africa and the Global Uranium Trade* (Cambridge, MA, 2011), esp. 51.

Villages in Senegal Oriental welcomed the arrival of mineral missions. For many, the missions represented the first opportunities to earn a monthly salary without migrating north to farm peanuts as a *surga* or to seek day labor in Dakar or Kaolack.⁷¹ By working for missions, young men earned cash for clothes, bicycles and radios—rare commodities in this isolated region. Memories of the mineral missions cohere around the contributions expatriate personnel gave to weekly food rations. Mission personnel commissioned local hunters and every Saturday, each family with a son working for the mission received a portion of wild boar or antelope. In years following a poor harvest, expatriate technicians included sugar and rice in the ration. Today, these gestures are remembered as an exemplar display of social solidarity that is sorely lacking from relationships with mining companies currently operating in the region.

In a single dry season, research missions could employ as many as 200 men locally. Based deep in the interior of Senegal's most sparsely populated zone, research camps were located in villages rarely numbering more than several hundred people. In certain zones, over the course of a single decade, the sons, fathers, and husbands of hundreds of families worked for these research missions. Young men often worked for multiple missions, accruing years of experience cutting bush roads for prospectors and digging exploration trenches. At times, more than one mission offered work within a single village. Toumanie Touré, an elderly resident of Saraya, described efforts the BRGM and UNO, in particular, put into differentiating their work.

They took me in 1962. [...] 63, 64, 65, I worked all those years. '62 I was with BRGM, but in 63 it was ONU who took me on. In 1963 they divided. It was the same work, but there were different camps. BRGM was to a side, and ONU was to a side. And we [referring to himself and his brothers], we were on the side of ONU. They had the same car, but they changed the color of the car to show us there was a difference. They

⁷¹ In Kedougou, the terms *surga* and *navetane* are used interchangeably in oral recollections to reference historic seasonal migration to farm peanuts elsewhere in Senegal, namely near Kaolack and Thies (either for a wage or for temporary access to land to farm a peanut cash-crop). In other parts of Senegal these terms refer to distinct labor arrangements. On these distinctions, see Philippe David, *Les navétanes: histoire des migrants saisonniers de l'arachide en Sénégal des origines à nos jours* (Dakar, 1980).

changed the colors of the materials too, and they separated the workers. But it was the same kind of work. I was on the side of ONU. I had friends still working for BRGM. It was like that for years. BRGM on one side, ONU on the other. It was the same work. And I knew geologists [attempts to recall the name] who worked for BRGM. The next year they were with ONU. It was like us, one year with BRGM, another year with ONU.⁷²

Others I interviewed expressed more confusion about which mission they worked for and when. This is understandable given that many expert personnel who worked for the colonial state later cycled through missions with the BRGM, the UNO, and the CEA. Many elderly men I interviewed recall the names of specific geologists who visited their village throughout the years, rather than the name of missions. Some geologists worked for as many as three or four different missions throughout the 1960s and early 1970s. This was common for Senegalese technicians whose work prospects as geologists were initially tied to the life cycle of missions.

In local memory, few differences are remembered between the missions in terms of payment, treatment of workers, and work tasks.⁷³ Techniques for digging exploration trenches, sorting dirt into piles, and labeling samples differed slightly. But for many, it was the reliable dry-season cycle of missions that coheres in memory. While the personnel would rotate, the stream of *toubabs* interested in the village and in the land was a constant. Consider the reflections of Sembou Danfakha, who worked for both BRGM and UNO in the 1960s.

It is the research that never finished. Every time a group of *toubabs* arrives, we know they have come to the mountain. I guided them. My father guided them. Now my son works for them. We dig for them. They take samples of rock back to Dakar. To Paris. To Moscow. Wherever they come from. Every year. There was no difference in payment. For us, it was the *blancs qui viennent* (white people who come).⁷⁴

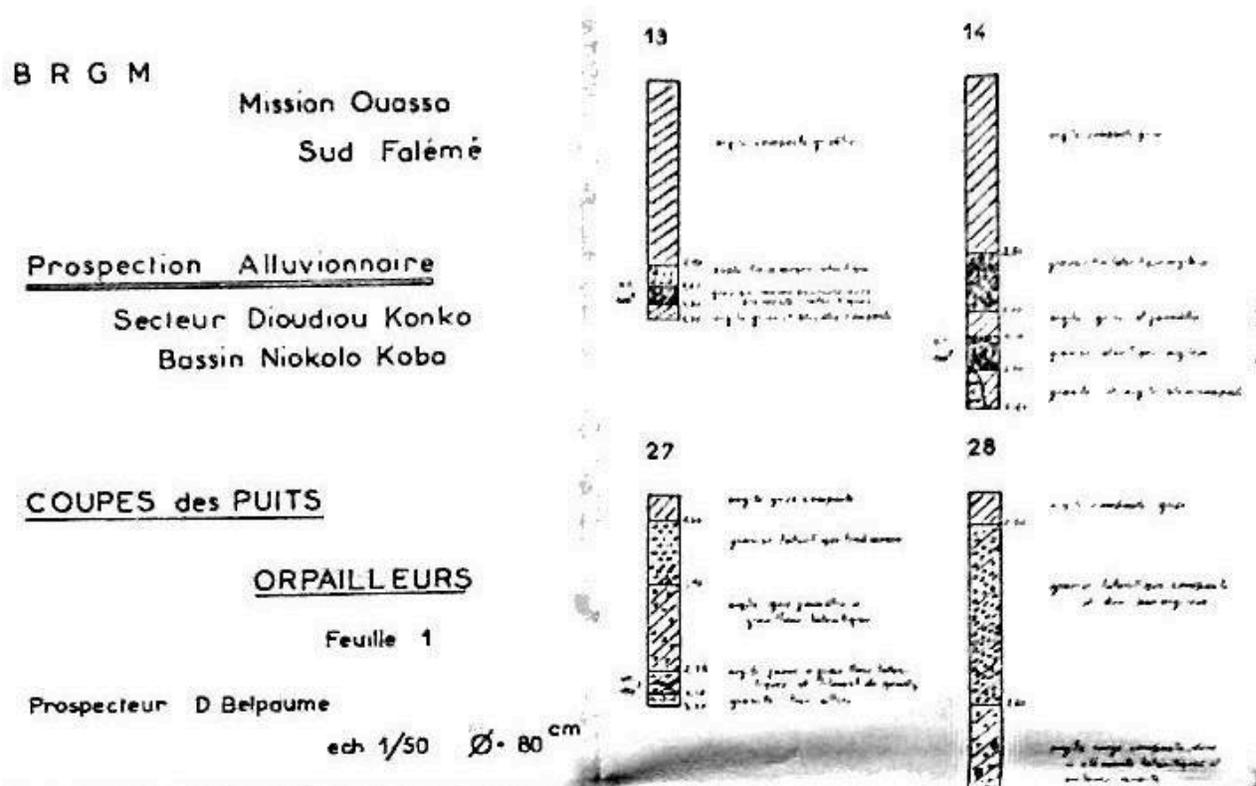
Toubab and Senegalese prospectors valued local populations as reliable manual laborers but also for their knowledge of the location of gold deposits--locally mined *diouras*. Mineral missions

⁷² Interview with Author, Toumani Toure, Momoxono, June 2014.

⁷³ I interviewed roughly seven men, most of who are in the 80s, about their experience working for mineral missions in the 1960s. Many others referred to the work of the missions in Kedougou.

⁷⁴ Interview with Author, Sembou Danfakha, Saraya, June 2014.

benefited from local gold mining expertise through two primary mechanisms. On one hand, they accessed skilled labor for gold prospecting. Not only were populations already familiar with the locations of known gold deposits, they were also skilled in excavating the exploration pits used to test different areas for the presence of precious minerals. As one UN report remarked: “During the dry season, the peasants come work as manual laborers in the prospecting teams. Their traditions as ‘*orpailleurs*’ make them good pit diggers.”⁷⁵ It was during this time period that both the BRGM and the UN refined a research method called the *puits orpailleur* (artisanal gold mining shafts) to test sedimentation of gold and quartz deposits.



Lead geologists of mineral missions also paid expert *orpailleurs* to guide them to *diouras* exploited both active and abandoned. The latter were referenced as the “traces of the ancestors.”⁷⁶ Locally, work as a bush guide was called “Maninkalu deux mille,” which referred to the payment of 2.000 FCA paid to an *orpilleur* guide. Papa Cissokho guided several generations of mineral missions in Saraya, including the BRGM, the UNO and the CEA. The descendent of a family of expert *orpailleurs*, he remembers guiding *toubabs* to the locations of goldfields mined by his father and grandfathers. I asked him why he agreed to work as a guide:

We didn't see the problem in showing them our *dioura*. It was not something that was kept as a secret among us. And no one was thinking that they would actually come and do anything with the *dioura*. What we were concerned about, when we were young, was our *deux mille* (2.000 CFA) to meet our *petit besoins* (small needs, expenses).⁷⁷

Tigana Fofana worked as a guide for Sénégal-Sovietique in the 1960s and for BRGM and the CEA in the 1970s. CEA geologists taught him how to dig exploration pits for uranium. Generations of uranium prospectors have been led directly to his compound in Saraya. As I was asking similar questions about the history of mineral reconnaissance in the zone, I was also guided to Fofana's door. In a series of interviews I conducted with Fofana, he described his role as a liaison between geologists, both Senegalese and expatriates, and the local landscape.

Yes, yes, of course when the missions came they had a map of the land. But they would also take a native from here. [...] They would recruit an *orpilleur* to show them the points [goldfields]. They could find the points, because they have maps and photographs. Then, they were photographs taken from airplanes. But the photo and the land, *ca fait deux* (they are not the same). You need someone to show you the place. On the map it looks one way, but on the ground everything can be different. Some of these maps are old. Streams dry up and die off. But we, who are here, we know where they want to go. The Maninkalu, he has a map in his head. We can show them the points.⁷⁸

For Fofana and others, their knowledge of local geology—as well as the history of mineral exploitation in the zone—was a source of pride. It is only more recently, as he told me in one of

⁷⁶ United Nations Organization, Mission to Senegal Oriental, Final Report.

⁷⁷ Interview with Author, Papa Cissokho, Saraya, May 2014.

⁷⁸ Interview with Author, Fofana, Saraya, May 2014.

our final encounters, that Fofana wonders if he was “exploited” by these prospectors. This was not a prospect he considered when he accepted 2.000 CFA as a mineral guide in the 1960s.

We did not know about that problem then. It is a problem we think of now. We were concerned with our 2.000 CFA in the beginning. Many times, the missions wanted to see places where our mothers and grandmothers would wash gold. We took them to “the nada.”⁷⁹ [Laughter]. For us, that was the work of women! And it was always into the river that the companies wanted to descend first. For us, we could see now harm in this. [...] It is now I see we have been exploited. By the toubabs. By the state. Because now we have nothing. All of these years we worked together. We guided *toubabs* into the bush. But we ate our 2 mille and then it was over.⁸⁰

Memories that elicited the most tension in interviews concerned relationships between locally recruited workers and Senegalese bosses, technical specialists recruited in Dakar.

At independence, Senegal Oriental was relatively isolated from the rest of the country, its diverse population was more closely tied to the languages and ethnic affiliations of neighboring Guinea and Mali. This posed few problems for the colonial federation of French West Africa, which often encouraged migration across territorial borders to supply adequate labor for groundnut farming in central-west Senegal and for colonial infrastructural projects. But these migrations caused concern for independent Senegal—particularly when the Mali Federation splintered and tensions mounted between Leopold Senghor and Sekou Touré.⁸¹ The Senegalese state assigned administrators recruited from the coast to serve in Kedougou as a deliberate strategy to deter local politicians from gaining too much autonomy. The colonial state had also deployed this strategy.⁸² Mineral missions reproduced these hierarchies.

Madi Soumaré, who worked for the BRGM and the Sénégal-Sovietique in the 1970s, recounted in clear terms his grievances: “We had no problem with the *aide de toubab* (European

⁷⁹ The term “nada” refers to auriferous bedrock and is often used to refer to a method of extracting and washing gold from river beds, historically the work of women in this zone.

⁸⁰ Interview with Author, Fofana, Saraya, May 2014.

⁸¹ Momar Coumba Diop, ed., *Le Senegal et ses voisins* (Dakar, 1994).

⁸² Interview with Author, File Sadiakho and Moussa Diallo, June 2014.

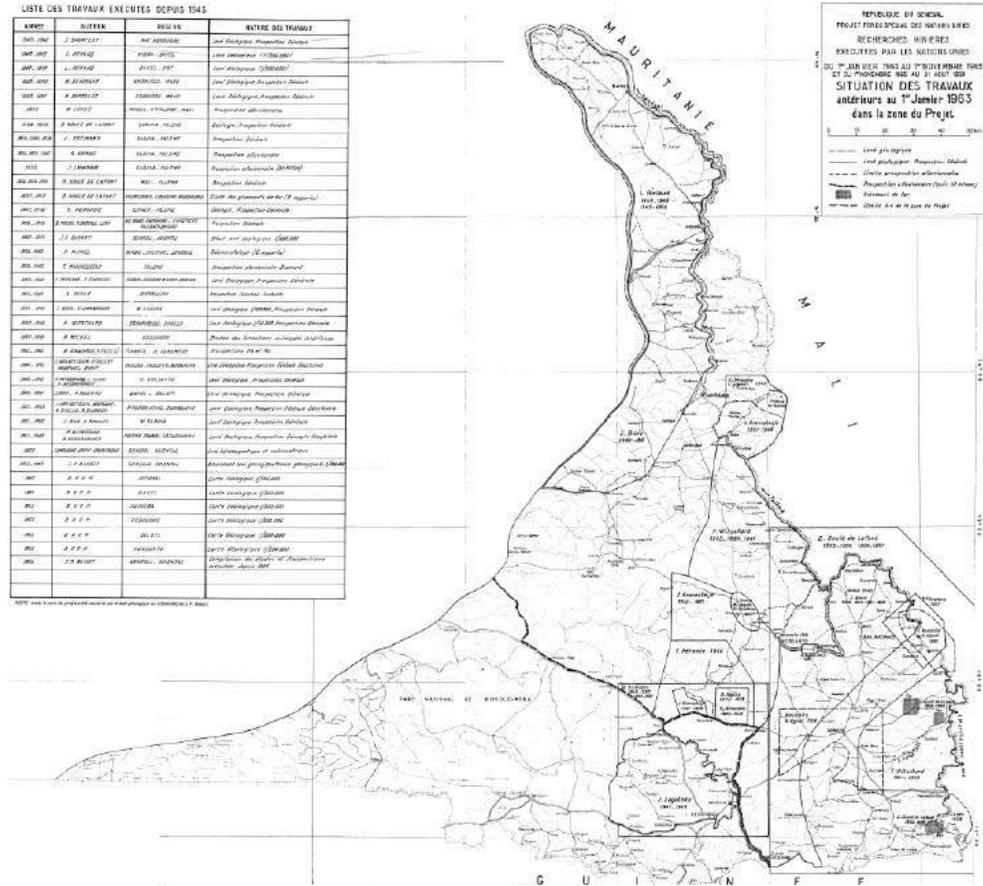
aide). Our problem was with *les nordistes* (the northerners)”.⁸³ *Les nordistes* refers to the Senegalese technicians recruited in Dakar. This term, which many in Senegal view as inflationary, makes a claim to economic and cultural divides between the country’s northern and southern zones.⁸⁴ In this context, *les nordistes* refers to people from the coast, the capital of Dakar, or the central-western peanut basin. These regions also constituted the heart of the colonial economy and its infrastructure. Implicit in this definition is an affiliation of *les nordistes* with Wolof culture and language, although *les nordistes* can also include Fulbe from the north.

Tensions between *les nordistes* (Senegalese technicians) and *les sudistes* (locally recruited manual laborers) were reproduced through the division of labor during field missions. Senegalese technicians often integrated into the UN mission as “prospecting aides” but graduated to the class of “prospector” as they acquired more field experience and the mission advanced. Once promoted to the rank of prospector, these field technicians typically oversaw groups of locally recruited laborers. From among this group, Senegalese technicians selected and trained more specialized workers, including team leaders and prospecting aides.⁸⁵ Once the team finished rudimentary field training, Senegalese technicians would embark on weeks or months of isolated field research with their team of Senegalese laborers. S n galo-Sovietique employed similar strategies of labor organization. By comparison, the French BRGM was less active in training Senegalese prospectors and usually retained expatriate oversight of research activities.

⁸³ Interview with Author, Madi Soumare, Sambaranbugu, December 2013.

⁸⁴ The term *sudiste* is far more politicized in the Casamance, which has been a site of a low-level civil war and separatist movement since the 1980s. Chapter 5 examines some of the structural similarities between Casamance and Kedougou and the ways that people from Kedougou have constructed their marginalization vis- -vis *les nordistes* as one rooted in a *sudiste* ethos. Memories of the mineral missions are often inscribed with these spatio-cultural divisions.

⁸⁵ Toure mobilized his experience as an “aide-prospecteur” to market himself for employment with the CEA. He became the first local employee in field missions to Senegal Oriental to receive a pension.



(Figure 23: UNO mineral research teams, team leaders are indicated on the map, 1965. Courtesy of the Direction des Mines et de la Géologie)

A typical arrangement of a field team was similar to one led by Mountaga Diallo, a Senegalese technician recruited from Dakar. In 1964, after nearing completion of his second year with the UN mission, Diallo led an independent team of Senegalese workers to conduct alluvial gold exploration during the rainy season. While European experts embarked on vacation, Diallo continued to work with thirty local men in a camp along the Faleme River. For two months, Diallo oversaw the excavation of 315 exploration trenches in the area. Diallo, like many of the other specialized Senegalese technicians holding the same rank, tended to be assigned to the same zones over successive years. When Diallo finished his special mission at the end of the

1964 rainy season, he wrote in his final report that, “My men and I have become like a family, and it is with great difficulty that I will leave these men behind at mission’s end.”⁸⁶

Social relations were often viewed differently at the bottom of the labor hierarchy. In the memories of men recruited locally to work for these smaller “bush missions,” tensions with Senegalese bosses were common. They complained that the “Senegalese”—sometimes referred to in interviews by the diminutive term of *Wolof dinnu* (little Wolof) or *Pullo dinnu* (little Fulbe)—treated Mande workers as inferiors and subjected them to work discipline that far exceeded the demands of expatriates who oversaw similar work teams. Recollections of these labor hierarchies clustered around highly stylized statements about ideologies of ethnic differences in work ethic, strength and intelligence. Consider the following account from an interview conducted with an elderly man from a small farming hamlet outside of Saraya.

We were at the base of the missions. It is from the sweat of our brow [hand motion to indicate wiping sweat across his face] that we dug those ditches. We [Mande] are not clever like the *Wolof dinnu* and the *Pulo*, but we know the work of force.⁸⁷

Moussa Traouré summarized his sentiments with a statement that emerged repeatedly in my interviews. “The work of an illiterate man is always that of force.”⁸⁸ On one hand, these two statements speak to common tensions between so-called skilled and unskilled labor, which mapped onto divisions of workers recruited in Dakar and in Senegal Oriental. On the other hand, they point to accumulated grievances over the privileging of ethnic groups more closely bound to Senegal’s economic and cultural heartland to the north and on the coast. These regional divisions are inseparable from the marginalization of Senegal Oriental within the late colonial and early independence economy. They resurfaced in the 1990s when the region’s twinned industrial and artisanal gold boom reversed its status as a labor reserve to an employment destination for

⁸⁶ Interview with Author, Toumani Toure, Momoxono, June 2014.

⁸⁷ Interview with Author, Saraya, March, 2014.

⁸⁸ Interview with Author, Moussa Traoure, March, 2014.

nordistes with connections to government officials and the Ministry of Mines (Chapter 5, 6 and 7). It was the sons of men who served in the mineral missions of the 1960s and 1970s who would protest against the privileged employment of *nordistes* in corporate mining camps. In so doing, they carry on a deeply historical debate over skill and regional inequality in Senegal in which their fathers also took part as laborers in independence-era cooperative mineral missions.

Conclusion

During the 1960s and 1970s, this chapter has shown, the Senegalese state actively recruited technological expertise in the mineral sector through cooperative aid agreements. Mineral missions funded by the UNO, the BRGM, and the USSR transformed Senegal Oriental into a mineral frontier while also profoundly shaping national expertise in geology and mineralogy. Mineral deposits discovered by these missions became “shelf” projects. With rising hard metal prices, pro-market reforms, and new technologies of extraction, expatriate companies returned to the maps and reports of the independence-era missions with newfound interest.

The emergence of a gold rush in Senegal Oriental (Kedougou) since the late 1990s and early 2000s is the subject of the remaining chapters of this dissertation. The Senegalese prospectors and geologists involved in mineral exploration and extraction in the recent boom conducted theses with the first group of Senegalese earth scientists trained by independence-era missions. These technical cooperative agreements transcended the limits of French imperial educational circuits. While many of Senegalese scientists later pursued education in France, their early training was forged in field encounters with mining engineers from Switzerland, Belgium, and the USSR and with networks of expert “artisanal” gold miners from Senegal Oriental.

The expatriate personnel of independence-era mineral missions spent anywhere from two to ten years “in the field.” Their participation in multi-national teams jump-started international careers. Some would return continually to Senegal Oriental in the ensuing decades, working for the CEA or the BRGM. Others became *coopérants* in Mali, the Congo, and Cameroon. These scientists all benefited from the praxis and prospecting knowledge of expert *orpailleurs*. Long-term residents of Senegal Oriental helped expatriate and Senegalese scientists locate gold on an unfamiliar landscape. They also knew how to dig good pits. However, with few exceptions, mineral missions provided local laborers with little career mobility. Some *orpailleur* labored for missions for decades, but they received no pensions. These men are aging at precisely the moment when the region’s mineral resources are more valued on global markets than ever before in their working lives. Mining corporations solicit these men to participate as “village elders” in meetings to discuss “social responsibility programs” and regional development plans. Mining companies do not, however, consider these men partners or experts, even though they continue to benefit from “local” gold discoveries and the generosity extended by local populations to decades of interloping geologists. This bitter predicament led Dembele Danfakha—the man whose biography opened this chapter—to declare mid-stream during one of our interviews:

You see my hands [displaying his palms in front of my face]. They are as rough as the sand. And you see my home [gesturing to the mud hut flanking his back]. There is nothing to see here. Nothing. A man who searches with his hands will find dirt. Only a man who searches with his head will find riches.⁸⁹

Such frank commentaries on poverty, exploitation, and lost opportunities are common in my recorded interviews and field notes. But as Danfakha readily admitted, this was only part of his personal experience of collaborating with prospectors. At independence, he was proud and eager to share what he knew of regional geology. Like many of his peers, he wanted to take part in

⁸⁹ Interview with Author, Danfakha, Momokhono, April. 2014.

Senegal's development and he aspired to future employment in an industrial mine.

Danfakha and his contemporaries in the 1960s had little way of knowing that the knowledge, labor, and even friendship they offered geologists would be taken from them with so few returns. At the time of these mineral missions, the price of gold was at a record low and families only mined the *dioura* from time to time during the height of the dry season. While independent Senegal's first mineral code did not recognize "customary" mining rights, it also contained no explicit articles prohibiting the practice. There were few signs that this natural reserve—which local populations tapped into at times of drought and famine—was under threat.

In fact, in the mid-1970s, several of the Senegalese geologists initially trained by the United Nations, the BRGM, and Sénégal-Sovietique returned to Senegal Oriental on a mission of their own. Now employed as the head geologists of Senegal's Direction of Mines, these men returned to the villages in which they sojourned as prospecting aids in the early 1960s. Their goal was to draft a plan for organizing the region's *orpailleurs* into cooperatives. Local gold mining, they proposed, could be an engine of development for the country's most impoverished region. They tested soils and small-scale equipment that could increase the quantity of gold captured through the "traditional" methods of iron handpicks and the calabash. The Ministry of Mines, and Leopold Senghor himself, took an interest in these proposals when the early droughts of the 1970s struck the Western Sahel—hitting isolated villages on the fragile savannah the hardest.

These proposals failed for reasons that had more to do with plans for the global mineral industry devised in Washington, D.C., than in Dakar. The next chapter considers the role of powerful international organizations, including the World Bank and the United Nations, in pressuring African states to privatize national mineral industries and to simultaneously restrict the rights of "private" citizens to the subsoil. These legal reforms paved the way for the

emergence of an industrial gold mining industry in Senegal, but one that met the needs of expatriates and Senegalese elites rather than those of national scientists and local residents.

CHAPTER 5

Out of the Enclave: Competitive Extraction on Senegal's Mining Frontier



(Figure 24: Australian exploration team and artisanal miners, Sambaranbugu, Senegal, 2013
Photo courtesy of Bassari Resources)

Introduction: “Have you ever seen a gold mine?”

March 4, 2014. It is the height of the dry-season in southeastern Senegal. The last rains fell in November and the atmosphere is bereft of moisture. At mid-morning the temperature is well over 100 degrees Fahrenheit and the heat of the day is still several hours away. I sit in a concrete building with thirty other men and several women in the village of Tomboroncoto, located twenty kilometers north from the town of Kedougou on the national highway that continues to Tambacounda. The building belongs to the “rural community” (*communauté rurale*,

hereafter CR) of Tomboroncoto, the smallest unit of rural administration in Senegal. A hot breeze flits through open windows, protected by a grid of iron rods. “Rural councilors,” elected on the village level to the CR of Tomboroncoto and respected elders from nearby villages sit in green plastic chairs, organized in rows facing a folding table and two easels propping up white butcher-block paper. Behind the folding tables, opposite us, sit the regional directors of parks and water and agriculture. Standing astride the easels are two Senegalese men, representatives of Toro Gold, a British gold exploration company.

Toro Gold’s subsidiary, Bambuk Minerals Limited, holds interests in four exploration permits in southeastern Senegal, covering a total of 1650 km.¹ A year ago, Toro Gold announced the discovery of a one million ounce gold reserve in its Mako permit, which covers 150km.² Toro Gold’s geologists named the gold deposit “Petowal,” the name used by local residents for the mountain ridge bordering the park of Niokholo Koba where the deposit is situated.² Anticipation surrounds this meeting, organized by Toro Gold. It is the first time that the company has officially met with local authorities to announce their plans to exploit the deposit of Petowal as an open-pit gold mine. This meeting is the first of several in the region that will inform the drafting of a “preliminary” Environmental and Social Impact Assessment (ESIA). The Senegalese government requires companies to complete an ESIA before granting an exploitation license. Formally, it is the only opportunity for communities living in the direct vicinity of the future mine to express concerns related to the mine project. This “preliminary”

¹ Three of Toro Gold’s four permits are held in joint venture agreements with local partners. Until January 2012, Toro Gold was in a joint venture arrangement with Kasala Resources SARL for the Mako permit.

² Mining companies often name their companies, and gold deposits, after local expressions, village names, and even ethnic groups and pre-colonial polities. For example, Teranga Gold (the Canadian corporation that operates Senegal’s sole open-pit mine) is the Wolof phrase for “welcome.” “Bassari” of Bassari Resources is the French name for an ethnic minority historically concentrated in Kedougou. Mako is the name of the village adjoining Mako Resources.

ESIA is voluntary on the part of Toro Gold.³ Toro Gold has operated in Kedougou since 2010. Some of its lead geologists have worked in the permitting area for close to fifteen years for a range of different exploration companies.⁴ Toro Gold's exploration operations are based out of their "Mako camp," located five kilometers from the national highway and the village of Mako—the largest settlement within the CR of Tomoboroncoto. Over the past five years, men and women from neighboring villages have worked in the camp as cooks, guardians, drivers, janitors, and geological and prospecting aids. Rural councilors hope the mine will create jobs for the poor locality, but this is muted by concerns of losing productive land to the mine.

Tension is mounting in the room. An environmental impact consultant and the coordinator of community development for Toro Gold have spoken at length about the structure of the Petowal deposit and the unique constraints posed by opening a mine on a strip of land wedged between the Niokholo Koba Park (Senegal's largest nature preserve), the Gambia River, and the national highway. The men have yet to address the most ardent questions of the assembled crowd: Will the mine displace villages, farms and pasturage land? And if so, how will Toro Gold compensate for these losses? Concerns over land are particularly acute in the CR of Tomboroncoto because the Senegalese state forcibly resettled many of these villages in the 1960s and 1970s to expand the boundaries of the Niokholo Koba.⁵ And then, the meeting takes a curious turn. Toro Gold's community development representative, a Senegalese man from Dakar, draws several laminated posters from his briefcase. The posters feature different elements

³ Before a company can qualify for an exploitation license or mineral concession, the Senegalese government requires the conduct and approval of an ESIA. During my fieldwork in 2014, Toro Gold conducted a "pre-Assessment," which was voluntary. Subsequently, the company completed the ESIA.

⁴ Toro Gold purchased the research results of several companies who previously worked in this zone, including Axmin, Randgold, and Goldstone exploration.

⁵ On the contentious history of these forced resettlements, see Melis Ece, "Conserving Nature, Transforming Authority: Eviction and Development at the Margins of the State: The Niokolo-Koba National Park, Senegal" (PhD diss., Anthropology, City University of New York, 2012).

of an open-pit gold mining operation. “Have you ever seen a gold mine?” he asks the crowd. “We want to make sure you understand what a gold mine is, what it really is, before we explain how this mine will impact your lives.”⁶ Councilors in the back of the room strain to see the photographs: an industrial-scale generator, a gold mining mill, open-pit mine, and a bulldozer working its way across an open savannah landscape. A silence falls over the crowd. A man in his early 30s dressed in a white kaftan, a councilor from the village of Tomboroncoto, raises his hand. A toothy grin spreads across his face: “Excuse me, sir, but have you seen *our* gold mine?”⁷

The room erupts in uneasy laughter. This playful question challenges the very premise of the meeting by raising the uncomfortable fact that this British gold mining company competes with the local community to extract the same substance: gold. The conversion of Toro Gold’s exploration permit into a mineral concession raises concerns not only about employment and environmental mitigation. It also threatens the “artisanal” economy of gold mining. Less than five hundred meters away from the meeting, the Mande village of Tomboroncoto—home to approximately 5,000 “permanent” residents—manages a strikingly complex extractive economy. In 2002 a youth from the village discovered a gold deposit less than a kilometer from the village center. In concert with the chief and a council of elders, they conducted sacrifices to transform the goldfield into *dioura*, opening it for exploitation by the community. Since then, dozens of immigrants from neighboring states have installed in the village. Tomboroncoto’s *dioura* is an ancient alluvial deposit, created millennia ago when the Gambia River once covered this village. The *dioura* is situated on sand, the ancient riverbed, over ten meters deep. Traces of gold are found at most depths, but miners target thick layers of alluvial deposits between 3 and thirty feet underground. Because the sandy soil is susceptible to cave-ins, the village has created an open-

⁶ Toro Gold Preliminary ESIA Meeting, Tomboronkoto, Mar. 4, 2014. Recording in possession of author.

⁷ Ibid, emphasis is my own.

pit mine of sorts. Instead of levying a portion of the proceeds of each pit, they charge a monthly rate to immigrants to exploit the open-pit deposit. This has made the *dioura* attractive to migrant miners from Burkina Faso who own and operate mechanical jigs that used water, pumped from tributaries of the Gambia, to disaggregate heavy metals from silts. Entrepreneurs from Burkina Faso operate trucks to sort and transport earth into sterile and gold-laden sands. Residents of surrounding villages also dig in the *dioura* with hand picks. Women, the elderly, and the disabled work in Tomboroncoto's sandy *dioura*, which is known as "soft on the body."

The rhythm of life in the village of Tomboroncoto centers on the crushing, sorting, and processing of rocks and sands. Most compounds host at least three male migrants from Guinea, Mali, or Burkina Faso. Most migrants have built their own huts within the concessions of their Senegalese "hosts," where they raise families of their own. Women wash auriferous sands on wooden sluices lined with coarse rugs, while migrants operate rock-crushing machines. The traditional "police force" of the *dioura* (*tombolman*) is comprised of men of all ages from Tomboroncoto. They levy an informal monthly tax on the use of machines and trucks within the village. With these proceeds, the *tombolman* furnished their health post with medicines, remodeled the village mosque, and recently rewired an industrial-scale generator "gifted" from the Senegalese government, but lacking fuel since its arrival, to illuminate the village at night

In short, Tomboroncoto is already operating an open-pit gold mine. The major difference between their operation and the one proposed by Toro Gold is scale and formality. Let me draw out a few more comparisons between Tomboroncoto's "artisanal" gold mine and the proposed "industrial" mine of its neighbor, Toro Gold. Artisanal mining is often characterized as "local" in comparison to "transnational" mining companies, such as Toro Gold, which is funded largely by British investors and listed on the London stock exchange, officially incorporated in Guernsey

and headquartered in St. Peter Ports (both dependencies of Great Britain).⁸ Toro Gold hires geologists, environmental impact experts, and consultants from Ghana, Mali, South Africa, and Canada. Tomboroncoto’s mine is also a transnational operation. The dioura is governed by local Senegalese, but relies on machines imported from Dubai and Shanghai that are owned and operated by Guinean, Malian, and Burkinabe migrants. Like many “junior” mining companies, Toro Gold explores for gold in several nation-states: Senegal, Cote d’Ivoire, and Gabon.



(Figure 25: Meeting of local residents, Toro Gold, and state officials, Mako, Senegal, 2014)

According to the Toro Gold’s promotional materials, this is a way of distributing risk for its investors. If one gold exploration team comes up empty handed, another is likely to discover a gold deposit suitable for industrial-scale exploitation. Similarly, most heads of household in Tomboroncoto are “mining chiefs” (*damantigi*) of numerous teams spread across different *diouras* in Kedougou. Sajou Keita, a young *tombolman* from Tomboroncoto, exemplifies this

⁸ Bambuk Minerals Limited is a British Virgin Islands company. Most gold companies in West Africa are headquartered in island territories and dependencies colloquially known as off shore tax havens.

work strategy. Sajou manages mining teams in Tomboroncoto, Tinkoto, and Bantaco. Sajou covers the cost of hot meals, *atayaa*, and cigarettes for his team members, who make no capital investments in the initial phases of the mine beyond their sweat equity. Like Toro Gold’s senior management, Sajou covers other costs by recruiting “venture capital.” Sajou’s cousin in Dakar pays for the hand picks, rope, buckets, and pulleys used by the mining teams. Sajou’s mother invests in the empty rice sacks used to sort and store auriferous rocks. If the miners strike a rich gold deposit, these investors will receive a pre-determined portion of the proceeds. These investments in artisanal extraction—like those of investors in Toro Gold’s gold exploration projects throughout West and Central Africa—are very risky. Rarely do all of Sajou’s mining teams turn a profit. Often they are lucky to cover their costs with the gold they recuperate. But over the course of several dry seasons, risk distribution usually pays off. If one or two teams strike big, their proceeds will cover the costs for several years combined.



(Figure 26: Sajou Kieta overlooking the *dioura* of Tomboroncoto, Senegal, 2014)

Further comparisons can be drawn. Most corporate gold mining companies in Guinea, Senegal, and Mali continue exploring for gold even after they have discovered a profitable gold deposit and opened an industrial gold mill. New discoveries feed the original mill, prolonging the life of this large investment in equipment. Similarly, most artisanal mining villages delegate a group of experienced miners to pass the dry season looking for fresh gold deposits. While they sacrifice the immediate labor of these men in the mines, this ensures that there will be a new *dioura* to mine after the one under exploitation dries up. Finally, both gold mining operations—“artisanal” and “industrial”—rely heavily on chemicals to recuperate fine gold particles that cannot be mechanically disaggregated from rocks and sands. The gold industry is notorious for its reliance on noxious cyanide and sulfuric acid techniques. In Kedougou the introduction of hard metals into gold processing is recent compared to other parts of West Africa and South America. Mercury, which is used to amalgamate gold, was introduced to Kedougou’s *diouras* from Mali in 1995.⁹ Migrants from Burkina Faso introduced cyanide heap leaching to Kedougou in the mid-2000s. While the sources of mercury in West Africa are diffuse, the cyanide available in Kedougou is largely smuggled from industrial-scale gold mines in Burkina Faso.¹⁰

Toro Gold and Tomboroncoto are connected beyond parallels in their modes of operation. As documented in earlier chapters, “artisanal” miners in Senegal, Guinea, Mali, and Burkina Faso have exchanged expertise, labor, and gold discoveries with state geologists and private prospectors since the early colonial period. Artisanal and industrial gold mining have evolved in tandem and in competition. Since the 1960s, men from Tomboroncoto have worked as geological aids for Swiss, French, and Soviet geologists since the 1960s. Since 2003,

⁹ Biraimé Niang, “Impacts environnementaux liée à l’utilisation du mercure lors de l’exploitation artisanale de l’or dans la région de Kedougou (Sénégal oriental)” (PhD diss. Faculté des Sciences de l’Université de Genève, 2014).

¹⁰ Interview with Author, Anonymous, Kedougou, Mar 26, 2014.

Randgold, a gold exploration and development company of South African origins, has held a gold exploration permit encompassing the *dioura* and village of Tomboroncoto. After discerning that Tomboroncoto did not contain gold deposits for industrial-scale exploitation, Randgold has turned a blind eye to the flourishing of informal extraction on its permit. By working as geological “aides” for Randgold and Toro Gold, current residents of neighboring villages have learned new techniques and expanded their knowledge of the localized mineralization of gold.¹¹

The working life of Madi Kamara, today in his early 30s, is typical of many local men. Madi decided to end his studies after middle school in order to find employment. His father was disabled due to a poorly treated wound infection and. As the eldest son, Madi was expected to financially assist his parents and younger siblings. In 2002, Madi began work as a geological aid for Randgold. He worked with a team of geologists, digging prospecting trenches and marking the presence of outcrops on the landscape that provided clues to geological features underground. In 2006, as the *dioura* in Tomboroncoto began to generate revenues for local households, Madi transitioned full-time into artisanal mining. Since 2013, he serves as the chief of the *tomobolman* in Tomboroncoto. Similar to Sajou Keita, quoted above, Madi is also a *damantigi* and oversees mining teams in Bantaco and Sambaranbugu—a *dioura* introduced further below.

Competitive Extraction

This extended vignette of the parallelisms and relationship between Toro Gold and Tomboroncoto introduces the central argument of this chapter. Today, gold mining in Kedougou, as in many auriferous regions on the West African Sahel, is fundamentally competitive. Since the late 1990s, and building on a much longer history of interaction, corporate and artisanal gold miners have competed for legal access to mineral resources, knowledge about regional geology,

¹¹ Combined, permits held by Randgold and Toro Gold cover the entire CR of Tomboroncoto.

and moral justifications for their claims to the subsoil and distribution of profits from gold. To date, scholars have largely studied artisanal mining in isolation from its industrial counterpart. This gives the impression that industrial and artisanal mining are related only through their structural relationship to global capitalism and mineral prices. More troubling, this scholarly bifurcation reinforces a narrative promoted by African states and mining companies to justify the alienation of land historically mined by local populations: that artisanal mining is primitive, environmentally destructive, and parasitic upon corporate extraction. Further, they argue, corporate mining is more beneficial for national economies and less ecologically harmful.

This chapter pushes beyond such ideological claims making to demonstrate how these mining “sectors”—and their relationship to particular fiscal, social, and ecological risks—have developed within a competitive sphere. In so doing, this chapter generates the contemporary link for a larger argument of this dissertation: artisanal and industrial mining are interrelated components of a single extractive system. Chapter 5 carries this argument through the gold boom of the late 1990s—when the global gold mining industry declared Senegal an “under-explored and “emergent world-class gold belt”—through an uncertain present of declining gold prices.

On one hand, this chapter examines material exchanges of labor and techniques between corporate geologists and artisanal miners. On the other, it tracks arguments elaborated by miners, corporate lobbies, state agents, politicians and regional residents over whether artisanal or corporate extraction is more beneficial for regional economic development and the environment. Arguments promulgated by all parties are rife with contradictions and fortuitous omissions of key events and histories. My goal is not to evaluate the truthfulness of these claims. Rather, I examine how these arguments interact with material and legal struggles to enact a competitive mineral frontier. This chapter challenges a scholarly consensus that corporate gold mines operate

as extractive “enclaves,” largely isolated from local economies and labor. Focusing on the protracted phase of mineral exploration reveals that the enclave is unstable and temporally bounded to the active mining phase.¹² Today there is only one active corporate gold mine and processing mill in Senegal, which is operated by the Sabodala Gold Mining Company, a subsidiary of the Canadian-owned Teranga Gold. “Sabodala,” as it is referred to locally, is an open-pit mining operation adjacent to the village of Sabodala in the northeastern corner of the Kedougou region.¹³ Within the past two years, IAMGOLD (Canadian owned), Bassari Resources (Australian), and Toro Gold (British) have announced discoveries of major gold deposits in the region and have applied to convert their exploration permits into mining concessions. Gold exploration permits cover over $\frac{3}{4}$ of the region of Kedougou, which is a total of 16,896 square kilometers. Within these permits, exploration is carried out from so-called “bush-camps,” which occupy no more than a square kilometer of land. These camps contain housing and a dining hall for employees, usually constructed of converted shipping containers. Other structures include electricity generators, water towers, equipment garages, and geological research laboratories.

Most companies in Kedougou classify themselves as “junior” or “mid-tier” companies, with a focus on exploration and development of gold mines in Central and West Africa (IAMGOLD and Randgold also operate mines or exploration projects in South America). In addition to these large-scale companies, there is a revolving group of roughly two-dozen firms

¹² Nearly a decade ago, anthropologist James Ferguson argued that extractive industries in Africa were the vanguard of emergent forms of global “neoliberal” capitalism. Technological innovations in gold and oil mining, in particular, significantly reduced the need for local labor. After negotiating permits and tax arrangements with host countries, companies operate offshore oilrigs and gold mines as “enclaves.” Equipped with airports, barbed-wire fences, and private security forces, these operations are more closely tied to London, Sydney, or Johannesburg than to surrounding communities. My argument is that this thesis holds only for the extractive (“active”) phase of mining. Exploration activities, which precede and as if often concomitant with extraction, remain deeply enmeshed in local sources of knowledge, labor, and infrastructures. For an elaboration of this point, see Introduction, esp. 25-8.

¹³ Sabodala is the sixth largest company in Senegal and employs just over 1000 people. Roughly 90% of these employees are Senegalese and 40% are from the region of Kedougou.

holding permits for “small mines” (*petite mines*), defined by Senegal’s current mining code, drafted in 2003, as any operation that has the capacity to extract roughly 250 tons of earth per day.¹⁴ It requires substantial capital investments to reach this output level, including bulldozers and industrial-scale generators. In most cases, expatriates or financiers from Dakar partner with local villages to apply for *petite mines* permits. The former provide capital and machinery, while the latter apply for the permit in their name, which significantly reduces tax burdens.¹⁵

There are also a host of firms based in Kedougou that provide sub-contracting services for the mining industry, ranging from camp construction, diamond drilling for gold exploration, geochemical testing, food catering for bush camps, generator installation, and machine repair. At the same time, thousands of regional residents—and migrants from elsewhere in Senegal and neighboring states—engage in artisanal mining in Kedougou, either by digging directly for gold or by selling food, sex, or other merchandise to miners, and organizing transportation across different *diouras* and between *diouras* and larger commercial centers. Although available statistics are unreliable, one survey conducted in 2009 by a project funded by the European Union estimates that at least 50,000 people in Kedougou are involved in artisanal mining.¹⁶ This is a staggering statistic considering that the estimated population of the region of Kedougou in 2016 (a projection based on the 2013 census) is only 166,907 people.¹⁷

The remainder of this chapter moves in two parts. First, I examine the economic, political, and technological factors that converged in the late 1990s to make Kedougou an

¹⁴ Legal Citation of Senegal’s 2003 Mining Code, Chapter 1 (article 20).

¹⁵ *Petite mine* is defined as any mining operations capable of processing less than 250 tons of earth per day using “semi-industrial” or “industrial methods” with no stated depth limitations. These permits can occupy up to 5 square kilometers for three years. There are no depth limitations for *petites mines*.

¹⁶ PASMI reports, DNACPN 2009, ONUDI 2009

¹⁷ Agence Nationale de la Statistique et de la Démographie, ANSD, http://www.ansd.sn/index.php?option=com_regions&view=region&layout=indicateurs&id=9, Accessed April 10, 2016.

attractive frontier for corporate and artisanal gold mining. Drawing on a total of roughly 12 months of field research in Kedougou, I then consider several key domains in which artisanal and industrial mines compete with each other: claims to mineral discovery, the legal sanction to mine, and arguments over whether artisanal or industrial mining is more beneficial for Senegal.

Kedougou: “An emergent world-class gold belt”

In the 1960s and 1970s, most mining industries in Africa were owned and operated by the state or by joint ventures in which the state held a majority share. By the 1980s, most of these industries floundered at the same time as agricultural production suffered from drought, depleted soils, and the evaporation of government subsidies for fertilizer and pesticides. With falling revenue from exports and mounting debt to international lending agencies, the World Bank and the International Monetary Fund pressured African states to adopt a series of reforms to reduce spending, which became known as “Structural Adjustment Programs” (SAPS). SAPS offered some debt relief to states in exchange for massive cutbacks in government bureaucracy and spending on education, health, and road infrastructure as well as more stringent credit policies. Senegal was among the first states in sub-Saharan Africa to adopt SAPS. In 1979, Abdou Diouf, who succeeded Leopold Senghor as Prime Minister of Senegal, introduced an IMF-inspired five-year (1980-1985) to cut government spending and reduce Senegal’s foreign debt. Over the next two decades, Senegal adopted a number of SAPS, culminating in the devaluation of the franc CFA by 50 percent in 1994. But after fifteen years of pro-market reforms Senegal was still saddled by foreign debt, chronic government deficits, and high unemployment rates. Agricultural production was in decline and real rural incomes were lower than at independence.¹⁸

¹⁸ For a concise overview of the impacts of structural adjustment reforms of Senegal’s economy, see Gellar Sheldon, *Senegal: An African Nation Between Islam and the West* (Boulder, 1995), esp. 55-83.

It was in this context that the Senegalese state began to re-evaluate the role of its mineral resources in national development. In fact, the World Bank encouraged states across sub-Saharan Africa in the 1990s and 2000s to revitalize their mineral sectors. In a landmark study published in 2003, *Strategy for African Mining*, the Bank encouraged African governments to shift their role from one of “owner-operator” of mines to one of “promoter-regulator” of a private mining industry.^{19,20} Since African states lacked the capital for mineral development, *The Strategy* argued, they should focus on attracting “new high risk capital from foreign mining companies.”²¹ *The Strategy* epitomized World Bank recommendations in the 1980s and 1990s to African states to emphasize foreign direct investment in the exploitation of Africa’s natural resource sector.

Prices for gold, iron and copper were also on the rise in the 1990s. Mali and Guinea emerged as major new gold producers, largely due to investments from Anglophone mining companies.²² By 1999, gold replaced cotton as Mali’s top export.²³ Senegal’s third president, Abdoulaye Wade (2000-2012) promoted mining through foreign investments as a key pillar of economic growth in Senegal. Wade kept this promise. Shortly after entering office he called for “international partners” to develop Senegal’s mineral potential. Wade’s campaign centered on exploiting the gold reserves of Kedougou, then a department of Tambacounda.²⁴ Under the tutelage of World Bank advisors, in 2003 Wade’s administration adopted a highly liberalized mining code that “new role of the state in the promotion, regulation, and control of the Senegalese mineral sector.” To attract foreign investors, the code offers total exemption from sales tax and customs duties on imports (including fuel) during exploration.

¹⁹ Campbell, *Modes of Governance*.

²⁰ World Bank, *The Strategy for African Mining* (Washington, DC, 1994), esp. 10.

²¹ *Ibid*, 10.

²² On comparative developments in the gold mining industries of Guinea and Mali, see Faty Mbodj, “Boom aurifère et dynamiques économiques entre Sénégal, Mali et Guinée,” *EchoGéo*, 8 (2009).

²³ Mali now trails South Africa and Ghana as the third largest producer of gold in sub-Saharan Africa.

²⁴ *Le Soleil*, March 23, 2005.

The 2003 code also includes a legal framework for artisanal mining by Senegalese citizens. Two factors shifted this policy disposition in the 1980s. During the Sahelian famines of the 1970s and early 1980s, West African states reconsidered the role of artisanal mining as a source of income for rural income. Further, with massive cutbacks in state spending on agriculture, and declining employment opportunities, it became politically untenable to outlaw artisanal mining entirely. Following major regime changes in the 1980s, Senegal, Guinea, and Mali all drafted new mining codes, which included provisions for artisanal mining as a source of “rural development.” By the 1990s, the World Bank was pressuring these states to “clarify” artisanal mining rights so that they would not compromise industrial mining investments.

Under Senegal’s 2003 Mining code, citizens could qualify for an “artisanal mining” (*exploitation artisanale*) permit of up to 50 hectares of land for a period of two years. *Exploitation artisanale* is defined as “extracting and concentrating mineral substances and recuperating the resulting products using manual and traditional methods and procedures” up to 15 meters in depth.²⁵ Few citizens applied for this permit until 2007, when a project funded by the European Union assisted artisanal miners with the formalities. Several villages acquired permits, but the bureaucratic procedure was cumbersome and required capital beyond the means of most residents of Kedougou. The permitting structure also mapped poorly onto the social structure of artisanal mining, leading to conflicts in villages that held permits collectively. In 2013, the state revised the legal framework for artisanal mining—a point I return to below.

Senegal’s 2003 Mining Code succeeded in attracting foreign investors to Kedougou, particularly “junior” Anglophone gold exploration companies. There were several reasons for this. The gold mining industry was globalizing in scope in the 1980s and 1990s. As deposits in more conventional mining countries became depleted and more costly to extract, mining

²⁵ 2003 Mineral Code, Title 5, “Exploitation Artisanale et Petite Mine,” Articles 33-44

companies based originating from Canada, the United States, Australia, and South Africa began to branch out into Africa, South America, and Papua New Guinea. Senegal was attractive because its mineral sector was so “under-exploited” in the words of a major consultancy firm employed by the Senegalese state to assess its mineral potential in the early 2000s.²⁶ Further, some of these companies already operated mines across the border in Mali where, by the late 1990s, geologists had announced the discovery of 60 million ounces of gold reserves. There was optimism that similar discoveries awaited in Senegal, which occupied the same geological belt.



(Figure 27: Cyanide heap-leaching pit managed by Burkinabe migrants, Tinkoto, Senegal, 2014
Photo Courtesy of Aliou Bakhoum)

Junior companies also proliferated in the 1990s and 2000s because technological changes reduced the industry’s reliance on a large local labor force. Open-pit mines began to replace underground operations, such as those on the South African Rand. Bulldozers replaced laboring

²⁶ Mintech International, *Schème Directeur sur le Secteur Minier du Sénégal Pour La Période 2001-2006*, for the Ministère des Mines de l’Industrie et de l’Artisanat (Septembre 2001).

men. Chemical processing of rock also grew in sophistication, recuperating more gold from lower-grade ores that were historically unprofitable for exploitation. Further, global logistics and catering services made it possible to furnish “bush camps” with “First World” amenities in parts of the world—such as Kedougou —previously deemed too remote for such services.

Rising gold prices in the 1990s also attracted Kedougou’s residents to the subsoil.²⁷ Artisanal mining was growing rapidly across sub-Saharan Africa in the 1990s, for reasons tied to metal prices and deepening rural poverty.²⁸ In countries with large mining industries, such as South Africa, Zambia, and Ghana, employees downsized from mining companies transitioned into informal extraction. The increased availability of certain technologies and chemicals--portable generators, water pumps and gold detectors as well as mercury and cyanide--also expanded the types of deposits that could be profitably exploited on a smaller-scale.

In Senegal today, most villages that engage in artisanal mining have mined gold for generations as a dry-season complement to agriculture or during times of drought. Since the mid-2000s, in particular, many households have transitioned to mining and processing gold for much of the calendar year, compromising their participation in agriculture. It is now estimated that artisanal mining, and commercial and transportation services tied to it, produces the primary source of cash income in the region of Kedougou. With the intensification of mining, the cost of food and other basic goods has risen markedly, and services previously rendered through exchange or out of respect for kin and neighbors have become increasingly commoditized. At the same time, artisanal mining has allowed many rural households to achieve a material lifestyle more akin to that of urban Senegal. In the recent past, only bureaucrats and households with family members in Europe could purchase motorcycles and second-hand cars, or aspire to

²⁷ Between 2000 and 2012, the global price for gold multiplied by a factor of five. Gold prices in Kedougou’s artisanal mines peaked in 2008 and 2011.

²⁸ See Introduction, esp. 27-33.

replace mud-and-thatch huts into durable concrete buildings with rooms of children and guests. Many *orpailleurs* now achieve these milestones (see Chapter 6 and Conclusion). Artisanal mining communities have also benefited from hosting migrant populations, even as growing “stranger” populations have generated concerns over social change, sexually transmitted disease, and insecurity. Most migrants to Kedougou are from auriferous of Mali, Guinea, and Burkina Faso and live as “guests” in specific households in Kedougou--their “hosts” (*njaatigilu*). While some migrant have intermarried or established independent households in Kedougou, most live in Kedougou for a portion of the year and return to their permanent households elsewhere.

Transnational migrant miners have facilitated technological transitions in artisanal mining in Kedougou. Historically, most artisanal mining in Kedougou was focused on alluvial concentrated along river-ways or in desiccated riverbeds. Locally, this form of mining is called *nada*, a Maninkakan term describing an auriferous layer of sand. The mining of lode ore is called by the French term *filon*, which refers to gold veins embedded in hard rock. Most artisanal miners agree that local populations did not mine *filon* in Kedougou until the 1980s. (As mentioned in earlier chapters, some populations in Guinea and Burkina Faso have mined *filon* for centuries). Several *filon* deposits were discovered and mined by regional residents during the droughts of the 1980s, when several families settled the village of Tinkoto. During this time period, Bambo Cissokho, Tinkoto’s first chief, traveled to western Mali to recruit three expert *filon* miners. These Malian *orpilleur* accompanied Cissokho back to Tinkoto, where they spent several years training local miners to locate and extract *filon*. As *filon* mining descends to far greater depths than *nada*, the Malians trained local men in methods for reinforcing these shafts

with wood, called *balan* in Maninkakan (specialists in this technique are *balandula*).²⁹ As underground caverns expanded, so did profits. The *balan* technique spread to other *diouras*.

Filon mining is dangerous and physically demanding. It also demands more post-extraction processing than *nada*. After excavation, hard rock needs to be pounded and pulverized in order to free gold from the minerals to which it is amalgamated. This dust can then be washed using traditional *nada* methods--the panning style calabash method. Since the 1990s, many women in Kedougou use wooden sluices lined with coarse rugs that traps heavy gold particles in the heavy fibers, while allowing sands and silts to wash away. *Filon* required the expansion of mining teams from one to two men or a husband and wife team to up to eight or more people who rotated the arduous work of digging underground at significant depths. *Filon* tunnels can reach up to 30 or 40 meters underground (depths are limited by carbon monoxide emissions underground). Since the introduction of *filon*, many miners have specialized their techniques. In larger *diouras*, some teams specialize in digging vertical shafts and others dig underground caverns after the placement of the wood by a team of *balandula*. In short, *filon* requires more expertise, more labor and, depending on the obduracy of the rock, mortar-pickers and dynamite.

These technological shifts have also altered social dynamics in Kedougou's *diouras*. *Filon* allows rural compounds to expand by incorporating visiting cousins, brothers, elders, children, and migrants into one of the many steps for processing gold. The incorporative logic of *filon* has a number of social benefits, as outlined by Filv Keita, an *orpailleur* in his early 50s:

Filon is more beneficial than the *nada*. I can give rocks to my mother, my brothers. If I crush my rock, I can give a portion to my wife to treat. And she will earn her *dépense* (daily expenses). She will make her *dépense* without asking me.³⁰

²⁹ Interview with Author, Moussa Traoure, Tinkoto, Feb. 5 & 26, 2014

³⁰ Interview with Author, File Keita, Tinkoto, Feb. 6, 2014 & Feb. 11, 2014

Filon has also facilitated the incorporation of migrant into Kedougou's households. There are two general categories of migrant miners in Kedougou. The largest category of migrants arrives in Kedougou with only their labor power to sell. These migrants join local households by pounding *filon* rock by hand (in cast iron mortar and pestles) for their *njaatigi*. In exchange, their Senegalese hosts provide food, lodging, and payment in unprocessed rock. The second category of transnational migrants have capital either directly or through a "boss" back in Burkina Faso, Mali, or Guinea. These migrants travel from their countries of origin with machines. They seek *njaatigi* who will host them and their machines. *Diouras* in Kedougou throb with the sound of diesel generators operating one of two styles of upright machines—mechanical jigs, such as the one pictured below—or rock crushers. Residents "host" rock crushers directly in household concessions and mechanical jigs in their fields, which require direct water source and create tailings. Machine operators earn money by charging individual miners a set rate for crushing or washing a bucket of auriferous rock or sand. Some migrants pay a monthly fee to their *njaatigi* or their host village to operate the machine. In exchange, the *njaatigi* negotiates with local authorities on behalf of the migrants, as these machines occupy an ambiguous regulatory zone.

There are several reasons why migrants, and not Senegalese, own the machinery used on Kedougou's *diouras*. For one, until the recent gold boom, most households in Kedougou's mining zones were cash poor. They relied on what they cultivated and hunted, and some labor migration, for income. With proceeds from the mines, most families invest first in building concrete households, purchase motorcycles, and pay for their children to pursue education in Kedougou, Tambacounda, and Dakar for university. Few families have adequate revenues after these expenses to invest in machinery. Import taxes are also much higher and internal commerce is more tightly controlled in Senegal than in neighboring countries. Further, many migrants

traveling with machines come from established gold mining regions where local communities have been using and purchasing these machines abroad for years before their introduction into the region of Kedougou. Finally, Kedougou is a remote and sparsely populated region with poor access routes. Senegalese armed forces and administrators are thin on the ground. As a result, certain artisanal mining communities have thrived with little regulatory oversight. By contrast, the Malian and Guinean army notoriously police and seize goods from *diouras* within their borders. In Kedougou, *orpailleurs* from across West Africa found a lax regulatory environment.



(Figure 28: Mechanical jig operated by a transnational migrant, Tomboroncoto, Senegal, 2014)

This complex mosaic of migrants, machinery and expertise has generated complex technical hierarchies that map onto national affiliations in Kedougou's diouras. Senegalese men, the customary land owners in Kedougou, largely work as chiefs of mines (*damantigi*). They recruit sons, junior cousins, and young men from the locality as well as migrants from Guinea and Mali to labor on their teams. Senegalese women manage households, which double as gold processing mills. Women also dominate in the commercial sector around these mining sites—selling food, clothing, and piece-meal services for laundry and washing gold for male miners who are unmarried or who travel to the *dioura* without their wives, sisters, or daughters.

Migrants also play a dynamic role in peddling chemicals in the *dioura*. Mercury was first introduced to Kedougou by Malian migrants in the 1990s, and continue to dominate the trade. Malian traders (*dioula*) set up small shops in Senegalese *diouras*. They purchase gold by the gram, weighing it on mechanical balances, and sell small packets of mercury to miners. Most of Kedougou's gold is sold in Bamako and then resold to traders in Dubai, Delhi, and Antwerp. Over the past five years, migrants from Burkina Faso have introduced cyanide heap leaching into Kedougou's *diouras*. Attaching pushcarts and wagons to the back of motorcycles, they collect the tailings produced by women after washing and amalgamating gold with mercury. The Burkinabe reprocess these tailings in cyanide pits, installed in the fields of their *njaatigi*, extracting fine gold particles that escape mechanical washing by hand, machines, and mercury amalgamation. Informal use and sale of mercury and cyanide present massive ecological and human health concerns. At the same time, they have made it possible for artisanal miners to profit from certain gold deposits and tailing -considered “waste” or uneconomical to mine with

the use traditional mechanical methods.³¹ Chemical use is also tied to *filon* mining. *Nada* does not require mercury amalgamation or cyanide leaching because nature, through millennia of weathering, has already “freed” gold from surrounding rock. Many continue to practice *nada*, either exclusively or alongside *filon*, but the broader regional transition from *nada* to *filon* is largely responsible for the rapid expansion of family compounds to include migrants, expertise, machines, and chemicals from across West Africa. Moreover, because *filon* rock can be easily stored and processed later in the year, it has allowed people to extend rock processing further into the rainy season, intensifying competition between agricultural and mining activities.

As this section hopes to make clear, artisanal and industrial mining both rely on transnational forms of expertise, machinery, and variable regulatory environments. Both “sectors” and innovative and respond to global market conditions as well as fluctuations in employment opportunities and extractive economies elsewhere. Below, I examine how artisanal and industrial miners compete in Kedougou for the legal sanction to mine and to defend their claims to first discovery of gold deposits now slated for extraction by mining corporations.

Competitive Discovery

In Senegal both artisanal and industrial miners accuse each other of pirating the others’ gold discoveries. This section delves into several case studies, but first reviews general features of gold exploration that inform the character of these accusations. As documented in Chapters 2 and 3, since the colonial period, it has been standard practice for state geologists and private prospectors to use artisanal mines as “indexes” to guide exploration activities. This took place in many parts of the world—not just Africa. However, the antiquity of gold mining in West Africa,

³¹ Independent studies document high levels of anthropogenic mercury in the soils of Kedougou’s *diouras*. This is a global problem. Mercury contamination is the primary focus of journalistic coverage of artisanal mining as well as non-governmental intervention in the sector. See Niang, “Impacts.”

its distribution across a vast territory, and the French state's unique legislation of *orpaillage*, meant that the interaction of geologists and artisanal miners was both intimate and dense. Even today, it remains common practice for geologists conducting gold exploration for private companies to map artisanal mining zones and sample their pits.³² I interviewed the head geologists for the largest exploration firms active in Kedougou: Teranga Gold, IAMGOLD, Bassari Resources, and Toro Gold. All of these geologists are Senegalese men, and most of them received their education at the Institut des Sciences de la Terre at the Université of Dakar in addition to some training in France or specialized apprenticeships within different industries. According to all of these men, they were trained to map artisanal mines as baseline indexes—to gain an aerial view of different gold and iron mineralization in a given zone.

However, the value of artisanal mining to corporate gold discoveries is highly variable and unpredictable. For one, as discussed in the introduction and in Chapter 3, most artisanal miners historically exploited alluvial deposits. Since the late 1990s, larger companies prospect for *filon* deposits of a minimum of one million proven ounces in reserves. But since the weathering of *filon* produces alluvial deposits, geologists sometimes discover *filon* by tracing alluvials back to their source. Is this an appropriation of an indigenous gold discovery? To assess this question, the specific geology and extractive history of the region matters a great deal. The argument made by artisanal mining communities is that these companies would not even be in these regions, prospecting in the first place, if local residents did not actively mine the region. Even this case is hard to prove, but most geologists agree with this general statement.

Compared to many parts of the world with a long history of industrial extraction—the American West, Australia, Canada, South Africa, Zimbabwe—southeastern Senegal has been

³² For a recent examples of exploration within *diouras*, see Toro Gold, Accessed April 20, 2016, [http://www.torogold.com/controllers/files/TGL_News_Release_Group_Exploration_Update_\(May_2013\)_\(Exe\).pdf](http://www.torogold.com/controllers/files/TGL_News_Release_Group_Exploration_Update_(May_2013)_(Exe).pdf). For Bassari Resource's see <http://www.bassariresources.com/sambarabougou.html>.

subject to relatively few geological surveys and intensive prospecting campaigns. Companies request exploration permits for hundreds of square kilometers (thousands in the case of Teranga Gold). Even with radiometric survey data it is impossible to systematically survey all of this territory. Geologists rely on a number of different indexes and techniques for narrowing exploration. Geologists sample termite mounds (termites bore hundreds of meters underground in search of water and bring to the surface samples of underlying soils in their feces) and map and measure rock outcrops that provide glimpses into the geological structure of the zone. Once geologists have identified a propitious zone for more detailed prospecting they employ subcontractors to diamond drill core samples of the earth (such as the drill pictured in the opening of this chapter). Finally, geologists commission laborers to dig exploration trenches to sample and conduct geochemical and geophysical analysis of soil and rock samples from these sites. Exploration trenches are similar to artisanal gold mining pits, but more rectangular in shape. They allow geologists to take cross-sections of the soil to sample for concentrations of different minerals and their depositional histories. In other words, sampling artisanal mines is one of a suite of techniques used during the early exploration phases. Any one of these techniques—but more likely a combination of them—can lead to the discovery of a profitable gold deposit.

The historical participation of local populations in colonial and independence-era mineral missions further complicates mutual accusations of the pirating of gold discoveries. As argued in Chapters 3 and 4, not all of the mining companies operating in Kedougou make claim to new discoveries. Some of them have purchased, through private bidding wars, the exploration portfolios of companies who conducted exploration in the zone and from state mineral missions. Most of the open-pit gold mines cut into the soil of states of the former French West Africa since the 1990s were revitalized “shelf projects” discovered and documented during the late colonial

and early independence period. It was only after the first wave of open-pit mines was opened for exploitation that companies furthered their exploration efforts to feed their mills with more ore.

This was the case for the Sabodala gold deposit, which has a profoundly multi-vocal history of exploration and state intervention. According to elders from Sabodala and the neighboring villages of Momokhono and Bambaraya, their fathers and grandfathers mined this site for alluvial gold. They guided French, Soviet, and Swiss geologists to local *diouras*. Senegalo-Sovietique conducted the most detailed study of the deposit in the early 1970s. In the 1980s, the French parastatal, Bureau de Recherches Géologiques et Minières (BRGM), expanded upon this research.³³ In the mid-1980s, as part of a broader project to promote known mineral deposits in Senegal for private investment, Senegal's Direction of Mines and Geology created a state owned enterprise known as the "Societe Miniere de Sabodala" (SMS) and signed a joint venture agreement with BRGM to exploit the deposit. After a pre-feasibility study for the project in 1988, BRGM retreated from the joint venture. In 1992, the state discussed collaborating with a junior Australian company, PAGET, to exploit Sabodala, but then tabled the project. In 1994, President Abdou Diouf convened a special inter-ministerial council to discuss the promotion of Senegal's industrial gold potential. Based on committee recommendations, SMS decided to develop the project with a national operator by the name of La Société d'Etudes et d'Exploitation Industrielles Minières et Commerciales de l'Or (Eeximcor). After recruiting private investments and receiving a loan from a state agency, Eeximcor built a processing mill at the Sabodala site. In contrast to the Phosphate mines in Thies and Dakar, Eeximcor employed only Senegalese technicians and laborers. In 1998 Diouf ordered the closure of Eeximcor on accusations of gold smuggling and violation of the terms of its permit. Eeximcor's employees and managing director

³³ By 1981 BRGM declared that there was a reserve of at least 17 tons of gold at Sabodala. The same year BRGM also announced the discovery of reserves at Kerekunda, Massato, and Sutuba.

were expelled, their equipment abandoned. After re-appropriating Sabodala from Eeximcor, the state opened the exploitation of Sabodala to private bidding. Another junior Australian company, Mineral Deposits Limited (MDL), won the contract for Sabodala in 2005 and MDL poured its first gold bar in 2008.³⁴ At the same time, the state accorded a 230 km² gold exploration permit encompassing MDL's Sabodala permit to Oromin, a Canadian exploration company.³⁵ In 2010, less than two years later, MDL sold its shares to Teranga Gold Corporation, which was created to acquire MDL. In 2012, Teranga also acquired the permit of Oromin. Teranga Gold is now the largest single holder of exploration permits in Senegal, totaling roughly 1000 km² of land.



(Figure 29: Woman viewing an exploration trench dug by Toro Gold, Senegal, 2014)

³⁴ Further exploration drilling began in June 2005, and the exploration permit was converted to a concession in 2007. MDL built a renovated camp, a gold mining mill, and poured its first gold bar in 2009. 9 June 2005, exploitation permit is delivered to MDL by the decree 2005-520

³⁵ Oromin's research camp was based in the village of Madina Sabodala.

This brief history of the shifting ownership and permitting rights of Sabodala is one example of the multi-vocal histories of discovery and labor attached to mineral deposits on the Western Sahel. While Teranga Gold and its predecessor, MDL, generated new knowledge about the scope and mineralization of the Sabodala deposit, they relied heavily on research from earlier projects.³⁶ And this “baseline data” was produced in part by collaborations with *orpailleurs* and mapping of local *diouras*, both active and abandoned. Similar stories could be told about gold deposits Mali and Guinea that are currently exploited by multi-national companies. To signal one prominent example, the largest open-pit mine in Guinea, which is operated by Anglo-Gold Ashanti in the region of Siguiri, occupies the village of Kentinian. This was the village where several generations of French colonial geologists attempted to “improve” local *orpaillage* techniques while simultaneously documenting the gold discoveries of local gold miners.³⁷ Similar to companies in Senegal, Anglo-Gold Ashanti has mapped and later exploited gold at depths to which “traditional” mining techniques could not reach. Yet the initial “discovery” of this depositional complex was guided by the activities of artisanal miners. These ore bodies are haunted by multiple claims of discovery and expectations for returns on extraction.

It is within this complicated history—one that local residents remember and recount—that I place accusations of “theft” of gold deposits in contemporary Kedougou. With this context in place, I now turn to accusations of direct appropriation of gold discoveries. Examples include accusations by Randgold’s geologists that artisanal miners from Tinkoto of “digging out” exploration trenches where the company’s geologists had discovered gold. By contrast, residents of Hara Henna, a village located close to the border of Mali, claim that a French-owned company, Africa Gold, acquired a *petite mine* permit aligning precisely with the *dioura*

³⁶ Abdou Latif Coulibaly, “La Nébuleuse autour du Sabodala,” *La Gazette*, 2003.

³⁷ <http://www.anglogoldashanti.com/en/About-Us/Regionsandoperations/Guinea/Pages/default.aspx>

discovered and actively mined by residents of Hara Henna. Below, I elaborate at some length on conflicts between an Australian gold exploration company, Bassari Resources, and the village of Sambaranbugu, which was the largest *dioura* in Kedougou during my research in 2013 and 2014.

Bassari Resources and Sambaranbugu

Alex McKenzie, an Australian and the executive director of Bassari Resources, describes the company he founded as a “family business.” Bassari Resources Limited is a gold mining company incorporated in Australia and listed on the Australian Securities Exchange since 2008. Bassari’s headquarters in Dakar does have a different feel than other gold companies active in Senegal. The company occupies the top two floors of a building in a busy residential area. A family, also the landlords of the building, occupy the first floor. By contrast, most mining companies rent sterile, hastily constructed buildings in one of Dakar’s most exclusive commercial neighborhoods, Les Almadies. Bassari employees share afternoon meals together, typical Senegalese dishes served family style on a veranda. Many employees have worked for Alex for years and Alex, himself, has been active in Senegal’s mining sector for two decades. He worked with the Australian company Mineral Resources Development to win the bid for the Sabodala mine project, and was involved with the Grand Cote zircon mineral sands project, which recently became an active mine. Most executive directors of mining companies in Senegal fly in and out of Dakar every few weeks—their lives are based elsewhere on the planet. Alex lives most of the year in Dakar with his, who is Senegalese, returning to Australia on occasion.

Bassari’s image is more complex in Kedougou, however, where the company holds interests in three exploration permits that cover a total of 790 km².³⁸ Relationships with the village of Duuta, which borders Bassari’s main exploration camp, have soured. At issue is the

³⁸ Bassari’s permits are called Moura, Sambaranbugu and Bounsankoba.

right of Duuta and other villages in the area to mine a lode ore rock deposit known as Makabingui, which is adjacent to another village, called Sambaranbugu. In 2012 Bassari announced the discovery of a gold deposit called Makabingui totaling at least one million ounces, within their Samaranbugu permit. Since then, artisanal mining of the Makabingui deposit has expanded to unprecedented scales. The deposit is unusual, because the auriferous lode ore protrudes directly on the surface and is unusually dense. Hand picks cannot perforate the surface, only mortar-pickers and dynamite. Bassari plans to mine Makabingui as an open-pit mine, similar to the mine operated by Teranga Gold at Sabodala. In its economic feasibility plan for the mine, Bassari planned on deriving profits to cover the initial construction and operation of the mine from lode ore extracted at shallow depths--that is, at depths also reached by local miners.

Bassari claims that their geologists discovered the *filon* deposit at Sambaranbugu and that, prior to the company's discovery, the population of Sambaranbugu and Duuta only mined alluvial deposits. The company claims that local residents only began exploiting the Makabingui deposit after observing, and then digging out, the exploration trenches dug by Bassari's geologists. Residents of the village's of Sambaranbugu and Duuta tell a different story. At its origins, they argue, Sambaranbugu was strictly a *dioura*--mined by Duuta and other villages. They recount chief of the village of Medina, a small hamlet near Duuta, opening the *dioura* several generations ago. Residents of the provinces of Dentila, Missirah and Beledougou came to the *dioura* during the dry season to mine *nada*. According to elders in Sambaranbugu, the initial *nada* site mined of Sambaranbugu is adjacent to the *filon* deposit currently mined by the population. The site was called "big rocks" (*yaafiberebala*).³⁹ The population readily admits that they did not begin mining *filon* in Sambaranbugu until 2011. Purportedly, a young man from the village by the name of Male Savane discovered the rock in the same year. Male had spent time

³⁹ Interview with Author, Demba Cissokho, Sambaranbugu, March 12, 2014.

working in *diouras* in western Mali and a large *dioura* in Senegal called Diyabougou to the north of Sambaranbugu. According to his father, Male's experience mining *filon* elsewhere [...]

...pushed him to look, and it is like that that they found the *filon*. Our youth, they came here and did research. They had already done the *filon*. They spent one year in Diyabougou. They did their research. And it is like that that they discovered the *filon*. Sambaranbugu and Diayabougou resembled each other.⁴⁰

Several people confirmed this story. Others were more vague in their rendering of events, but insisted that Bassari simply “finished” work the population had already begun: “Even where they are now [Bassari]. It is us that did the first test pits there. They just came to complete this work.”⁴¹ But I also heard another interpretation of the discovery of *filon*, one that suggests more ambiguity in the relationship between Bassari's discoveries and that of the local population.

My son, he researched his line between two lines of Bassari. And it is like that, that we started to work in the lines of Bassari. But, since we took out the *filon* in the lines. They [Bassari] also, well before then they took out lines in our old *dioura*. They had a plane that controlled their line. But God made it that they came across the *dioura* of our grandparents. They buried our old *diouras*, and made their mine and trenches. It is like that we started to work together. And they, they asked us to move from our *dioura*.⁴²

“Lines” refers to exploration trenches (such as the one pictured above). In this account, Male discovered *filon* by searching between (but not directly in) the exploration trenches of Bassari. This version of events is also quite plausible because exploration trenches can be significantly spaced out across a given research however. However, this account refutes the version of Male discovering *filon* at Sambaranbugu before the geological team of Bassari resources. Nonetheless, as this second version suggests, even if the local population discovered *filon* in the wake of Bassari Resource's exploration, Bassari clearly superimposed on local *nada* mines. This leads to another intriguing element of the saga between Bassari and Sambaranbugu. Bassari actually

⁴⁰ Ibid.

⁴¹ Interview with Author, Ibrahima Cissokho, Duuta, Apr. 8, 2014

⁴² Interview with Author, Baka Cissokho, Sambaranbugu, Apr. 13, 2014. See also

began its operations in Senegal processing alluvial deposits—*nada*—in the historical *dioura* of Duuta. At that moment, Bassari called themselves “Duuta Alluvials.” At the time, the company hoped to use the proceeds from the alluvial operation to finance *filon* exploration. The project proved less lucrative than hoped and Bassari abandoned it once they recruited enough venture capital to finance exploration of *filon*. In other words, Bassari underwent a transition similar to that of local artisanal miners: from mining *nada* to mining *filon*. A number of miners I interviewed in Duuta and Sambaranbugu emphasized this point, arguing that they had a right to “take” some of the Sambaranbugu *dioura* because Bassari “took” their *dioura* at Duuta.

When the company [Bassari] came they went and worked with us on the river [*nada*]. They found us in the river and they worked with us there. They recruited people from the village. Three mille [3,000 CFA a day]. People asked for higher wages, the company said that was all they had. Youth started going to Sambaranbugu, we began to search, and we found a mountain [*filon*]. Once we started to get to the rocks, they came and closed our *damans* [mining shafts]. So they found us there and said they were going to displace us.⁴³

This account justifies the right of the population to exploit *filon* on the grounds that Bassari displaced them from their *nada dioura*, and that the company did not pay residents higher wages to work at Duuta Alluvials. Bassari’s executive director and head geologists say the evolution of research at the Sambaranbugu site was unequivocal: the population did not begin mining *filon* until after Bassari began exploring the zone. However, it is equally true that Bassari chose to work in this zone due to the promising indexes generated by artisanal mining activities. In sum, Bassari’s claim of discovering Makabingui becomes ambiguous when placed within this history.

By late 2011 the *dioura* of Sambaranbugu had grown into the largest artisanal mine in Kedougou, on which thousands of migrants from Guinea and Mali labored. Senegalese *damantigi* from Tinkoto, Tomboroncoto, Mako, Bambaraya, and Momokhono recruited teams to work the *dioura*. In many *diouras* the *filon* is deep underground, invisible to the eye, there was a

⁴³ Interview with Author, Dembou Cissokho, Sambaranbugu, Apr. 12 & 17, 2014.

risk of a mining team missing the rock altogether. Where *filon* protruded at the surface of the earth in Sambaranbugu, striking gold was guaranteed. But Sambaranbugu required investments in equipment, diesel to power generators, and dynamite to perforate the recalcitrant top layer of rock. These factors made mining Sambaranbugu expensive, and attracted financiers from Dakar, Bamako and Conakry who invested in tools, diesel, and food and lodging for mining teams in exchange for a portion of recuperated rock. It was also the most dangerous *diouras* in Kedougou. Men lost their lives underground because of misplaced dynamite or while trying to steal rock recently blasted by dynamite. According to the director of Bassari security, a retired Senegalese police officer, the company's small security force feared they could no longer ensure the safety of geologists digging exploration trenches and diamond drilling near the Makabingui deposit.⁴⁴

Beginning in 2011, Bassari began intensively lobbying “the state”— *gendarmes*, the Ministry of Mines, the Ministry of Environment, and the President of the Republic—to close the *dioura* of Sambaranbugu. In early 2012, the *gendarme* based in Kedougou accompanied several bulldozers to Sambaranbugu at night. They gave artisanal miners working the site two hours to collect their tools and machines from inside mining shafts before they bulldozing shut dozens of pits and trenches dug by the “local” population and their migrant guests. According to artisanal miners working at Sambaranbugu at the time, the bulldozers buried expensive equipment, including diesel generators used to pump water out of portions of the *dioura* flooded by water. Some miners insist that several migrant miners from Guinea were buried alive: the “trace” of their disappearance a series of makeshift huts, filled with belongings, that fell into disrepair. The chief of Sambaranbugu says the relatives of the disappeared men visited from Guinea. Of course, people “disappear” for a number of reasons in the *diouras*, and occasionally by choice. Some are

⁴⁴ Interview with Author, Diba Moussa, Geologist, Bassari Resources, Kedougou , June 2014; Interview with Author, Alex Mackenzie, Executive Director, Basari Resources, Dakar, May 2015.

buried during the mundane work of digging underground. Others use their labor in these mines as a pivot to transition into a new life or to migrate further afield in Africa or beyond.

Within several months of the informal closure of the *dioura* of Sambaranbugu, artisanal miners began to return—first under the cover of night and then during the full light of day. Bassari reignited their lobby, this time threatening to take legal action against the state. The photograph gracing the first page of this chapter played a key role in this campaign. A geologist took the photo in 2013 at the *dioura* of Sambaranbugu. It features a team of technicians operating a diamond drill in the foreground and artisanal miners in the background.⁴⁵ During my field research in Kedougou, numerous government authorities and representatives of mining companies showed me this photograph to evidence the threat posed by artisanal miners who, in the words of one geologist, are “eating the cream from the top of our target deposits.”⁴⁶

Bassari Resources included the photograph in letters addressed to the Minister of Mines, the Minister of the Environment and even the current President of Senegal, Macky Sall. The letters asked authorities to close the *dioura* of Sambaranbugu where, they argued, artisanal miners prevented the “legal permit holder” (Bassari) from safely exploring for gold. During this lobbying effort, Alex Mackenzie insisted on calling artisanal miners “illegal miners” or simply “illegals,” going so far as to correct authorities who used the more benign terms of *orpailleur* or artisanal miner in email exchanges.⁴⁷

Teranga Gold, IAMGOLD, and Rand Gold joined Alex’s campaign. At the same time as Bassari resources was “at war” with artisanal miners at Sambaranbugu, several new *diouras* sprang up on Teranga’s permit. The Canadian company claimed these new miners were the result, as in Sambaranbugu, of local populations expanding exploration trenches dug by the

⁴⁵ Depending on the rock, diamond drills can extract rock samples up to 1000 meters underground.

⁴⁶ Field notes, April 2014.

⁴⁷ Alex Mackenzie generously allowed me to review some of the correspondence from this campaign.

company's geologists. The most controversial *dioura* within Teranga's research permits belonged to the village of Diakhalin, who openly admit to having opened the dioura within Teranga's exploration trenches. However, similar to arguments elaborated by artisanal miners in Sambaranbugu, they argued that Teranga had also profited from discoveries of alluvial deposits made by Diakhalin's current residents, and earlier generations, within the same zone. Village representatives also deplored Teranga for disrespectfully driving 4 x 4's through their fields and perforating their land with diamond drill bores and exploration trenches. As one elder argued, "we are tired of our food tasting like dust"—referring to the cloud of dust that hovers above these villages, kicked up by the constant cycling of company vehicles through the site as they explore for gold in the area.⁴⁸ In their eyes, residents of Diakhalin had a right to profit from Teranga's exploration campaign because Teranga also profited from their land.

Prior to these conflicts with artisanal miners, there was no formal corporate mining lobby in Senegal. But coordination among some of the major companies in the zone to pressure the state to take action created the impetus for one—which is now legalized. This lobby "won," so to speak, a round of debates, pushing the state to actively "secure" corporate property claims. In April 2014, Macky Sall ordered Senegalese armed forces to close several *diouras* where artisanal miners were mining deposits corporations planned to mine on an industrial scale. The next section explores the micro-politics of these closures as a starting point for a much broader theme: how artisanal and corporate miners compete for the state's legal sanction to mine.

⁴⁸ Interview with Author, Toumani Toure, Momokhono, March 16, 2014.

Competing for the Legal Sanction to Mine



(Figure 30: The “artisanal mining corridor” for the *dioura* of Hara Henna, Senegal, 2014)

In April 2014, Macky Sall spent three days in the region of Kedougou for an inter-ministerial meeting.⁴⁹ These decentralized meetings are part of Sall’s campaign to “bring the state closer to the people” and an occasion to discuss the specific needs of regions. Sall, a mining engineer, spent considerable time in Kedougou in his previous career as the Minister of Mines from 2001-2003. Under the presidency of Abdoulaye Wade, these were the years in which Senegal liberalized its mining code and welcomed new investors from Australia, Canada, South Africa, India, and Brazil to explore for gold, iron, zircon, and construction materials. During his time as Minister, Wade made frequent visits to the research camp of MDL at Sabodala and visited some of the artisanal mines multiplying in the region as global gold prices began to rise.

On the agenda for Sall’s 2014 visit to Kedougou was the expansion and remodeling of

⁴⁹ Mahamadou L. Barro, “La déclaration du Président Macky Sall après sa visite a Sabodala (Kédougou), *Sudestinfo.com*, April 17, 2014.

several provincial health posts, the construction of a bridge over the Gambia River at a point only accessible by ferry, and the paving of several roads in the region's interior. The president also communicated his hope that industrial gold mining would connect Kedougou, a region long "behind," to the rest of Senegal.⁵⁰ Re-organizing Kedougou's *diouras* was also a priority. The *diouras* had been in the national press for several cases of gun violence. Sall chose his words carefully on the point of the *diouras* framed them as a security problem for the region of Kedougou. "From now until the end of May," Sall announced in one public meeting, "we are going to resolve the problem of insecurity in the zones of *orpaillage*." Several days later, the Prime Minister delivered a speech on the "situation" of the *diouras*, stating that the government planned to "reinforce" the security in these places by the "organization of mixed patrols."⁵¹

The politicians kept their word. Later in the month, Sall ordered over 500 Senegalese soldiers to drive a fleet of bulldozers from the bustling capital of Dakar to Kedougou. Regional authorities were sent to "warn" villages of the closures two days before the bulldozers arrived. For three days, the same regional authorities guided soldiers to several of the region's largest *diouras*. The director of the environment and parks in Kedougou led a single bulldozer to cyanide pits his staff had carefully catalogued over the course of several months. At gunpoint, soldiers restrained protesting crowds as they accused authorities of "eating the sweat of the poor." Sobbing women claimed their children would starve without profits from the mines. At several *diouras*, elderly women from the surrounding villages stripped themselves naked to shame the armed forces—hurling insults at the operators of the bulldozers. Heads of artisanal mining households accused the state of depriving them of their "traditional" right to mine.

⁵⁰ Ibid.

⁵¹ Ibid.

State representatives called this a “security campaign” (*campagne de sécurisation*) and declared on national television and radio that they were ensuring public security and protecting the environment, “closing the *diouras*” and encouraging people to “return to farming.”⁵² National news outlets covered the closures by surveying the “seizures” made by the gendarme and the army during the campaign: generators, bags of gold, toxic chemicals, unlicensed alcohol. As one news program boasted, “there is no more space in the compound of the gendarme.” The state of Senegal, the broadcast continued, “has reminded Kedougou that this is a state of law.”⁵³

Contra prominent news coverage of the event, armed forces did not close all the *diouras* of Kedougou, however, only those in direct competition with corporate geological research or “eating” into deposits slated for corporate extraction. The *diouras* in this category and the companies with which local miners competed, included: Sambaranbugu (Bassari Resources) Diakhalin (Teranga Gold), Hara Henna (Africa Gold), and portions of Bantaco (Randgold). Behind closed doors, the “security campaign” was a profound compromise between a corporate mining lobby and the desire of high-level officials (perhaps even the president) to reform *orpaillage* while leaving it open as a pathway for some of Senegal’s poorest residents to generate an income. In June of 2013, a year prior to the 2014 closures, the Ministry of Mines released a new decree regulating artisanal mining. As related to me in interviews, the Ministry of Mines was cognizant that the pathway to legalization for artisanal mining in the 2003 code—“*exploitation artisanale*”—was financially and bureaucratically beyond the reach of most artisanal miners in Kedougou.⁵⁴ The decree of June 2013 stipulated that only Senegalese

⁵² *Radio Television Senegal*, “Les jeunes au coeur des DAC,” November 10, 2014. See also Soly Bourama Debo, “Les orpailleurs de Kedougou voteront sanction après la fermeture des sites,” *Radio Television Senegal*, May 18, 2014.

⁵³ *Radio Television Senegal*, “Organisation des couloirs d’orpaillage traditionnel dans la region de Kedougou, June 2, 2014. Accessed January 16, 2016. <https://www.youtube.com/watch?v=Js0UsEm1tRI>

⁵⁴ Interview with Author, Babacar Diouf, Direction des Mines et de la Géologie. Dakar, Apr. 2, 2013

nationals could apply for an “artisanal mining card” (*carte d’orpailleur*) to mine for gold within “corridors” (*couloir*) delimited by the Ministry of Mines. All gold mined within these corridors had to be sold to the state. Posters offered advice on how to apply for these cards.

Leading up to the closures of 2014, the Ministry of Mines entered into negotiations with the largest gold exploration companies in Kedougou. They agree to close the *diouras* that posed a direct threat to corporate property. In exchange, they asked companies to dedicate a portion of their permits to “couloirs.” Other informal lobbies shaped the global positioning points (GPS) of the corridors. The current regional Director of the *Ministre des Mines et de la Géologie* (DMG), Lamine Sy, and a geologist based in Kedougou who frequently consulted with artisanal miners, Cheikh Diop, lobbied the state to recognize, in the law, certain *diouras* managed by villages that had made concerned efforts to formalize and organize through pre-existing legal frameworks. The state was placed in a difficult situation because exploration permits covered the entirety of known auriferous zones in Kedougou. In the words of one official in the DMG, “we had to ask the companies to give us back a portion of what we had already given away.”⁵⁵

By June of 2014 the state released the GPS coordinators of the newly designated corridors and began processing thousands of identity cards for artisanal miners. In most cases, the coordinates aligned with pre-existing *diouras*. In effect, this new law sanctioned a complex mosaic of historic negotiations between particular geologists and villages that agreed to respect “no go” zones within corporate permits in exchange for the right to mine other parcels.

Artisanal miners are quick to argue that they are “weak” compared to companies and the state. As I elaborate below, they often compare the paucity of their machinery to those of *toubabs* (Euro-Americans) as evidence of their lack of power. There is no question that artisanal miners in Kedougou are relatively poor, many are illiterate, and they live and work far from

⁵⁵ Interview with Author, Alioune Sarr, Direction of Mines and Geology, Dakar, June 2014

corridors of state power. At the same time, artisanal miners are an important lobby that the state also courts. This is evidenced by the fact that high level government officials felt it was politically unviable to close the *diouras* of Kedougou altogether—a proposition put on the table by the corporate mining lobby. In Kedougou’s largest and most established *diouras*, there is a near-constant circulation of government agents and politicians. For mining sites that are illegal, or precariously and unevenly legalized, these spaces are far closer to state authorities than most rural spaces in Senegal. Government officials often collect bribes from villages in exchange for turning a blind eye to a host of illegal activities that flourish even within legal corridors.

Others solicit the assistance of the *tombolman* (the private security force of the *dioura*). Politicians ask *diourakuntigi* to support their campaigns in exchange for lobbying the state to keep their *dioura* open. Such negotiations are exemplified in a story I heard repeated throughout my field research in Kedougou concerning the visit of the Ministry of Mines to Kedougou in 2012. This was during the presidential campaign between Macky Sall and incumbent Abdoulaye Wade. The Minister arrived by plane, landing on the airstrip of the Sabodala mine. As is typical, he spent the day touring the mining operations at Sabodala. In the late afternoon, however, he boarded the vehicle of the sub-prefect of Sabodala to travel to Diakhalin. At the time, Diakhalin was one of the largest *diouras* in Kedougou and located within Teranga Gold’s exploration permit. In early 2012, under pressure from Teranga Gold, the *gendarme* of Kedougou came to close the *dioura*. The police rented a bulldozer from a Senegalese sub-contractor who leases equipment to gold exploration companies in Kedougou. The population greeted the *gendarme* with a spontaneous uprising. Elderly women stripped themselves of their clothing and attacked the *gendarmes*. Young men encircled the official vehicles—shaking and lifting them from the ground. Overwhelmed, the *gendarmes* retreated. College students in Dakar and children of multi-

generational farmer wrote the Senegalese president on behalf of their parents. They wrote that neither they, nor the region of Kedougou, would vote for him in the upcoming election. When Wade's Minister of Mines arrived in Diakhalin, he assured the population that "the state was there for them" and had no intention of "closing down Diakhalin." Diakhalin's residents interpreted the visit as a formal sanction of their *dioura*. Wade's successor, Macky Sall, did not inherit this promise. Sall ordered Diakhalin's closure during the "security campaign" of 2014.

Yet, despite the violence and haste of the closures, they represented a compromise between the demands not only of corporate interests, but also artisanal gold miners. They were the latest node in a deeply historical debate over rights to gold in Kedougou that is ongoing.

Moralizing Extraction, Imagining Co-existence

In Kedougou today, there remains considerable disagreement within different villages and households over whether corporate or local extraction of gold is more beneficial for the economy, ecology, and social life of the region of Kedougou. The influx of mining companies in Kedougou in the late 1990s and early 2000s generated hope of employment for rural households, particularly for "youth" aspiring to transition out of subsistence agriculture. But pessimism of these prospects grew after a violent protest-turned-riot in 2008 over employment in Kedougou's industrial mines, which the Senegalese armed forces violently repressed (see Chapter 7). Most men can earn more informally extracting gold than through formal employment as day laborers and geological aids for gold exploration companies. Due to low literacy and education levels in the heart of auriferous zones, only a few households can benefit from formal employment opportunities that require advanced literacy, among other skills. In this context, many residents argue that "work in the dioura" (*dioura baara*) is far more beneficial. *Dioura baara* is also

praised for the flexibility and autonomy it affords and the income it generates for village projects such as mosque construction, electric grids, and the purchase and repair of deep bore wells.

Below are several reflections from *orpailleur* in Kedougou in the wake of the 2014 closures.

The first two quotes are from residents of Sambaranbugu, which was closed definitively in 2014, the third is from an elder in Bambaraya, located within Teranga's permit.

We prefer the *dioura* to the project [companies]. For the project, you are in the bush from dawn until dusk. All they pay you is 3.000 CFA. They take you into the bush and leave you there. You hear nothing. You see no one. You spend all of the day there, in the bush. Can you support a family on 3 mille [CFA]? It is impossible. But from the *dioura* you can eat.⁵⁶

We count on agriculture and *orpillage*. It is you who knows how much you have when you cultivate. With *orpillage* you dig the *daman* [mining shaft] and you know how much you will have in the *daman*. But all of the projects [companies] that come here, everything is a deal, an arrangement. They will find a way to put you behind.⁵⁷

Actually, with Teranga Bambaraya here, there are only 2 people who work here. 2. This is what makes us afraid, very afraid. And if the state leaves our gold that we can work. We prefer that. We prefer that to the projects. Because these projects, all of our children cannot work in these projects. During 5 years, there are only 2 people who work in the project. In all the village. What can you hope to have more than that?⁵⁸

These quotes reference a desire to retain control over their means of production—*diouras*.

Further, these men argue, *diouras* supports income generation for a broad range of people, not only educated and relatively young men and women who are formally employed in the mines.

The public relations branches of corporate mines, as well as private security forces, geologists, and managers, argue that “formal” mining brings far more benefits to the locality. Companies argue that they follow labor and environmental laws that are flagrantly ignored by artisanal miners—ensuring that extractive regions can be “restored” for future use as farming or pasturage land. The industrial sector, they argue, generates opportunities “around” the mines,

⁵⁶ Interview with Author, Buraye Cissokho, Sambaranbugu, March 12, 2014.

⁵⁷ Interview with Author, Mahamdi Cissokho, Sambaranbugu, March 13, 2014.

⁵⁸ Interview with Author, Juma Moussa Cissokho, March 29, 2013.

including sub-contracting, formal commerce, and renting lodging to migrant miners. Moreover, companies argue that the taxes and duties they pay to the Senegalese state far outweigh the benefits of artisanal mining, which the state has not found a way to effectively tax.⁵⁹ Through “corporate social responsibility” (CSR) programs, Teranga Gold, Toro Gold, Randgold, and Bassari are financing other activities. These include infrastructure for irrigated gardens managed by women’s groups, deep-bore wells, school extensions, and HIV/AIDS and malaria prevention health campaigns. Residents of auriferous zones certainly appreciate these needed investments in infrastructure and public health, but they do not see these projects as equivalent to or compensatory for the loss of their right to mine for gold. Artisanal miners draw on stories of their shared labor with these mining companies: of clearing the land and constructing geological camps when these companies were still “small”—a few geologists working out of 4 x4 trucks and reliant on the good will of surrounding villages. Residents argue that companies owe them for this hospitality and their investment in sweat equity to the success of formal mining camps.

They have tried to buy our conscience. We are not stupid. They can say that they are helping our school with paint or call the mason to fix cracks in the school. But they cannot say that it was them that constructed the school. Because the school is here for over 50 years. What I want to say about this is that it is a purchase of conscience (*haakili suunaa*). I would say, what they have done for the school, we cannot even call it respect (*bunya*) because what they research it is much more valuable than this school. For us, we want that they leave us this land it is better than supplies for the school.⁶⁰

⁵⁹ Much more could be said about these debates over taxation. Currently, many African states are revising their mining codes to secure more tax revenue from mining companies on the grounds that the mining code revisions of the late 1990s and 2000s were too liberal and deprive African states of necessary revenues, particularly during the exploration process and during the early years of the operational mine. Currently, many gold mining companies in Mali, Guinea, and Senegal are essentially exonerated from taxes for the first 5-8 years of the life of the mine (many mines only have a life of 10 years). In this case, the only profits returned to the state are through royalties and illegal kickbacks to government officials.

⁶⁰ Interview with Author, Mama Saliou Diallo, Duuta, May 9, 2014

Finally, artisanal miners argue that companies and the state “owe” them for stealing their mineral discoveries—a point explored in Chapter 4. Consider the words of Tumbi Cissokho. He worked for several independence-era missions and his sons currently labor as artisanal miners.

Oromin dug a deep bore well. Teranga gave our children school supplies. The mosquito net above my bed, it was from Ternaga. This is not the same as what we have given them. They stole the dioura where my father and grandfather mined. It was Demba Cissokho who opened that dioura. The state says this is for the benefit of Senegal. But they are not taking the land of all of Senegal. Bambaraya, Momokhono, Diakhalin is taken. We have seen the papers. We know the state gave it away.⁶¹

For much of the twentieth century, the label of “artisanal” miner or *orpailleur* came with negative connotations, such as primitive, customary, wasteful, and illegal. Thus, there is some irony to the fact that artisanal miners draw on the characterization of *orpaillage* as “small-scale” and “traditional” to defend their right to mine, even within corporate permits. In interviews on national media and in meetings with corporate representatives, artisanal miners often argue that their tools prevent them from digging to the same depth as corporations, which, in their eyes, opens up opportunities for co-existence--for sharing gold deposits with corporations.

We are poor. We work with picks and shovels. We can only dig to 15 meters and this will not affect what the mining companies search. They search deposits hundreds of feet underground. Our materials and the materials of the *toubabs* (white people). They are not the same. We have the *soli* (pick). And they, they have the materials of patrons. With those who search deep and those who search on the surface, is it the same thing?⁶²

Only white people have machines that allow them to know if there is gold deep in the ground. Rand Gold has researched all over this area with their machine. But we don't know if they are going to install a company. We don't think so. After all, they have been here for so long already. But only machines can do that. Black people only have their hands and force. It is all luck for us, but white people can know what they are digging for. Sometimes Rand Gold will tell us what they find. Sometimes people find out. But most of the time we are just there digging. A hand cannot know what a machine knows.⁶³

⁶¹ Interview with Author, Tumbi Cheikhou Cissokho, Monokhono, Mar. 29, 2014

⁶² Interview with Author, Mahamadi Cissokho, Sambaranbugu, March 13, 2014

⁶³ Interview with Author, Oussenou Traoure, Mako, Feb. 25, 2014

We would like the mining companies to leave a small parcel, so that people could survive, a little bit. Perhaps, we can negotiate with them. Because it was them that have the papers, because they are already formalized. Please leave us a piece so that we can survive. What we can work with our hands and what the mining company needs, are not the same. The company has needs of tons and we only need a few grams. We do not dig more than 50 meters even if it is deep. And the companies dig up to 100 meters or more. I am not a geologist, but that is what I understand.⁶⁴

In these quotes, artisanal miners compare the capacities and tools of artisanal and industrial miners. They accuse corporations of greed and suggest how companies could alleviate this by accommodating artisanal miners without compromising their profits. It is true that artisanal miners are limited in the depth they can dig. However, my interlocutors were also selective about the tools they described using. While *orpailleur* in Kedougou continue to use hand picks, many also use dynamite, rock crushers, mechanical jigs, mortar-pickers, cyanide leaching and mercury amalgamation. The subterranean release of carbon monoxide does limit the depth to which artisanal miners can dig--up to 50 meters at most. But within this depth, artisanal miners now use methods similar to those of “industrial” companies to mine for gold. The use of tools varies widely from one site to another. For mining companies, it is largely a question of luck whether the gold deposit they seek and locate are accessible to artisanal miners. This poses a real quandary for mining companies and state authorities, including those who seek a genuine compromise between the interests and claims of artisanal and corporate actors to the subsoil.

⁶⁴ Interview with Author, Aliou and Moussa Diallo, Momokhono, Jun. 12, 2014

Conclusion

Kedougou, like many regions on the West African Sahel, is a competitive mining frontier. Historically, artisanal miners in Kedougou collaborated with state geologists and private prospectors to map the region's mineral deposits. Scientists from Senegal, Switzerland, the USSR, France, Australia and South Africa have learned about Kedougou's subsoil by tracking and mapping artisanal miners and sampling their informal mining shafts. This practice continues into the present, although its ultimate economic value to corporate geologists is variable. Corporate and artisanal miners debate over first discovery of deposits and compete for the patronage of the state to back their claims to the subsoil. All parties draw selectively on history to make claims on minerals and, in the case of artisanal miners, to defend illegal activities.

These debates are active and evolving. In recent years, artisanal miners in Kedougou have picked up the language of corporate social responsibility programs. Customary mining authorities, such as *tombolman* and *diourakuntigi*, justify their extractive practices based on their contributions to community "development." The village of Tomboroncoto, with which this chapter began, is an interesting case in point. Following the 2013 closures, the Ministry of Mines designated Tomboroncoto as an "artisanal mining corridor." Formerly, the village was located within the permit of Randgold, whose permits still border Torogold's to the west. During community meetings with Torogold and in interviews I conducted, a diesel-powered generator came to play a surprising role in the justifications made by the village for their *dioura*.

The generator was installed in Tomboroncoto by the Senegalese state in the 2000s as part of a rural electrification program, but it fell into disrepair within the year. Purportedly, a regional official was "eating" the funds allocated by the state for the generator's monthly diesel allotment. In 2013, the *tombolman* of the Tomboroncoto *dioura* paid a mechanic to refurbish the generator

and to rewire it to all major household concessions within the village. The *tombolman* paid for the repairs, and for the diesel required to illuminate the generator each night, by taxing migrant miners a sum equivalent to \$25 US a month. With this informal tax revenue, Tomboroncoto is now electrified. Sajou Keita, the chief of the *tombolman* in Tomboroncoto, refers to the generator as evidence, on one hand, of the state's corruption in the zone; and, on the other hand, of Tomboroncoto's capacity for self-development through gold mining revenues. In his words:

We already have electricity in Tomboroncoto. And it was not the state or a company that brought it here. It was us [pointing to self]. Gold has developed Tomboroncoto. Gold made the generator run again. There was not a zinc roof in Tomboroncoto before gold. If you take that away, you take the rice out of our bowl. I would like to be employed in your mine. I would like my brothers to be employed in the mine. But my family cannot eat your promises. They eat the gold I mine with my own hands.⁶⁵

The chief of the *dioura* (*diourakuntigi*) of Tomoboroncoto further argued that tax revenue generated from Tomboroncoto's goldfields was far more accountable to villagers than the resource rents paid by corporations to the state, of which the village has seen no benefits. Indeed, the electric grid was a recurring motif in interviews I conducted in Tomboroncoto and in other villages who desired to make similar grids. As long as it remains the only source of light in Tomboroncoto, the generator taunts corporations and the state to prove to the region that industrial mines will provide more benefit to Kedougou than artisanal ones. The developmental language used by residents to discuss the benefits of gold mining also makes a declaration of comparability with corporate mines on grounds that are moral as well as material. Tomboroncoto is making an argument for self-determination through the use of Kedougou's subsoil.

It would, however, be inaccurate to classify Tomboroncoto's village-level electric grid as a sort of "local development." While the generator is powered by gold mined from the locality, the primary revenue generation of the village comes from taxing transnational migrants and their

⁶⁵ Interview with Sajou Keita, Tomboroncoto, Mar. 3, 2014

machines. When this informal tax revenue runs low, villagers can barter gold rock for diesel from regional politicians. Similar to the state itself, the village profits by allowing transnational capital to exploit gold in exchange for resource rents. Like the corporations with whom Tomboroncoto competes for a legal and moral legitimacy to mine, their extractive operation draws on transnational networks of labor, expertise, and patronage to turn gold into liquid assets.

CHAPTER 6

Golden Bones: Spirits and Ethnicity Underground



(Figure 31, Artisanal mining pit, Tinkoto, Senegal, 2013.
Photo courtesy of Aliou Bakhom)

Introduction

The twin blossoming of artisanal and industrial gold mining in Kedougou has introduced profound social and political turmoil to a border region that has long occupied the economic and cultural margins of the Senegalese state. The growing importance of extraction to Kedougou's economy has unearthed debates over property rights, both informal and formal, and the uses to which minerals should be put. In Kedougou these debates focus on two primary axes. The first

concerns what I consider “public” debates over the rights of agrarian communities to mine for gold in the context of the progressive enclosure of Kedougou corporate exploration permits (Chapter 5) and protests against state corruption related to employment and rents in the mining industry (Chapter 7). Chapter 6 examines a more intimate realm of debate, unfolding in villages and in households, over the following questions: Who among Kedougou’s diverse resident and migrant population has a right to extract gold? Can gold mining be a moral activity?

Similar questions animate debates about extraction around the globe. Laboring underground is morally ambiguous. Mining is destructive; it drains non-renewable resources. In contexts where people rely on farming, hunting and collecting much of what they consume, mining often competes with these productive activities. Mines are highly gendered spaces, where boys become men through testing their physical boundaries and engaging in new kinds of consumption and forms of socialization. Extractive communities are notoriously places of mixture and violence, where sex and hospitality are commoditized. In many parts of the world, mining is considered both ritually as well as physically dangerous. Miners live in proximity to nonhuman worlds of spirits and the underworld, outside of the more controlled rhythm of life “on the surface.” For this reason, the historiography and ethnography on mining has long attended to the relationship of extractive labor to ritual, spirits, gods, and the afterlife.¹

Recent ethnographic studies of artisanal mining have attended to the relationship of extraction to popular debates over spirits and the morality of wealth from the underground.

These studies examine the unstable ontological status of money in artisanal mines, which is

¹ For example, see Michael T. Taussig, *The Devil and Commodity Fetishism in South America* (Chapel Hill, 1980); June Nash, *We Eat the Mines and the Mines Eat Us: Dependency and Exploitation in Bolivian Tin Mines* (New York, 1993); and Elizabeth Emma Ferry, *Not Ours Alone: Patrimony, Value, and Collectivity in Contemporary Mexico* (New York, 2005). For a comparative analysis of ritual practices in mining and smelting, see Mircea Eliade, *The Forge and the Crucible* (Chicago, 1962). The reader can also refer to citations on studies of ritual in African mining and smelting in Chapter 1.

described as “hot” “bitter” and “wild” in informal emerald and gold mines.² These accounts describe miners, merchants, and the authorities of underground labor sharing beliefs about “hot money” in Burkina Faso or rituals to propitiate “the devil” in the mines of South America. In the artisanal mining literature, “coltan miners” in the Democratic of Congo or “diamond miners” in Angola appear to share a lexicon of the ritual dangers of extraction and the moral ambiguity of wealth created from working underground. These studies compare beliefs and practices “in the mines” with those of the surface, often based around agricultural activities.

I draw insights from these studies of spirits and polluted money in artisanal mines, but my interest lies outside of these frameworks. The reader will recall from Chapter 1 that gold mines on the Western Sahel are also saturated with the sacred—with spirits (*jinne*), goblins (*gotto*) and Nininkala, the master spirit of the region’s goldfields. However, understandings of the relationship between gold, miners, and the otherworldly are not stable, nor are they unitary on the *diouras* of southeastern Senegal. Rather, artisanal miners, merchants, and farmers draw on different religious and ethnic traditions to debate why “luck” in gold mining, and even the location of gold deposits, is unevenly distributed across the landscape and different social groups. Stories about *jinne*, in particular, are best understood as resources for debating the morality of wealth created from extraction and the ethno-religious “essence” of different categories of people who work in the *diouras*. *Jinne* stories, I argue, are part of an evolving

² On Madagascar, see Andrew Walsh, “‘Hot Money’ And Daring Consumption in a Northern Malagasy Mining Town,” *American Ethnologist* 30:2 (2003), 290-305. On Burkina Faso, see Katja Werthmann, “Cowries, Gold and ‘Bitter Money’: Gold-Mining and Notions of Ill-Gotten Wealth in Burkina Faso,” *Paideuma* 49 (2003), 105-124. On the DR Congo, see Filip De Boeck, *Domesticating diamonds and dollars: identity, expenditure and sharing in southwestern Zaire (1984-1997)*, In *Globalization and Identity: Dialectics of Flow and Closure* (Oxford, 1999); Jeffrey W. Mantz, “Improvisational Economies: Coltan Production in the Eastern Congo,” *Social Anthropology* (2008) 16: 1, 34–50; James Smith, “Tantalus in the Digital Age: Coltan Ore, Temporal Dispossession, and “Movement” in the Eastern Democratic Republic of the Congo,” *American Ethnologist*, 38:1 (2011). On Mongolia, see Mette M. High, “Polluted money, polluted wealth: Emerging regimes of value in the Mongolian gold rush,” *American Ethnologist*, 40: 4 (2013), 676-688.

“discursive field,” a concept originally coined by Michael Foucault to describe the social context in which discourse and meaning making are embedded. Similar to Pierre Bourdieu’s concept of “social field,” “discursive field” describes the larger contexts in which discussions, decisions, and actions take place. Importantly, these concepts challenge the notion that there are such things as ethnic, cultural, or social “wholes” that operate in isolation from each other. Discursive fields draws attention to the fact that practices attached to specific groups are created through debate and interaction with opposing positions—in other words, they are products of dialogue. Further, this concept accounts for the capacity of ideas to evolve through debate and across time. Certain “beliefs” about gold in Kedougou are rooted in a temporally deep logic of extraction and the underworld found across the West African Sahel (Chapter 1). At the same time, understandings about extraction change as new groups of people make claims to the subsoil and as artisanal miners increasingly compete with industrial or corporate mining interests in Senegal.

The primary locus of debate examined in this chapter concerns profound local anxieties attached to the uneven transition of gold mining from the nearly exclusive domain of Maninkakan speakers to the primary economic activity of a host of ethno-linguistic groups in Kedougou. This transition is both ethnic and religious in nature. Historically, Mande ritual authorities dominated gold mining in Kedougou—as they did in goldfields of across Guinea, Mali, and Burkina Faso. In fact, mining was so closely associated with Mande traditionalist religious practices that historically Muslim groups in Kedougou, particularly the Diakhanke and the Fulbe, associated gold mining with paganism and characterized it as ritually unclean (*haram*). The droughts of the 1970s and early 1980s began to change the historic opposition of Muslims to gold mining. During this period of hardship, Fulbe and Diakhanke men informally apprenticed with Mande neighbors to learn basic mining techniques—often assisting with the

“women’s work” of operating a pulley system on the surface as Mande men labored below. With the rising price of gold in the late 1990s and 2000s, an increasingly diverse range of people entered gold mining. And, as detailed in Chapter 5, the intensification of artisanal mining as a primary economic activity has introduced a number of changes in household labor organization and technology.

This transition is also ritual in scope. For one, the gold boom has coincided with a growing number of Mande converting to Islam in Kedougou. While conversions have accelerated across the twentieth century, several pockets of Mande villages in Kedougou did not convert to Islam until quite recently. With the entry of long-standing Muslim groups into gold mining, such as the Fulbe and Diakhanke, and the rapid conversion of Mande groups, many residents now challenge the Mande ritual practices historically associated with the *dioura*—particularly the propitiation of *jinne*. Mande in Kedougou have long argued that “gold is in the hands of the spirits” (*jinne ye sano bolo*) and *jinne* require blood sacrifices made in their name to release gold to human hands. Increasingly, however, many argue that “gold is in the hands of God” (*jinne ye Allah bolo*), insisting that sacrifices be made in the name of God and follow Qur’anic prescriptions. This argument exists in tension, however, with the trenchant insistence by some Mande traditionalists that only those who follow the “way of tradition” (*chosan sila*) can acquire wealth from gold. *Jinne* narratives can be used to question the religious authenticity of gold miners. Muslims that succeed in the mines risk being accused of performing non-Muslim sacrifices in secret, to propitiate the *jinne*. In other contexts, traditionalists deploy *jinne* narratives to shore up claims to their right to govern and profit from Kedougou’s *diouras*. For example, many ethnic Mande—who self-identify as traditionalists or who claim to maintain “one foot in Islam and one foot in tradition”—argue that their intimate relationship with *jinne*,

cemented through performing sacrifices at traditional shrines (*jalan*), justify their claims to preside over Kedougou's goldfields. In some cases, Mande have attempted to appropriate the management of *diouras* in Fulbe villages on the grounds that Fulbe lack the ritual knowledge to render the *dioura* fertile and safe for the community of miners. Much is at stake in these debates in a region where the status of many Muslims is precarious; where conversion to Islam is recent for many households and their historic affiliation with "traditionalism" is publically known.

Debates about gold and *jinne* are not only a mode of creating ethnic divisions. In a geographic context in which artisanal miners frequently move across *diouras* in Guinea, Senegal, Mali, and Burkina Faso, *jinne* narratives produce a set of coherent and mobile rules and prohibitions that travel with miners. *Jinne* narratives warn about the physical dangers of subterranean work and the ritual dangers of stealing from humans and spirits alike. *Jinne* grow angry and conceal gold if miners quarrel or if one miner steals from another. *Jinne* also condition the rhythm of subterranean labor. Miners are prohibited from mining on Mondays when *jinne* emerge to roam the surface of the earth. In some *diouras*, *jinne* prohibit mining at night, which forces miners to rest as well. If a *dioura* is plagued with discord or violence, *jinne* will make gold disappear altogether and render the mine sterile. In sum, *jinne* narratives generate a structure of rules, norms, and regulations that pertain across time and space, even if the local features of these institutions vary. To this end, *jinne* narratives are shared by people across lines of ethnic, linguistic, or religious difference and assist customary institutions in incorporating migrant miners into "local" *diouras* across multiple nation-states. Yet within the micro-politics of specific places, *jinne* narratives and ritual practices can reify ethno-religious boundaries and exclude the entry of certain groups into the governing institutions of the *dioura*.

The remainder of this chapter examines these micro-politics, exploring what different and competing ritual engagements with the *dioura* reveal about broader tensions in Kedougou over where different ethno-religious groups are perceived to “sit” on a spatiotemporal spectrum between Islam (mobile, universal) and traditionalism (rooted, local).³ Residents of Kedougou are quick to confirm the universalism of Islam—“a Muslim is a Muslim.” In practice, proximity to either Islam or traditionalism is often cast in more ethnically focused terms. I first generate a schematic overview of the prevailing ethno-religious “spectrum” in Kedougou. I then detail the major arguments surrounding gold mining in Kedougou as it relates to ethno-religious affiliation. Finally, I introduce the reader to three *diouras* with divergent engagements with ritual practices and the underworld: Tinkoto, which is governed by Mande traditionalist institutions; Kanoumering, a historically Muslim Fulbe village that now operates a *dioura*; and the Diakhanke village of Samecouta where a *dioura* was opened in 2011 amidst controversy.

Ethno-Religious Boundaries in Kedougou

This section briefly synthesizes some of the histories of settlement and ethno-religious mixture in Kedougou, formerly Upper Gambia. Some of this ground is covered in Chapter 1, but elaboration is needed to elucidate arguments made further below. In most villages in Kedougou, a clear ethno-religious majority is discernible, earning the village a reputation as primarily Diahanke, Mande, Fulbe, Tenda, and so forth. Ethnic homogeneity within villages contrasts with the fact that villages of different ethnic affiliations live in proximity to each other. Thus, from an

³ My conceptualization of a spatiotemporal spectrum is strongly influenced by anthropologist Janet McIntosh’s research on Swahili Muslims and Giriama “traditionalists” (many of who have converted to Islam) on the Swahili Coast of Kenya. In particular, see Janet McIntosh, *The Edge of Islam: Power, Personhood, and Ethno-Religious Boundaries on the Kenya Coast* (Duke: Duke University Press, 2009).

aerial view, the broader pattern is a mosaic of different ethnic, linguistic, and religious groups co-habiting the landscape. From a regional perspective, Mande and Fulbe are clear majorities. In most cases, clusters of Diakhanke, Tenda, and Djallonke villages intersperse Mande and Fulbe dominated zones. The hierarchies that structure inter-ethnic relations in Kedougou reflect a pattern of political discourse that is widespread on the West African Sahel. This is one of complementary opposition between those who claim to be “owners of the land” (autochthones, first-comers) and those associated with a “newcomer” (incomer) status. As in many other contexts in West Africa, newcomers in Kedougou often have more wealth than “owners of the land,” although they recognize the jurisdiction of the latter over special forms of ritual knowledge tied to the natural world. As anthropologist Peter Geschiere describes for Cote d’Ivoire, newcomers are “often proud to have come in from elsewhere [...], yet the ‘chief of the land’ formed (and still forms) a ritual counterpoint.”⁴ Similarly, in a historical ethnography of ethnic formation in southeastern Guinea, Mike McGovern argues that “landowners” derive authority and establish claims to autochthony through their ability to negotiate successful relationships with spirits, bound by sacrifices to land spirits. Autochthony, as defined by McGovern, is the “relation of a particular territory with a defined group of persons with rights in the territory.”⁵ As McGovern importantly points out, claims to first-comer status may be fictive, but sacrifices to land spirits can reinforce and naturalize this claim over time.

Similar dyads of complementary opposition operate between “first comers” and “incomers” in Kedougou. Mande, Tenda, and Djallonke clans are typically identified as first comers and, relatedly, these groups have historically practiced different forms of traditionalist

⁴ French ethnologists and administrators in West Africa described first-comers or “people of the land” with the term “*autochtone*.” Much literature on Francophone West Africa uses the English gloss autochthon to describe claims to first-comer status. Peter Geschiere, *The Perils of Belonging: Autochthony, Citizenship and Exclusion in Africa and Europe* (Chicago, 2009).

⁵ Mike McGovern, *Unmasking the State: Making Guinea Modern* (Chicago, 2012), chap. 4.

religious practices. In the past, all three groups believed in an Almighty God, but one that was in communication with other gods, spirits, and otherworldly creatures and forces. Clans propitiated these forces at shrines (*jalan*). As detailed in Chapter 1, clans in pre-colonial Kedougou established claims to a given territory through repeated sacrifices to *jinne* at clan shrines. With time, these sacrifices converted the territory of the *jinne* into that of the clan. By contrast, ethnic Fulbe and Diahanke are considered “incomers” in Kedougou.⁶ According to most settlement narratives and archival accounts, Fulbe and Diakhanke clans, most of who migrated to Kedougou in the seventeenth century or later, were already Muslim upon their arrival. During the eighteenth and nineteenth centuries--the height of the trans-Atlantic slave trade--Fulbe, in particular, attempted to forcibly convert Tenda and Mande “firstcomers” to Islam. However, this violence was the exception to the rule of the relatively symbiotic settlement of incoming groups in territories under the ritual jurisdiction of firstcomers. Settlement narratives describe ritual agreements forged between incomers and newcomers. These stories typically begin with a male member of a Djallonke, Tenda, or Mande clan entering an exchange relationship with a *jinne* by turning a close relative or child over to the *jinne*. In exchange, the *jinne* accorded this man and his descendants’ proprietary access to the *jinne*’s territory. In turn, firstcomers brokered access to the land and other natural resources to incoming groups, who often offered religious services (this was particularly the case for Diakhanke clerics) in exchange for access to farmland. Most often, Fulbe and Diakhanke groups recognized firstcomers as legitimate “owners of the soil.”

The two most common complementary dyads in Kedougou are Diakhanke incomers who settled in proximity to Mande first-comers and Fulbe migrants who settled among different Tenda firstcomers (Beliyan-Bedik and Beliyan-Bassari). Both Fulbe and Diakhanke clans settled

⁶ To some degree, ethnic Wolof are grouped into the category of “incomer.” Wolof migration to Kedougou is far more recent than that of Diakhanke and Fulbe and subject to a very different set of tensions and concerns related more to regional inequality within Senegal than to ethnicity (see Chapter 7).

among Djallonke first-comers. In most cases, Fulbe and Diakhanke established mosques and Qur’anic schools in their own villages, while Mande, Djallonke, and Tenda maintained relationships with *jinne* by making sacrifices to clan and village specific *jalans*.

Fulbe and Diakhanke clans in Kedougou—even those who have lived here for centuries—rarely claim Kedougou as their ancestral homeland. Rather, they point to a history of mobility as Muslim clerics with strong connections to Islamic centers of learning in Guinea, Mauritania, northern Senegal and, in some cases, to North Africa and the Arabic peninsula.⁷ By contrast, Mande, Djallonke, and Tenda claim Kedougou as home and root their identity “in the soil,” a claim established through stories of pacts forged between their ancestors and *jinne*. Historically, Fulbe and Diakhanke looked down upon the traditionalist practices of first-comers, fashioning themselves as more civilized and intelligent than ethnic groups with more nativist orientations. Below is a highly schematic table of the major ethnic groups in Kedougou and their historic religious affiliations. This chart is meant to guide the reader in a confusion history of ethnic and religious conversion, settlement, and complementarity in Kedougou. There are many exceptions to these categorizations, which are simplified here.

Ethnic Group	Settlement history	Religious affiliation
Diakhanke	Incomers	Muslim
Fulbe	Incomers	Muslim
Mande	First-comers (incomers in some contexts vis-à-vis Tenda)	Muslim/ traditionalist
Tenda	First-comers	Christian/ Muslim/ traditionalist
Djallonke	First-comers	Muslim/ traditionalist

⁷ Small numbers of Fulbe migrated to the region since the sixteenth century, but most families today trace their arrival in the zone to the nineteenth century. Many Fulbe migrated to Kedougou during the 1960s, 70s, and 80s during the regime of Sekou Toure in Guinea, which persecuted many Fulbe traders and clerics. Some Diakhanke clerics also migrated from Guinea to Kedougou during Sekou Toure’s presidency. The Qur’an is deeply woven into the fabric of Fulbe cultural tradition, a process that may have begun under the influence of Arab and Berber merchants in the late millennium and certainly accelerated through *jihads* in the eighteenth and nineteenth centuries. ON this latter point, see David Robinson, *The Holy War of Umar Tal* (Oxford: Oxford University Press, 1985).

Conversion to Islam among first-comer groups occurred much later in Kedougou than in other regions of Senegal and in neighboring countries.⁸ The zone's maintenance of more traditionalist practices has earned it a reputation within the national sphere and among strongholds of Sufi Islam—such as Touba, the heartland of the Mouride brotherhood—as a “fetish land.”⁹ While Tenda rejected Islam for centuries, many began converting to Christianity in the 1960s with the arrival of Protestant and Catholic missions in Kedougou, some of who fled to Senegal after the Sékou Touré expelled them from Guinea.¹⁰ Most Mande and Djallonke have converted to Islam within recent generations, a trend that has accelerated over the past thirty years.¹¹ The degree to which converted members of these groups continue to engage in non-Muslim ritual practices—or freely admit to doing so—varies widely.¹² Many Mande elders in the region of Niokholo, a pre-colonial Mande province, claim to maintain “one foot in Islam and one foot in tradition.” By contrast, men and women of the same generation from Sirimana and Beledougou deny any association with “fetish” practices, particularly sacrifices to *jalans*.

⁸ Cite literature, “Islamization from Below” on Mali, Sanneh on Guinea, and others.

⁹ See the following interviews: File Sadiakho, Kedougou, Jun. 2014; Saloum Sadiakho, Kedougou, Feb. 14, Mar. 20 & Jun. 16, 2014; Bocar Sidibe, Kedougou, Mar. 25, 2014.

¹⁰ The Catholic and Protestant missions that installed in Kedougou in the 1960s and 1970s focused their conversion efforts on Tenda (Bassari) living in the Salemata area, near the border of the park of Niokholo Koba. Some groups also worked among Mande clans in Niokholo. Many Tenda converted to Christianity as some Mande clans in Niokholo. Many of these Mande converts later converted to Islam. Several evangelical Christian organizations began working in Kedougou in the 1980s and worked with Diakhanke and Djallonke. Very few people in either of these ethnic groups converted to Christianity. On the history of missionary activity in Niokholo, see author's interview with Bliesse Karama, Kerekonko, Feb. 17, 2014. For a brief background on the history of the Catholic mission in Kedougou, see Gérard Meyer, *Contes du Pays Malinke: Contes Malinkes du Senegal Oriental* (Kedougou, 1983).

¹¹ In general, Mande in Kedougou converted to Islam through the tutelage of Diakhanke clerics. In Kedougou, Fulbe generally ascribe to the Sufi brotherhood of the Tijaniyya and Diakhanke belong to the Qadirriya order. There are few Mourides in the region and most live in the town of Kedougou. Mourides are drawn primarily from the ranks of bureaucrats, teachers, and merchants.

¹² On this point, see Peter Stirling, “Deconstructing ‘Community’ in Community-Based Natural Resource Management: Investigating Traditional Method of Subsistence, Traditional Ecological Knowledge, and Ethnic Diversity for more effective resource management in the Kedougou Region,” (Waterloo, 2012).

Of course, people have always moved across this ethno-religious spectrum, in most cases toward Islam (or Christianity since the 1960s for Tenda) and rarely toward traditionalism. Shifts in ethnic identity often attended conversions to Islam. In some zones, Djallonke who converted to Islam in the late nineteenth or early twentieth century became Fulbe, changing their names from Keita and Kamara to Diallo, a generic Fulbe name.¹³ Despite movement across the spatiotemporal spectrum between Islam and traditionalism, the perceived ethno-religious “essentialism” of groups can constrain or call into question the authenticity of conversions. Susan Gelman’s definition of “essentialism”—“the view that categories have an underlying reality or true nature that one cannot observe directly but that gives [category members] their identity”—captures how notions of ethnic purity and difference operate in Kedougou.¹⁴

Gold mining crystallizes debates over religious and ethnic essentialisms in the complex world of ethnic and religious mixture and unstable conversions to Islam. From a historical perspective, gold mining is firmly rooted in traditionalism. Prior to the 1970s, only first-comers mined for gold in Kedougou (largely Mande and Djallonke clans). With this context in place, the next section explores tensions around conversation and ethnic essentialism unearthed by the uneven transition of gold mining from the domain of Mande traditionalists to the primary productive activity of diverse groups in Kedougou, including Muslim Mande.

¹³ On name conversations and the history of slavery in the wider region, see Gregory Mann, “What’s in an Alias: Family Names, Individual Histories, and Historical Method in the Western Sudan,” *History of Africa*, Vol. 29 (2005): 309-320; and McGovern, *Unmasking the State*.

¹⁴ Susan Gelman, “Essentialism,” In Robert A. Wilson and Frank C. Keil, eds., *The MIT encyclopedia of cognitive science*, 282-284 (Cambridge, 1999), 283.

Subterranean Arguments

Can you be a Muslim and also a successful gold miner? This question is central to debates over the moral status of gold mining and highlights expresses over the strong historical association of gold mining with traditionalist practices and forms of consumption that Diahanke and Fulbe Muslims once characterized as *haram*. This section offers an overview of some of the most important traditionalist practices associated with gold mining in Kedougou in recent years and the grounds on which Muslims have challenged the purported efficacy of these practices.

In large part, both traditionalists and Muslims agree that gold is “in the hands of the *jinne*” (*jinne ye sano bolo*), a preternatural creature created by an Almighty God. As elaborated in Chapter 1, the term *jinne* itself derives from Arabic and is used in the Qur’an and in hadith to refer to spirits that inhabit the earth alongside humans and contain certain powers, confided in them by God. According to most traditions of Sufi Islam, humans can interact with and even learn from *jinne*, but they should not praise or venerate *jinne* as an Almighty God. In the past, Mande traditionalists used more place and clan-specific terms to refer to land spirits, but these terms have fallen out of use in recent generations. Despite using the Qur’anic term *jinne*, the interactions of Mande traditionalists with these spirits differs in important ways from Muslim precepts. The most contested realm concerns sacrifice (*sudaxu*). In Muslim households in Senegal, the father or eldest son often slaughters animals within the family concession in the name of God. This is called a sacrifice and can be performed for the general wellbeing of the family or to ask God’s favor in meeting certain goals. The meat is divided into thirds: the family retains one third, one third is given to relatives, and the final third to the poor. By contrast, Mande ritual practitioners argue that to “open” a dioura and ensure its fertility, sacrifices must be made in the name of the *jinne*. This intention is signaled by performing the sacrifice in the forest

either at the base of shrines (*jalan*) or on the *dioura* itself. Spilling blood into the soil appeases the *jinne* and transforms the goldfield into a *jalan* in its own right. As described in Chapter 1, this accounts for the etymology of the term *dioura* as a “place of ritual.” Sacrifices to the *jinne* are burned or suffocated, which also runs counter to the Muslim practice of slaughtering by knife.

These “bush sacrifices” have come under scrutiny as growing numbers of Muslim groups in Kedougou engage in gold mining and significant numbers of Mande traditionalists have converted to Islam. Many chief of *diouras* (*diourakuntigi*) argue that they only perform “sacrifices in town.” Others maintain that they maintain bush sacrifices have not gone underground—they are intensely private affairs performed under the cover of night. In the context of Kedougou’s expanding artisanal gold mining frontier, statements that a miner “eat their sacrifices in the bush” is an accusation that the miner professes Islam, but secretly propitiates *jinne*. Consider the following instance in which I heard this argument made. I was living in the compound of Bambo Cissokho, the chief of Tinkoto, Kedougou’s oldest active artisanal mine. As elaborated below, Cissokho openly professes to follow the “way of tradition” (*chosen sila*) in managing the ritual life of the *dioura*—even though many of them have converted to Islam. One day, Bambo organized a *sudaxu* in his family compound—a slaughter of a white lamb. After dividing the meat among his neighborhoods and gifting a large portion of the meat to poor families, Cissokho asked his wives to prepare the lamb in a traditional Senegalese dish—*cheeb u jen*. Bambo invited the heads of Tinkoto’s households to consume the meat and I shared the meal with one of his wives. Several women sharing our bowl commented on the tastiness of the meat and blessed Bambo with a Muslim prayer. At the prayer’s end, an older woman sharing our bowl commented in Maninkakan: “the real sacrifice took place in the bush. Tonight, Cissokho will eat grilled meat on the *dioura*.” I heard similar accusations throughout my fieldwork. My research

assistants heard similar commentary, once we began listening for it. In Cissokho's compound, such a comment was humorous as Bambo is proud of his traditionalist knowledge. In other contexts, this is a grave insult: a public questioning of someone's status as a Muslim.

Another highly contentious debate waged over gold mining and rituals concerns human sacrifices to *jinne*. This is a sensationalist topic; however, people brought up the topic of human sacrifice so frequently that it merits careful consideration within this chapter. Oral narratives recount that gold mining communities sacrificed people in the past (as discussed in Chapter 1, the most recent recollection of human sacrifice was in Tinkoto in the late nineteenth century). We cannot know whether these sacrifices took place or if they operate as a kind of metaphor for the high price people pay to *jinne* to mine particular tracts of land. Regardless, descriptions of these human sacrifices mirror those of animal sacrifices to the *jinne*. The humans are prepared for sacrifice and buried in the earth up to their necks. If the bodies retreated into the earth by morning, the *jinne* accepted the sacrifice. If not, ritual authorities forbade people from mining the site. Today it is rumored that people are still sacrificed to the *jinne* of the mines, but indirectly. The *jinne* will request the sacrifice of a young man or woman, an elder, a chief, or a stranger. These demands are revealed to ritual practitioners through divination or dreams. If the *diourakuntigi* rejects the *jinne*'s request, he must prohibit people from mining the tract of land in question. If the *diourakuntigi* agrees to meet the *jinne*'s demands, he does so by authorizing the *jinne* to take his or her "own sacrifice." The *jinne* will seize the person destined for sacrifice while walking back from a field at night, bathing at dawn, or in the throes of illness. The *jinne* could wait days, months, or even years before taking the sacrifice, but it is always taken.

Stories of human sacrifice accuse or shore up the moral legitimacy of different authorities, artisanal miners, and of the claims of certain clans and villages to gold. They

articulate with a broader repertoire of practices and beliefs tied to the hold of the unseen world over specific places and natural resources. As in many parts of West Africa, there are tracts of land in Kedougou considered dangerous for people to inhabit because they are haunted by powerful *jinne*. Both Muslims and non-Muslims share this understanding. In the deeper past, ritual authorities often lived in particular tract of land for months before determining if it was safe to establish a village. First-comers used a range of ritual techniques to tame the hold of *jinne* over the land, including sacrifices and planting powerful objects in the soil to combat the powers of the unseen world. To diminish the power of *jinne* and forces, Muslim clerics or *walis* also bless the land through prayers and sprinkle water mixed with the ink used to write the Qur'an on wooden tablets by students into the soil. In Kedougou, these practices are credited for transforming “fetish land” (*jalan dugu*) into “Muslim land” (*dinna dugu*). For Muslims and non-Muslims alike, the power and personalities of *jinne* varied: one *jinne* could request a human sacrifice to make the land cultivable, others an animal sacrifice. A village demonstrates its identity as “truly” Muslim by refusing to make a human sacrifice or by recruiting powerful *walis* to rid the land of its *jinne* inhabitants through special prayers and esoteric techniques.

Let me offer two examples of how stories about the demands of *jinne* for human sacrifices operate as moral arguments in Kedougou. The first concerns, once again, the village of Tinkoto. Long-term residents of Tinkoto admit that their ancestors conducted human sacrifices but argue unequivocally that they no longer practice sacrifices. In the words of Bambo Cissokho:

There is a piece of land over the mountain, close to Rand Gold's permit, that we would like to mine. It is very rich. There was a Guinean man who lived here, and he found a nugget of gold there. He brought me the nugget and said he would like to open a dioura there, with my permission. We searched for knowledge about the place. The price was too high. The *jinne* there is very angry. She wanted us to sacrifice a girl. I said no. I said no one will mine the land. We have to leave it for the *jinne*. We would like to mine it [...] until the *jinne* loosens her hold on the land, no one from Tinkoto will mine there.¹⁵

¹⁵ Interview with Author, Bambo Cissokho, Tinkoto, Feb. 11, 2014.

I heard a version of this story several times during my different stays in Tinkoto. The story reaffirms the power of *jinne* over the land and reveals that sacrificing a human is a possible consideration. However, it frames Bambo as moral and concerned with communal well fare. A similar story circulates about the visit of a mystical Malian man to Kedougou in the 1950s, still during the colonial period. Purportedly, the Malian called a meeting with several prominent customary authorities from Kedougou town and from Diakhanke villages located nearby along the Gambia River. At the assembly, he told the crowd that there was significant gold near the town of Kedougou. However, the *jinne* required a human sacrifice in order to release the gold to human hands. The *jinne*'s sacrificial demands were very specific: a young, light-skinned woman with a distended bellybutton—umbilical hernia. The crowd immediately recognized the description as matching the youngest daughter of one of the Diakhanke chiefs. The Diakhanke chiefs refused this outrageous suggestion and admonished the stranger for uttering such a request. They forbade anyone from mining in the indicated zone. In contrast to Bambo's story, this account suggests that the Diakhanke chiefs, who are Muslim, would never consider a human sacrifice. As I hope to have established, these stories are a way for people to defend the morality of particular leaders at the same time as they reinforce the fact that *jinne* govern goldfields.

Another domain in which residents of Kedougou debate the relationship of gold to morality and ethno-religious identity concerns the question of "luck" in mining. In the past, Mande miners believed that *jinne* rewarded miners who followed the "path of tradition" (*chosan sila* in Maninkakan and *laawal chosani* in Fulfulde) not only by conducting sacrifices but also through more mundane practices in the pits. For example, *jinne* revealed gold to men who drank libations, particularly "traditional" fermented drinks (millet beer or palm wine), engaged in

sexual intercourse without preparing the body according to Qur'anic prescriptions, and bathed the body in leaves and barks blessed used in traditionalist herbal preparations. *Jinne* did not like men to conduct Muslim prayers on the *dioura* or to perform ablutions. In other words, the *jinne* did not like Muslim forms of bodily praxis and consumption. Because *jinne* prefer traditionalist practices, many in Kedougou argue that Muslims never earn considerable wealth in gold. As a result of this logic, any self-professed Muslim that accrues wealth in the *dioura* risks being accused of straying from Islam by drinking, ceasing prayers, or making sacrifices to *jinne*.

Some take this argument further, arguing that *jinne* can even detect the “spirit” or “essence” (*ni*) of men underground, discerning if they are traditionalists or Muslims. It is often said in Kedougou’s *diouras* that *jinne* prefer men from ethnic groups that fall into “first-comer” status: Mande, Tenda, or Djallonke. This is because the spirit (*ni*) of these men is rooted in traditionalism even if they have converted to Islam and conduct Muslim prayers. This is an “essentialist” argument, as defined above, “the view that categories” (in this case persons) have an underlying reality. A seasoned artisanal miner based in Bambaraya summarized this view.

The *jinne* knows where you come from and they know where you have been. They want a dirty body. You will never find a Muslim who gets rich off gold. They might say they are Muslim, but they have passed by the *subaaku* [sorcerer]. I speak the truth. Truth is the only way in the mines. Those who earn money here, they eat their sacrifices in the bush.¹⁶

This statement is contentious because it implies that even if someone converts to Islam, their essence remains rooted in traditionalism and, in turn, a particular ethnic-religious identity. This argument is quite widespread. Many chiefs of mining team (*damantigi*) in Kedougou recruit at least one team member who is considered closer to “traditionalism” and the soil. Colloquially, these individuals are referred to as “black” (*fin* in Maninkakan, *baale* in Fulfulde). People considered closer to Islam are “white” (*koyi* in Maninkakan, *danne* in Fulfulde). These terms do

¹⁶ Interview with Author, Fanta Madi Cissokho, Bambaraya, Mar. 29, 2014

not necessarily refer to skin color. Rather this lexicon references a distinction between “black” ritual knowledge, which is associated with traditionalism, and the “white” knowledge of Islam.¹⁷ Knowledge of the *jinne*, and success in gold mining, is a form of “black” knowledge.

This essentialist discourse is epitomized in rumors of what happens to people of different ethno-religious backgrounds if they die from a cave-in underground. One widely circulating legend, from which the title of this chapter is derived, recounts that the bones of Mande or other traditionalists will turn to gold if they are buried alive. Stated otherwise, Mande bodies are metonymically linked to gold. Consider the words of an elder, also from Tinkoto: “You will only know a true Muslim when he dies in the mines. Those who say they are Muslims but perform sacrifices to their *jinne* if they die underground, their bones turn to gold.”¹⁸

Many Muslims in Kedougou contest these accounts. The “Muslim” explanation for why gold mining is morally corrupting has more to do with the mundane social and material practices attending the “work of gold” (*saano baaro*) than with concerns about the substance of gold and its association with particular traditionalist practices. Imams and artisanal miners who identified as Muslim elaborated this argument in interviews. The Imam of the neighborhood of “Laawol Tamba” in Kedougou—who I spoke to at length about the history of mining and Islam in Kedougou—elegantly captures the general talking points people raised across my interviews.

We cannot say that there is something *haram* about gold mining, because Allah put gold in the earth for the benefit of humankind. What we can say is this. It is difficult for the man who searches for gold to practice Islam. In Islam, you must pray five times a day, facing Mecca. It is best if you can perform ablutions, to be clean before Allah. But if

¹⁷ This is a delicate point. On occasion, this division can map onto differences in skin color, particularly in reference to Fula speakers who are known to have lighter skin and claim genealogical ties to the Arabia Peninsula (although this is contested). In the contexts referred to in this chapter these color categories refer to certain kind of knowledge. Different color terms are used to refer to white people (e.g., *toubab*). On “white” and “black” knowledge in gold mining, see the following interviews: Oussenou, Traoure, Marabout. Mako, Feb. 25, 2014; El Hadji Alpha Diby Souare, Imam of Mako, Mako, Mar. 22, 2014.

¹⁸ Interview with Author, Sidi Gueye, Tinkoto, Jan. 16, 2014; Interview with Author, Gassimou Cissokho, Tinkoto, Jan. 24, 2014

from sunrise to sunset you find yourself in the bush searching for gold, you can find yourself forgetting to pray. There is no water to pray, the people around you are not praying, and so it becomes easy to stray. When you are digging underground, you do not see the sun moving across the sky. You can forget when you are supposed to pray. It is for this reason that we can say that gold mining does not go with Islam, but not because gold is *haram*. But because people are forgetful and can be lead astray [...]. We can also say that the *dioura* is not a place of Islam because it is not a clean place. It is not a healthy place for people and for children. There is prostitution, there is drinking. And the Prophet, peace be upon him, instructed Muslims to avoid unclean places.¹⁹

According to the Imam, the dangers of gold mining are related to a constellation of practices tied to gold mining that can lead people away from the “path of Islam” (*dinna sila*). Rural residents often underscored this point when comparing *orpaillage* with agriculture. It is also a preoccupation of regional administrators who argue that *orpaillage* exacerbates food insecurity. To date, there is no clear evidence that *orpaillage* has decreased food security in the region (because people often purchase food with income generated from mining and other factors, such as droughts and changes in access to fertilizer need to be taken into account). It is apparent that conducting *orpaillage* during the dry season and, in some cases, during the rainy season, interrupts other social and religious activities tied to agrarian lifestyles focused on farming. In many Muslim villages, children focus on learning the Qur’an during the dry-season. *Orpaillage* interferes with this rhythm of Qur’anic school much more so than hunting or firewood collection because it demands continuous and intensive daily labor, which effectively eliminates the possibility of pursuing complementary activities at the same time.²⁰

Some elders argued that *orpaillage* is morally corrupt because it is difficult to discern how much their children earn in the mines. They contrasted this to agriculture, where the entire village can see how much a given individual cultivated by surveying their field and harvest. Accordingly, the removal of the *zakat* from the harvest for the poor and elderly (according to

¹⁹ Interview with Author, Thierno Sidi Ba, Kedougou, Jan. 27, 2014.

²⁰ Interview with Author, Yela Kamara, Kerekonko, Feb. 19, 2014.

Islamic law, 10% of your earnings should be given as alms) is also discernable. By contrast, since gold is mined underground, and is portable, it is difficult to discern if child, husband, or wife has removed the *zakat*, thus “purifying” the money. There is a larger issue at stake here, which is the concept of “easy money” or wealth produced without an adequate investment of sweat equity. A tenant of Islam widely discussed in Senegal concerns the fact that few Muslims become very rich because God provides only what one needs. A common discussion in everyday life is the importance of earning money that is blessed (*barki*), untarnished by trickery, fraud, or the exploitation of others. Like agriculture and other forms of physical labor, *orpillage* is and most miners earn only modest returns for the sweat equity invested in digging and crushing rock by hand. However, some do “strike rich” by landing on an unusually rich gold vein or nugget. Most Muslims consider this rapid wealth morally suspect because the reward is incommensurate with effort. Again, people who are “lucky” in the mines risk being accused of immoral behavior.

Finally, the uneven distribution of gold across the region of Kedougou is itself a source of speculation as to whether the ethno-religious affiliation of a village can encourage *jinne* to reveal or conceal gold. Despite Kedougou’s diversity, Mande inhabit most of the region’s auriferous zones. Few gold discoveries have been made in Fulbe villages, with the exception of some Fulbe villages located within Mande-dominated areas, where these groups have intermarried. Historical reasons likely explain the concentration of Mande clans on auriferous soils. For one, the rugged and sparsely wooded savannah landscape that conceals gold resembles regions in neighboring Mali and northeastern Guinea, where most Mande settlers in Kedougou originated. Mande migrants may well have settled these zones because they looked like “home” and contained plants and minerals valuable to the cooking traditions and livelihoods of these peoples. In some cases, the choice of auriferous zones may have been shaped by the deliberate search for gold.

The origin stories of several villages in Sirimana and Beledougou credit blacksmiths with founding these villages, which they “discovered” while prospecting for iron and gold deposits. Another explanation given is that due to the propitiation of *jinne* by Mande, *jinne* revealed gold in Mande villages while concealing it in others. There is a moral valence to this final explanation. Residents of some Fulfulde and Diahanke villages argue that gold does not appear in their village because the land is blessed by Muslim prayers far more powerful than the *jinne*.

In the remaining sections of this chapter, I offer three brief case studies to exemplify how tensions between traditionalism and Islam materialize in different *diouras*. We will begin with Tinkoto, by now familiar to readers as Kedougou’s most celebrated artisanal gold mine.

Making a Mande Ritual Territory: Tinkoto



(Figure 32: Women and children washing gold in Tinkoto, Senegal, 2014)

Tinkoto village sits on a hill overlooking a landscape of savannah hills studded with perennial shrubs. Sharp gullies, cut fresh each year from the torrential monsoons of the rainy

season, mark the edges of the village center. Rain collects in the basins. Women wade into these murky pools to wash auriferous sands. Rock-crushing machines, powered by diesel generators, are perched on hillsides above. Young men strand astride the machines, feeding buckets of rock into the throbbing mouths of the crushers. Clients come and go with white buckets, used peanut oil containers now filled with gravel, sands and coarse rock glittering with traces of gold. Along a row of wooden sluices lined with rug, women pour buckets of pulverized gold dust. Children rush around the feet of mothers, aunts and cousins. By the age of eight, children not attending school collect the run-off from sluices and rewash the golden silt to generate pocket money.

Dozens of boutiques line the dusty pathways winding through the heart of town: clothing and electronics, hot food, butchers, barber shops, tailors, vegetable stands, and video consoles and cell-phone charging stations beckon the passerby. Boutiques, like the huts situated on the outer ring of the shops, are constructed hastily assembled mud, thatch, and tarp. The steady churn of commerce in Tinkoto village is matched by the frenetic activity unfolding in the surrounding bush. Alighting on motorcycles and bicycles, hundreds of men and women depart the village early in the morning, before the searing sun renders the earth hot to the touch. “Big *dioura*” (*dioura ba*), situated fifteen meters from Tinkoto center, is the most popular destination. In the beds of pick-up trucks, young Guinean men transport miners and merchants between Tinkoto and *dioura ba*. A dusty haze hovers over the road, churned up by swiftly passing trucks.

The chief of Tinkoto, Bambo Cissokho, oversees the village’s strikingly complex extractive system. Bambo’s title as chief is “customary” in that it has no legal standing (the Senegalese state does not legally recognize village chiefs). Bambo’s authority is widely respected by residents of Kedougou, gold mining companies, and Senegalese law enforcement, and regional government officials. The exploration permit of the South African gold mining

company, Randgold, covers the entirety of Tinkoto village and its *diouras*, rendering artisanal mining in this zone illegal. For over fifteen years, Bambo Cissokho has nurtured a relationship with David Mbaye, a geologist and the Senegalese country director for Randgold. In exchange for allowing Tinkoto to exploit gold at certain *diouras* within the permit, Bambo ensures that the multi-national teams of miners populating his village respect Randgold's "no go" zones—places where the company has located gold deposits exploitable on an industrial scale. Bambo travels at least once a week to the town of Kedougou in a 2011 white Cadillac escalade to meet with the *gendarmes* and other state authorities. Bambo has had his own run-ins with the law, but more frequently he collaborates with the *gendarmes* to find "bandits" suspected of hiding out in the *diouras*. As the chief of the *gendarmes* of Kedougou recounted in one of our numerous conversations, his relationship with Bambo is a "necessary evil" (*mal nécessaire*).

Cissokho shores up his customary authority as the chief of Tinkoto and its *diouras* by situating himself in a genealogy of Mande ritual authorities that historically controlled *diouras* in the Kedougou region. The men and women who convene in Tinkoto to mine and process gold, and conduct commerce, ascribe to a variety of religious traditions and have differing interpretations about the relationship of *jinne* and other forms of ritual knowledge.

Like many of the founding families of Tinkoto, Cissokho was raised in a Mande traditionalist family in the pre-colonial province of Beledougou. He converted to Islam, but continues to openly practice "traditional" sacrifices at the *jalan* and displays Mande ritual objects in his hut.²¹ Bambo descends from a Cissokho clan that is considered the "owners of the land" in Beledougou. Their claim to first-comer status, like those of other Mande clans in the region, is based on an origin story of the forging of a sacrificial pact between a Cissokho and the resident

²¹*Jalans* are distinct from ancestor shrines (*furee*), which are often maintained by single lineages or households. Erected at the base of particular trees or clusters of rocks, *jalans* protect the entire community against evil forces, disease, and infertility. Some Mande villages have more than one *jalan*.

jinne of Beledougou. Oral narratives place this encounter in the fifteenth or sixteenth century.

The Cissokho's welcomed other Mande clans into Beledougou, and confided certain ritual functions to the Souare clan while retaining authority over land allocation. Even today, the founding Cissokho clan remains the undisputed "masters of the soil" and most customary chiefs in this zone defend from this clan, perform fertility rites, and oversee the opening of *diouras*.²²

Prior to the twentieth century, gold mining in Kedougou was largely concentrated in the province of Beledougou. The *dioura* of Tinkoto was exceptional because it was situated at the crossroads of Beledougou with two other pre-colonial provinces: Niokholo and Dentila.²³ While Tinkoto is perhaps one of the oldest artisanal mining sites in Kedougou, the village did not have a chief until Bambo Cissokho was elected, through popular vote, as chief in the 1990s. In fact, Tinkoto was not considered a village at all—it was strictly a *dioura*. As such, for generations the only authority in Tinkoto was the "chief of the *dioura*" (*diourakuntigi*).²⁴ Drawn from diverse provinces, the community of miners assembled in Tinkoto freely elected a *diourakuntigi* to oversee the ritual aspects of the mines. The primary role of the *diourakuntigi* was to conduct communal (or corporate) sacrifices to the *jinne* of the *dioura*. The most important characteristic of the *diourakuntigi* was that he (less often she) could ritually discern the sacrificial desires of the *jinne*, thus ensuring the fertility of the *dioura* and the safety of miners. The *diourakuntigi* drew on divination, dreams, sorcery, sacrifices at clan *jalans*, or consultations with other ritual specialists to determine the appropriate sacrifices for the *dioura* each season.

²² The pre-colonial province of a Beledougou largely aligns with the contemporary "rural community" (*communaute rurale*) of Khossonto. Affiliation with these provinces remains important in the local management of *diouras* and ritual life. According to the foundational narratives of Beledougou, the *jinne* the zone accorded the Cissokho clan ritual jurisdiction over land, the opening of new *diouras*, and the mediation of conflicts among people.

²³ Mande clans historically dominated both Niokholo and Dentila. Niokholo contains important Fulbe villages and Dentila some larger Djallonke villages. Niokholo was governed as a vassal state of the pre-colonial theocracy of Fouta Djallon until French conquest in the 1890s (see Chapter 1).

²⁴ See Chapter 1 on the distinction between *diourakuntigi* and the *dugutigi* among the Mande.

In order to cover the cost of sacrificing animals to the *jinne*, miners voluntarily gave a portion of the gold recovered from their mining shafts to the *diourakuntigi*. In turn, the *diourakuntigi* recruited a group of men—called the *tombolman*—to mediate any disputes that emerged over the territorial limits of the mining shafts of different miners. In the past, most *tombolman* were Mande hunters and their primary role was to protect the miners from boars, elephants and baboons who frequented Tinkoto. *Tombolman* hunted antelope during the day and protected the camp of miners at night. In exchange for protection and meat, miners offered a portion of their proceeds to the *tombolman*. As extraction intensified during the colonial period, and wild animal populations diminished, *tombolman* began to police conflicts between people.

Beyond overseeing sacrifices to *jinne*, the *diourakuntigi* and *tombolman* also ensured that miners respected the taboos or totems (*tana*) of the *dioura*. Most Mande clans in West Africa have totems—many of which are animals (e.g., crocodiles, snakes, or lizards). For clan members, it is forbidden to kill or eat these animals, which assist clan members in mystical realms.²⁵ *Diouras* also have taboos, which are not tied to a particular clan. These *tanans* are expressed through restrictions on the kinds of persons, animals, and substances that can enter the *dioura*. For example, hot peppers and onion cannot be consumed on the *dioura*. Dogs and military boots—such as those worn by the army, forestry agents, and gendarmes—are forbidden.²⁶ The most controversial *tana* is the prohibition against men and women descendants of a Mande artisan class of leather-workers (*garanke*) descending into mining shafts. Across Mali, Guinea, and Senegal, it is widely believed that *garanke* will “kill” the *dioura*. There is ambiguity about

²⁵ On totems among Mande across West Africa, see George E. Brooks, *Landlords and Strangers: Ecology, Society, and Trade in Western Africa, 1000-1630* (Boulder, 1993); Patrick McNaughton, *The Mande Blacksmiths: Knowledge, Power, and Art in West Africa* (Bloomington, 1988); Roderick James McIntosh, *The Peoples of the Middle Niger: The Island of Gold* (Oxford, 1988); David C. Conrad and Barbara E. Frank, eds. *Status and Identity in West Africa: Nyamakalaw of Mande* (Bloomington, 1995); Joseph Hellweg, *Hunting the Ethical State: The Benkadi Movement of Cote d’Ivoire* (Chicago, 2011).

²⁶ In Kedougou, many *gendarmes* respect the *tana* of the *dioura* and do not walk directly on the *dioura*.

whether the *jinne* of the *dioura* dislike *garanke* or if the earth itself rejects the presence of the *garanke* because they are the *tana* of the *dioura*. To compensate for this restriction, historically in Tinkoto miners gave a portion of their gold to *garanke* families at the end of the dry season.²⁷

Ritual sacrifices and *tana* are part of a Mande ritual cosmology that is found across *diouras* on the West African Sahel but takes on unique local expressions (Chapter 1). Bambo Cissokho grounds his authority within this tradition, claiming that only people familiar with Mande traditionalist families (*chosan Maninkalu*) can properly manage the ritual relations required to keep the *dioura* fertile and safe for humans. Bambo welcomes people of all ethnic and religious groups into Tinkoto and its *diouras*, but under the condition that they submit to what he calls the “sharia” of Tinkoto. This term is widely used in Kedougou to refer to the customary laws that govern extraction. To be clear, nothing about these laws resembles the sharia of Muslim law from which the name is derived. In fact a number of these ritual practices and prohibitions run contrary to Qur’anic principles. It appears the term “sharia” gained traction as an index of an indigenous regulatory code that is not sanctioned by the state but is viewed as legitimate in the popular realm.²⁸ Tinkoto’s “sharia” includes more mundane restrictions—for example, cooking fires must be extinguished by noon (to avoid fires during the afternoon high-heat) and motorcycles cannot be operated after nightfall (to reduce accidents and theft). Bambo

²⁷ In extensive interviews on the topic, I heard a range of competing theories about why *garanke* are prohibited from mining in the *dioura*. The prohibition against *garanke* is quite specific: other “casted” categories of people (blacksmiths, potters, etc) are allowed in the *dioura*. It could simply be the case that *garanke* are the *tana* of the *dioura*, which does not in and of itself have an explanation (in the same way that there is no explanation for why serpents are the *tana* of Mande blacksmith). Several disputes over the expulsion of *garanke* from Kedougou’s mines in recent years have made their way into the court system. Exhausted of fielding incessant complaints over the matter, the chief of the *gendarmes* in Kedougou assisted a group of *ciin* opening their own mine near the village of Tinkoto in 2013.

²⁸ The Senegalese state does not recognize the sharia of the *dioura* and state officials often condemn the sharia as retrograde. In reference to the sharia the chief of the *gendarmes* of Kedougou said this: “People in Kedougou are still living in the Middle Ages. I thought we left the Middle Ages behind in Senegal, but its still alive in Kedougou through the ‘sharia.’” In practice, however, officials turn a blind eye to the sharia, recognizing that ensures a degree of security in a zone that is increasingly turbulent. See interview with Alioune Diop, Commandant de Brigade, Kedougou, Jun 6, 2014.

claims his right to enforce the “sharia” of Tinkoto based on his hereditary ritual knowledge, established by his ancestors through generations of ritual sacrifices to *jinne* at clan shrines (*jalans*) and *diouras*. Bambo also oversees the election of a new “chief of the mines” (*diourakuntigi*) in Tinkoto who conducts communal sacrifices at the beginning of each mining season and before the opening of a *dioura*. Currently, the *diourakuntigi* of Tinkoto is the son of the sole woman among the founding members of Tinkoto. Together, they decide when to open a new *dioura* for communal extraction and when to close a *dioura* that is no longer fertile.

Cissokho determines fines for anyone who breaks the “sharia” of Tinkoto and grants spaces for migrants to establish a boutique or other businesses on the *dioura* itself. Cissokho occasionally expels people from the village for violence, theft, and domestic abuse. Cissokho has evolved the “sharia” of Tinkoto over time. In 2002, for example, he began asked mining teams to give him (*the dugutigi*) a portion of their revenues (in the past miners only gave a portion of their earnings to the mine security, *tombolman*, and to the ritual chief of the mine, the *diourakuntigi*). In 2002, however, Tinkoto was in conflict with Randgold. At the time, several men from the village worked as day laborers for the company’s geologists, digging exploration trenches. One night, they returned to a trench dug during the day--expanding its depth and digging additional mining shafts. Randgold’s private security forces surprised the group of miners. According to live witnesses, several miners were beaten; the private security guards escorted the miners to the region’s jail and set the newly dug trenches were set on fire. This marked the onset of “war” between Tinkoto and Rand Gold. In the aftermath, Cissokho and the country manager for Randgold entered into intense negotiations with the *gendarmes* based in Kedougou. As recalled by one notable who attended the meetings during the “war,” Cissokho appealed:

The government does not support us, and we are at war with Randgold. I need force so

can fight with the company. I pray to you for help. Every time you dig a mine, I need a portion of your rock, so I can afford to go to Kedougou to negotiate with the state.²⁹

The village elected to support Cissokho's plea, providing him with enough rock to pay for gasoline. In time, Cissokho traded in his motorcycle for a truck and later, for a Cadillac escalade.

I lived intermittently in Cissokho's household during my research and traveled many more times to Tinkoto over the course of my research in 2013 and 2014 to meet with Cissokho and other customary authorities, artisanal miners, and merchants in Tinkoto village. In our conversations, Cissokho repeatedly emphasized the alliance between Mande people and gold. He emphasized that the entry of ethnic Fulbe, in particular, into mining was recent and that this group lacked the requisite knowledge—"black knowledge"—to manage a *dioura*. In his words:

Where there is a *dioura*, there are Mande behind it. Every dioura you go to, you will hear the names *daman* [shaft], *solli* [pick], *tombolman* [customary police], and diourakuntigi. Are these Pullo words? No, they are Mande. The *dioura* is for Mande. From here [Tinkoto] as far as you can see, this is the land of Mande. If I conduct a sacrifice here, its force will be felt in Beledougou and Sirimana. Even Niokholo, they will know the benefits of our sacrifice. There are *Pullo dinnu* [diminutive term for Fulbe] who now claim they have *diouras*. I ask you, do you know a Pullo dioura in Kedougou that is strong? They will find gold, but it will be weak, it will be little, barely enough to feed their people. They [Fulbe] do not know the work of gold.³⁰

As this statement makes clear, Bambo Cissokho promotes an ethnic essentialist justification for his control over the *dioura* of Tinkoto and for the control of ethnic Mande over gold mining in Kedougou. We will now travel into a Fulbe village neighboring Tinkoto, called Kanoumering. Authorities in Kanoumering contest Cissokho's claims that "Fulbe do not know the work of gold" and the premise that only Mande can maintain a fertile *dioura*. Since the early 2000s, they have operated a *dioura* based on the "path of Islam" rather than the "path of tradition."

²⁹ Interview with Author, Makhan Keita, Kanoumering, Feb. 10, 2014.

³⁰ Interview with Author, Bambo Cissokho, Tinkoto, Feb. 11, 2014.

Making a Muslim *Dioura*: Kanoumering

Located less than five miles on a dirt road from Tinkoto, the physical layout and rhythms of the village of Kanoumering diverge remarkably from its neighbor. Most of the households in Tinkoto are constructed of mud and thatch, concrete buildings are the exception as most people laboring in Tinkoto's diouras have permanent households elsewhere in the region or in Mali, Guinea, or Burkina Faso. By contrast, Kanoumering is an established village. Most family compounds boast at least one a concrete building, constructed within the past decade. A few boutiques border the mosque at the center of town. But commercial activity is minimal here compared to Tinkoto, where the streets are lined with merchants and women who sell prepared food and cold drinks to miners and other merchants. Kanoumering is primarily Fulbe, although there are a few prominent Mande families. Founded over a century ago, Kanoumering's population swelled during the famines of the 1970s and 1980s when wells ran dry in Fulbe villages of the provinces of Beledougou and Sirimana. For much of its history, life in Kanoumering was centered on rainy-season agriculture, raising cattle, and occasional dry season migration to Dakar or Tambacounda for seasonal wage labor or commerce. Living in proximity to Tinkoto, residents of Kanoumering were familiar with gold mining. Occasionally, young men worked for Mande mining teams as operators of pulley ropes. But like many Fulbe in the region of Kedougou, most residents of Kanoumering largely considered gold mining a Mande occupation. In the words of an elderly resident of the village, now in his 90s:

To see a Pullo digging underground, it was not something I saw as a child. My parents and grandparents did not know mining. What they knew was farming and raising cattle. For a Pullo to crawl underground like a mole, it was not possible. They said gold was not blessed. It was not a thing of Muslims. That was before we "woke up." Allah put gold in the soil for humans. Now, it is not a problem. Pullo and Maninkalu can work the soil.³¹

³¹ Interview with Author, anonymous, Kanoumerig, Feb. 8, 2014.

“Wake up” is a euphemism used by Fulfulde speakers for “civilization.” Implied here is that his ancestors were misguided in thinking gold was “not blessed.” This “awakening” is a common justification I heard from Fulbe for their entry into gold mining. Material factors certainly also shaped this transition. It was during the Sahelian famines of the 1970s and early 1980s, when Kanoumering’s granaries ran dry, that dozens of men and women began to pass the dry season in Tinkoto. They mined for gold in order to purchase imported grain at record prices.

Throughout the 1970s and 1980s, men from this village also worked as bush guides and geological assistants of mineral research missions of the Bureau de Recherches Geologiques et Minieres (BRGM), a French parastatal that prospected for gold around Tinkoto (See Chapter 4). Some of these men also worked for the geologists of “Anmericosa,” a company who held a gold exploration permit for Kanoumering and Tinkoto in the late 1990s. The father of the current chief of Kanoumering, Torodo Diallo, gave a tract of land for Anmericosa’s base camp. In the early 2000s, the South African gold mining company, Randgold, called a meeting with the village to inform them that the state had granted Randgold permission to install their exploration camp in the village. Since 2003, when the camp became operational, Randgold employs residents of Kanoumering as guardians and geological aids.³² A Randgold truck passes by the village each morning and evening to transport workers to their camp, located on the road to Tinkoto. As this brief history of mineral exploration in Kanoumering renders clear, residents of this village have long known there was gold in the area surrounding their village. It was not until the mid-2000s that Torodo Diallo and other village authorities opened their own *dioura*.

A young man from Kanoumering purportedly discovered gold in the field that was transformed into the principal *dioura* exploited by the village’s residents today. There was

³² Interview with Author, Torodo Diallo, Kanoumering, Feb. 9, 2014.

considerable debate before opening the *dioura* about how it was to be managed. It was determined that they, like their Mande counterparts in Tinkoto, would elect a *diourakuntigi* and *tombolman*. However, in contrast to Tinkoto they would not conduct sacrifices to *jinne* or on regional *jalan* (shrines), which Kanoumering's residents consider ritually unclean (*haram*). Torodo Diallo, the current chief, recounted how they opened the *dioura* for extraction.

The tradition of the *dioura* people say is based on the *jinne*. The *jinne* own the *dioura*. Our *dioura* is based on the tradition of the Qur'an. Gold is in the hands of God. It was God who put gold in the ground for humans, not *jinne*. God also created *jinne* and some of them guard gold, but us, we asked God to let gold rise to the surface of the earth. As Torodo went on to explain, the village recruited renowned Muslim clerics to visit the space of the *dioura* and to plant medicine in the ground, Qur'anic verses bound in pockets of leather. Known colloquially as "gris-gris" or amulets, these objects draw on the power of the written word of the Qur'an to chase away *jinne* or otherworldly creatures haunting the area. Before opening the *dioura* for communal extraction, they paid for the transportation of a *wali* from Guinea who spent several days praying on the site of the goldfield and blessing the *dioura*. To return to Torodo's words:

There is the *jalan* in Tinkoto. We, we have studied the Qur'an and our path is Islam. Before we dig in the earth and before we make our sacrifices we say "*bismillah*, let this work be in the name of God." They say this in Tinkoto but they also take chickens to the *dioura*. In Kanoumering, we do not make sacrifices in the bush. The *cherno* (Imam) will tell us to make a sacrifice, and we will go and prepare the sacrifice for the people in the mosque. It is us who eat the sacrifice.³³

Note how Torodo makes comparisons both implicit and explicit between the ritual practices of Kanoumering and those of Tinkoto. He acknowledges that people in Tinkoto perform Muslim rituals, but suggests that these are in name only because they continue to perform traditionalist practices—taking "chickens to the *dioura*" (sacrifices for the *jinne*). Torodo also references the

³³ Interview with Author, Oumar Sidibe, Kanoumering, Feb. 10, 2014.

fact that their sacrifices are performed after the prescriptions of an Imam rather than a traditionalist authority and that these sacrifices are performed in the name of God in the village—not in the bush, again an implied contrast to the purported practices of Tinkoto.

As Kanoumering was preparing to open its *dioura*, Bambo Cissokho visited Torodo and other village elders and warned them that their *dioura* would be unprofitable without his assistance. As Torodo recounted, Bambo argued that a “Pullo cannot be the head of a *dioura*.” Kanoumering rejected Bambo’s interlude and that of one of its long-standing Mande families who similarly argued that the village’s management of the *dioura* was misguided and potentially endangering villagers, exposing them to the whims of angered *jinne*. Torodo disciplined the family by forbidding them from entering Kanoumering’s *dioura* and instructing boutique owners to refuse to sell to them. For five years, this family provisioned themselves in sugar, salt, cigarettes, and *ataya*—which are purchased on a daily basis by families—from Tinkoto. This is one example of how debates over ethnic essentialism and gold shape social life in Kedougou.

Intriguingly, the productivity of Kanoumering’s *dioura* has waxed and waned over the years. Few people have gained adequate wealth from the *dioura* to finance, for example, a concrete house. Today mostly women and elderly men exploit the *dioura* to meet household *dépense* (daily expenses). Most young men from Kanoumering work as chiefs of mining teams (*damantigi*) at *diouras* located throughout Kedougou, including Tinkoto, distributing their investments across the landscape. To facilitate this work, the first purchase of young men who earn money in the mines is a motorcycle. Thus, as Bambo Cissokho predicted, Kanoumering’s *dioura* has not been as “strong” as those of Tinkoto. Residents of Kanoumering and Fulbe authorities who manage *diouras* elsewhere in Kedougou have an explanation for this, which is also rooted in Qur’anic principles. According to the chief of the *tombolman* of Kanoumering:

It is difficult to see a Muslim *dioura* with lots of gold. It is always little by little that you will find gold in a Muslim *dioura*. You will never find a true Muslim earn wealth quickly. It is always little by little, by the sweat of his brow. Because God gives those who practice the “way of Islam” what they need [...] not more.³⁴

It is revealing that most people I interviewed in Kanoumering, regardless of the questions I posed, were quick to defend the “morality” of their *dioura* and wealth derived from gold. This suggests, as I have argued above, that there is something to defend—that the morality of extraction by Muslims is, in fact, contentious and actively debated in Kedougou. I will close this brief foray into Kanoumering with the words of Ousmane Diallo, now in his late 20s. Ousmane is a *damantigi* of three mining teams—one in Kanoumering, another in Tinkoto, and a third in the village of Bantaco. He rotates among the sites on motorcycle, but returns to Kanoumering each evening, where he lives with his elderly mother, two younger brothers, and a young wife. The second time we met he was overseeing a different work project: the construction of a concrete house, modeling a style he saw in Guinea, where he occasionally travels to consult with a well-known *cherno* to guide his investments in different *diouras*.

I am a Muslim. My father raised me on the Qur’an. But I have had luck in the gold. I work with the Qur’an, everything I do it is based on the Qur’an. Every man I recruit to my team, it is because I have seen that his luck is in gold. And you see this house I am building [gesturing to a laborer pouring concrete bricks before us], you tell me that this house is not blessed? Because it is here my mother will age. And I will raise my children. I will never have to replace my roof with thatch, like my father. And you tell me this work is not blessed? All work performed in the name of God is blessed.³⁵

³⁴ Interview with Author, Bana Sidibe, Kanoumering, Feb. 9, 2014.

³⁵ Interview with Author, Ousmane Diallo, Kanoumering, Feb. 10, 2014.

“God keep the gold underground”: Samecouta

The village of Samecouta is located a mere five kilometers from Kedougou town on the road to the Malian border. Founded in the eighteenth century, Samecouta is the oldest Diakhanke village in Kedougou. It is situated along the Gambia River near two other largely Diakhanke villages: Laminia and Syllacounda. These villages are referred to as “Diahka.” Diakhanke, an ethnic group related to the Soninke, were among the earliest groups in West Africa to convert to Islam. In Kedougou, ethnic Diakhanke now speak a dialect of Maninkakan with Soninke influences. Diakhanke in Kedougou—who are related to groups of Diakhanke dispersed throughout the Gambia, eastern Senegal, and northern Guinea—are revered for their piety and mastery of the esoteric Islamic sciences. Other factors differentiate the Diakha from other ethno-religious groups in Kedougou. Diahka was historically wealthier than other zones of Kedougou. In addition to exchanging their services as Muslim clerics for the services and goods of blacksmiths and farmers, Diakhanke also engaged in long-distance trade. One origin narrative claims of the Diakha claims that the Diakhanke migrated to the headwaters of the Gambia River in order to corner the market on the eastbound gold trade from Bambuk to British installations on the Gambia. With revenues from trade, Diakhanke invested in slaves and agriculture and grew large households in the rich soils of the alluvial plains of the Gambia. Diakhanke were also among the first groups in Kedougou to immigrate abroad—first to France in the 1960s and 1970s and to Spain beginning in the 1980s. Many men from the Diahka immigrated to Spain by pirogue during the height of this form of clandestine migration in the mid-2000s. Prior to the advent of cellphones in rural Senegal, every major family concession in the Diahka had a landline phone to

call relatives in Spain and France. With remittances, immigrant families in the Diakha were the first to build concrete houses outside of the town of Kedougou. They also built mosques.

The Diakha is known for retaining autonomy from Kedougou and government authorities. While today there are elementary schools in the Diakha, Muslim clerics long resisted the establishment of government-run schools in their zone, concerned about competition with traditional Qur'anic schooling in the *daara*. The Diakha has a long tradition of farming communal fields to support Muslim clerics and their students in Qur'anic education. When cotton culture was introduced into Kedougou, men and women communally farmed cotton, financing the migration of young men to Europe. Immigrants from Diakha remodeled Kedougou's largest mosque, Grand Mosquée and played a prominent role in trans-nationalizing a protest movement against state corruption in Kedougou's mineral sector (see Chapter 7).

At the height of the dry season, women from the Diakha have long descended into the Gambia River—which can be crossed without swimming by early April. With gourds attached to heavy rocks, they plunged into the water, using their gourds to scoop the rich silt of the Gambia riverbed. On shore, they panned the earth to separate gold dust from silts. In living memory, women rarely sold this gold dust. Rather, they amassed a quantity sufficient to fashion a pair of gold hoop earrings by commissioning a blacksmith specialized in gold. Beyond river panning, gold mining was never an activity of the Diahake—particularly not men. Even more than Fulbe, Diakhanke clerics were particularly vocal in their dislike for gold mining and claimed that gold mining was “impure” and profits from gold were “not blessed” by God. It was amidst considerable controversy that young men from the Diakha joined their Mande friends in Kedougou's *diouras* in the mid-2000s. In fact, as I heard from several friends from the Diakha, it

was rumored that their entry into the domain was evidence that the “Diakha was broken.” This referenced the loosening of the authority of Muslim clerics over the younger generation.

As one elder from Samecouta recounted, it was said in the past that “gold would never come out in the Diakha because the land of the Diakha was blessed,” and a “*dioura* never comes out of the blessed land. It was even rumored that Imams performed special prayers and spread Qur’anic water on the fields and forestlands used by residents of the Diakha to request God’s assistance in “preventing gold from rising to the surface.” This legacy was challenged by the discovery of gold by a youth from Samecouta in 2013 on a barren stretch of land to the north of Samecouta on a bush road. There are no villages on this road but the land is customarily considered the property of Samecouta because the village has several fields bisecting the road. The *dioura* of Samecouta was an alluvial deposit, it appears to have been created by an ancient tributary feeding the Gambia River. Gold disaggregated from surrounding hillsides settled to the bottom of the river, just as it does in the Gambia today. Over time, the tributary desiccated and was covered by several meters of laterite rock and sandy soils. The gold of the *dioura* was not visible to the naked eye; it could only be detected by the use of a hand-held gold detector. This facilitated a unique labor system in Samecouta: a small group of people dug in the *dioura* and offered a portion of their proceeds to the owner-operator of the detector. Considering the controversy that unfolded around the opening of the Samecouta mine, it is ironic that emigrants from the Diakha living in Spain imported most of the gold detectors in Kedougou. Immigrants began to import gold detectors to Kedougou in 2012, increasing in 2013 and 2014.

A village-wide meeting was organized after the discovery of gold, to which representatives of Laminina and Syllacounda were also invited. Village elders, including the Muslim clerics of the Diakha, vehemently opposed the opening of a *dioura*. They stated in the

meeting that the *dioura* would “ruin the Diakha” and “turn the youth away from the Qur’an.” In an interview, the Imam of Samecouta detailed his grievances:

We do not oppose gold. Gold can bring great benefit to people. But not in the Diakha. This is a land of Islam and gold does not go with Islam. It will bring people from the four corners of Senegal and West Africa. It will bring violence and prostitution. It will bring discord to our households. It will plant greed among us. That is what we told them.³⁶

The “youth” of the village, including the relatively young chief of Samecouta, supported the opening of the *dioura* and said they would proceed with or without the blessing of the elders. The elders refused to assist with the organization of the *dioura*, and the youth went to Mali and Guinea to recruit Imams and other ritual intermediaries who were willing to consult with a self-appointed “chief of the mines” (*diourakuntigi*) to determine the appropriate sacrifices to make.³⁷

Several interesting developments emerged after the initial opening of the *dioura* that point to the divergent ways in which different social, generational, and ethno-religious groups grapple with the moral ambiguity of gold mining in Kedougou. For one, elders and Imams from across the Diakha organized a series of *duas* (special Muslim supplications) in which they called upon God to “keep the gold underground.” In the words of one of the participants in the *dua*, “we asked God to protect our village, with all our force, we asked him to not let gold rise to the surface to turn our children away from Islam.”³⁸ At the same time as the *duas* were underway, youth running the *dioura* in Samecouta distanced themselves in interesting ways from the extractive practice itself. The youth of Samecouta did not dig in the mines. Rather, they allowed Guineans and Malians to mine the *dioura* for a daily or weekly fee and operated gold detectors, for which they received a portion of the proceeds from any mine they detected. This style of operating a *dioura* is known as “*dioura Senegalaise*.” A self-mockery of sorts, this label denotes

³⁶ Interview with Author, Saoure, Samecouta, Jun. 2, 2014.

³⁷ Interview with Author, Mamadou Diakhite, Samecouta, Jun. 4, 2014.

³⁸ Fieldnotes, 2014.

a *dioura* that generates profits from informal taxation—which Senegalese businessmen are famous for in West Africa—rather than “sweat from the brow.” However, there is also a strategic moral distancing from the work of extraction itself. By taxing the mines rather than digging for gold, youth from Samecoute avoid accusations of affiliation with the *jinne*, side-stepping altogether the question of whether *jinne* reward “traditionalist” practices with gold.

Conclusion

Narratives about the ambiguous relationship between gold and the unseen world produce a set of institutions and prohibitions that makes the indigenous governance of extraction remarkably uniform and resilient across the West African Sahel. Mande institutions of the *diourakuntigi* and *tombolman* have traveled with men and women as they pushed the frontier of indigenous gold extraction into new territories, particularly during the gold booms of the interwar period and since the late 1990s. *Jinne* narratives, I argue, create a “discursive field” that is intelligible to a host of ethnic, linguistic, and religious groups. It is one of the primary mechanisms for incorporating and regulating transnational strangers on *diouras*.

Like any powerful narratives, depending on the context and the audience, stories and beliefs about the relationship of *jinne* to gold and particular ethno-religious groups can work to exclude or include people across perceived markers of difference. In Kedougou, narratives about *jinne*, human sacrifice, and luck in the mines can become accusations about someone’s status as a Muslim or their purported ethnic “essence.” Of course, there are many reasons to question the morality of gold mining: it is dangerous, arduous work associated with mobility, prostitution, certain forms of violence, and a commoditization of social relations. In some instances, it draws young men away from agriculture, which is often ideologically celebrated as a more moral

activity than mining that contributes to communal welfare and social reproduction. In part, these concerns explain why people describe money earned in artisanal mines in places as disparate as Mongolia and Madagascar as hot and wild: this money tends to disappear quickly, spent on conspicuous consumption. Similarly, many artisanal miners in Kedougou are suspicious about the moral status of money derived from gold. Some argue that “gold money” should not be used to purchase wedding dowries, cows or other ambient beings because gold money corrupts living things. Gold money is better used to buy motorcycles, cellphones, and to build houses. In fact, *jinne* prefer gold money be re-invested in the soil—in mud, thatch, and concrete structures.

In Kedougou, gold mining has unearthed larger concerns over land, the authenticity of conversion to Islam, and the “essential” characteristics of different ethno-religious groups. Can *jinne* really sense the difference between a Muslim and a traditionalist? Can the *jinne* discern between the body of a Fulbe noble or a Tenda man who has recently converted to Islam? Who possesses the knowledge to assuage or bargain with the *jinne*—and at what spiritual danger? Can gold mining with all its attendant dangers ever be a moral pursuit—and under what conditions? These are the questions animating debates over gold, ethnicity, and the otherworld in Kedougou.

For households attempting to shift their status from one as “traditionalists” to “Muslims,” mining for gold bears social and political risks. For this reason, many residents of Kedougou attempt to distance themselves physically and morally from the *dioura*. However, in a region where it is estimated that at least half of the residents, particularly men, above the age of 16 generate an income from the *dioura*, it is only the exceptional and independently wealthy family—largely bureaucrats, teachers, and established merchants—who can separate themselves completely from the *dioura*. However, as many artisanal miners are quick to point out, even the Governor of Kedougou is “in the *dioura*” because his wife owns deep freezers. Each morning,

merchants from the *dioura* pass by her house to purchase her ice blocks, nestling them in Styrofoam coolers that balance precariously on the roofs of butch-taxis. In the *diouras*, where there is no electricity, ice will sell for a 100% mark-up above the market price in Kedougou.

While many authorities and artisanal miners I interviewed claimed to follow either the “way of Islam” or the “way of tradition,” others argued that elements of both ritual lexicons could be combined. The only non-negotiable factor was that people engage with the *dioura* honestly and by making sacrifices to *jinne*, God, or both. I close this chapter with the reflections of Abdou Sangara on this topic. Originally from the region of Kayes in Western Mali, Sangara married into one of the founding families of Tinkoto, where he is a chief of several mining teams. He has three small children and recently began constructing a concrete house.

There is always a price with the *jinne* and there is always a price with Allah. People forget this. Why? Because gold makes you blind. In the beginning, you respect the *jinne* or you respect Allah. You go to the *jalan* or you go to the *marabout*. They tell you what you need to do to get the gold. You take out sacrifices. But sacrifices are not only in the beginning. You have to take out sacrifices after you get gold. But many people forget this. You find gold and you become blind. You think you own yourself. You think you own your own head. You forget Allah. You forget the *jinne*. You even forget your parents. But Allah does not forget me. I am a Muslim and I know that Allah sees everything and he never forgets. That is why people say that gold has no blessing. There is no problem with earning money from gold. But if you forget where you got that money, you will have no blessing in heaven. Everything that you earn will stay here on this earth. You can build a hospital that will cure people. You can build a school where your children will learn. But Allah will not mark a single blessing for you in Heaven. And the things of this earth will disappear and you will be left with nothing.³⁹

³⁹ Interview with Author, Abdou Sangara, Tinkoto, Feb. 8, 2014

Chapter 7

Extraction Unbound: The Historical Anatomy of Protest in Kedougou



(Figure 33: Street protest organized by the Kedougou diaspora in Granollers, Spain, 2009)

Introduction

On March 15, 2009, Sabodala Gold Operations, a subsidiary of the Australian owned Mineral Deposits Limited (MDL), officially opened its mine and gold processing facility in Sabodala, located some 96 km from the regional capital of Kedougou.¹ Then President, Abdoulaye Wade, arrived by private airplane to receive the first official bar of gold poured in

¹ Mineral Deposits Limited signed a mining convention with the state of Senegal on March 23, 2005.

Sabodala, a symbol of the five tons of gold MDL anticipated extracting from Sabodala each year. Coverage of the ribbon cutting ceremony was repeated for weeks on Radio Senegal Television (RTS), the state television service.² For many Senegalese, it was the first time they heard of Sabodala or southeastern Senegal's potential as a major gold producer.

At the time of the ribbon cutting ceremony, MDL's mine was already embroiled in considerable controversy in Kedougou. Several months prior, on December 23, 2008, thousands of "youth" gathered on the streets of Kedougou to protest of the corruption of regional government officials in manipulating employment opportunities at MDL. The *gendarme* attempted to stop the protest but was quickly overwhelmed. Soldiers deployed from a nearby base, fired on the crowd, and killed two protestors. In the aftermath of the shootings, protestors lit police cars on fire, blocked roadways, and destroyed government buildings. Initially, state authorities doubted the capacity of the local population to carry out such the protest, accusing "infiltrators" from Gambia, Guinea, Mali or Casamance (a region in southwestern Senegal where dissidents have waged low-level guerilla warfare since the early 1990s) of inciting local youth. These theories were quickly dispelled, however. Far from an external "infiltration," what became known as "the events of 2008" ("*les évènements de 2008*") involved members of the region's most prominent households. Self-named "Le Mouvement Citoyen Pour la Défense des Intérêts de Kedougou," radio DJs, college students, veterans of the Senegalese army, migrants repatriated from Spain, and associations of mechanics and bakers organized the protest after regional authorities repeatedly dismissed or ignored their grievances about the state management of mining contracts and employment in Kedougou's budding mining industry. In other words, the protest of December 23 posed a profound "internal" threat to the Senegalese nation.

² RTS is referred to colloquially as "Rien Tout le Soir" (Nothing Every Evening) and is largely viewed as a public relations arm of the Senegalese state.

In January 2009, the Tribunal of Tambacounda condemned 19 protest participants to prison sentences for five to ten years. The court's harsh sentencing, in the aftermath of the state's violent repression of the protest, inspired a massive for the liberation of the condemned youth in which Kedougou's diaspora in France, Spain, and Dakar played a prominent role. The so-called "Kédoviens" organized demonstrations before Senegalese consulates abroad and networked with international human rights organizations based in France, Spain, and West Africa. In March 2009—the same month as the official opening of the Sabodala mine—President Wade released the prisoners by presidential pardon and erased the sentence from the protestor's legal records.

This chapter reconstructs key encounters and arguments surrounding the "the events of 2008" and its aftermath, and the internationalization of these riots by Kedougou's diaspora. As the mining industry has become increasingly transnational in scale since the 1980s and 1990s, critics of extractive industries have forged "global" networks of their own, forcing corporations to be accountable to "local" communities. As anthropologist Stuart Kirsch argues, critics of mining projects in Papua New Guinea forced BHP and OK Tedi Mining to address their concerns by globalizing their protest. Organizers created a "politics of space" by forging alliances and exchanging information with NGOs and lawyers working on three different continents.³ While operating on a much smaller scale, similar dynamics emerged during the transnational "mobilization for Kedougou." In Papua New Guinea and Latin America, it is often indigenous groups impacted by mining who organize across national boundaries.⁴ By contrast,

³ Stuart Kirsch, *Mining Capitalism: The Relationship between Corporations and their Critics* (Berkeley, 2014), esp. chap. 3. See also Kirsch, "Indigenous movements and the risks of counter-globalization: Tracking the campaign against Papua New Guinea's OK Tedi mine," *American Ethnologist*, 34, 2 (2007), 303-321; "Anthropology and Advocacy: A Case Study of the Campaign against the OK Tedi Mine," *Critique of Anthropology* 22, 2 (2002), 175-200; *Mining Capitalism; Reverse Anthropology: Indigenous Analysis of Cultural and Environmental Relations in New Guinea* (Stanford, 2006).

⁴ On transnational organizing among self-identified indigenous communities in Latin America and Papua New Guinea, see footnote 3 and Katherine Fultz, "Economies of Representation: Communication,

the Kédoviens diaspora made connections across different national spaces and with international NGOs, legal services, and activists. Between the riots of December 2008 and the Presidential pardon of March 2009, Kédoviens living elsewhere in Senegal (Tambacounda and Dakar), France, and Spain strengthened connections with each other and with extended kin networks back in Kedougou. They learned new organizing strategies and forged partnerships with lawyers, environmental activists, and independent filmmakers. A particularly important alliance was forged between Kédoviens and immigrants from Kayes, Mali living in the suburbs of France. The latter have engaged in protest against the gold mining region in Kayes since the early 2000s. Scholars have documented the participation of West African transnational migrants in political contests and in “development” projects “back home.”⁵ This chapter is one of the first to examine how these same migrants engage in transnational activism for their countries of origin.⁶ By “mobilizing” for the youth of Kedougou, the diaspora began to conceptualize themselves as “Kedoviens”: as expatriates of Kedougou rather than merely from Senegal or specific villages, families, or ethnic groups. As people often repeated in my interviews, the aftermath of the “events of 2008” was one of the first times that the region of Kedougou united around a single

Conflict, and Mining in Guatemala” (PhD diss, Anthropology, University of Michigan, 2015); Fabiana Li, *Unearthing Conflict: Corporate Mining, Activism, and Expertise in Peru* (Durham, 2015).

⁵ For example, see Beth Bugenhagen, *Muslim Families in Global Senegal: Money Takes Care of Shame* (Bloomington, 2012); Jean-Philippe Dedieu, *La Parole Immigrée: Les Migrants africains dans l'espace public en France, 1969-1995* (Paris, 2012); Abdoulaye Gueye, “The Colony Strikes Back: African Protest Movements in Postcolonial France,” *Comparative Studies of Asia, Africa, and the Middle East* 26, 2 (2006): 225-42; Abdoulaye Kane, “Senegal’s Village Diaspora and the People Left Behind,” in *The Transnational Family: New European Frontiers and Global Networks*, ed. Deborah Bryceson and Ulla Vuorella (New York, 2002); Catherine Quiminal, *Gens d'ici, gens d'ailleurs. Migrations Soninké et transformations villageoises* (Paris, 1991); Serigne Mansour Tall, “Les investissements immobiliers a Dakar des émigrants sénégalaise,” *Revue Européenne des Migrations Internationales*, 10:3 (1994), 137–151; M. Timera, *Sans-papiers africains face aux 'communautés d'origine Les lois de l'inhospitalité* (Paris, 1997).

⁶ To my knowledge, the only treatment of the role of West African immigrants in environmental and human rights activism in their regions of origin is Matthew Dell, “Undermining the ‘Local’: Migration, Development and Gold in Southern Mali,” *Journal of Intercultural Studies*, 34:5 (2013): 584–603.

cause: freeing the prisoners. In the past, political organization in Kedougou—a region characterized by decentralized, small-scale political alliances—was notoriously fractured.⁷

It is difficult to discern the influence of the transnational “mobilization for Kedougou” on securing Abdoulaye Wade’s presidential pardon or in placing pressure on the mining industry in Kedougou to be more accountable to local concerns about employment and infrastructure. The pardon was patently political: it was announced on the eve of Wade’s visit to Kedougou to campaign for upcoming local elections. But the protests placed scrutiny on Wade’s administration and on Senegalese armed forces, accused of committing crimes against humanity by firing on protestors and using torture tactics to extract “confessions” from protestors. These accusations are exceptional in the context of Senegal, where armed forces enjoy a remarkably positive reputation.⁸ In fact, the repression of the protest in Kedougou in 2008 marked the beginning a turbulent chapter in Senegal’s recent political history. Since the mid-2000s, violent street clashes between youth and police shocked the nation and seeded concerns in the “international community” that Senegal’s reputation as a beacon of peaceful democracy in West Africa was threatened.⁹ By networking with human rights lawyers and organizations, Kedougou’s diaspora exploited the concern of the Senegalese state with its (exceptional) reputation as a peaceful and democratic state within West Africa. At the same time, the state attempted to frame the riots as exceptional—tied to a region that had, in the words of the prosecutor who represented the state in trial, “temporarily stepped outside of the rule of law.”¹⁰

⁷ On this legacy of political decentralization, see the Introduction and Chapter 1.

⁸ On this point, see Michael Ralph, *Forensics of Capital* (Chicago, 2015).

⁹ On youth protest movements in Senegal in the 2000s, see Rozy Fredericks and Mamadou Diouf, *Les Arts de la Citoyenneté au Sénégal: Espaces Contestés et Civilités Urbaines* (Paris, 2013) and *The Arts of Citizenship in African Cities: Infrastructures and Spaces of Belonging* (New York, 2014).

¹⁰ Boubacar Dembo Tamba, “Kedougou: Procès des ‘émeutes’ la région en sanglots, les Kédovins de Tamba sonnent la mobilization,” *Tambacoundainfo* (Senegal), Jan. 11, 2009.

Participants in the 2008 riots in Kedougou referred to themselves as “the Youth of Kedougou” (*la Jeunesse de Kedougou*), as did journalists who reported on the event. The term “youth” merits attention here because of its explicitly political valence. In Senegal, as in much of sub-Saharan Africa, youth is best understood as a relational, historically constructed social category that is context specific.¹¹ Youth is often used to refer to men and women from age 15 to 40 who have not yet transitioned into the social and economic status of “adulthood,” which often means marriage, having children, securing employment and, in some cases, establishing a household independent from your parent’s compound.¹² With shrinking formal employment opportunities and worsening economic conditions in much of West Africa, many people have been unable to secure the education or salaried jobs that would enable a transition into adult status. Many young men, in particular, find themselves interminably categorized as youth.¹³ Since the widespread involvement of college-level men and women in protests around the controversial 1988 elections in Senegal, youth in Dakar have been key constituents in electoral contests. Self-identified youth led a number of protest movements during Abdoulaye Wade’s second term as president, which was marked by popular discontent with economic stagnation, political scandals, and curbs on democratic practice. These protests reached new heights during the 2012 presidential elections, when activists mobilized the category of youth to critique

¹¹ Deborah Durham, “Youth and the social imagination in Africa,” *Anthropological Quarterly* 73:3 (2000): 113–120.

¹² The value of establishing an independent from the household of one’s parents varies greatly based on gender, birth order, and ethno-religious norms in Kedougou. For women, the transition into adulthood is marked by marriage and childbirth, which is often associated with moving out of their father’s compound. Eldest sons are expected to live in and maintain their parent’s primary residence.

¹³ On youth as a contingent political and social category in contemporary Africa, see footnote 10 and Jean Comaroff and John Comaroff, “Reflections on youth: From the past to the postcolony,” in *Makers and Breakers: Children and Youth in Postcolonial Africa*, ed. Honwana and F De Boeck, 19–30 (Trenton, 2005). Fredericks and Diouf trace the emergence of “youth” as a political category in Senegal to street protests and the street clean-up movement (*Set-Setal*) during the controversial elections of 1988. Rozy Fredericks and Mamadou Diouf, *Les Arts de la Citoyenneté au Sénégal*. See also Rosalind Fredericks, *Doing the Dirty Work: The Cultural Politics of Garbage Collection in Dakar, Senegal* (PhD Diss., Geography, University of California, Berkeley, 2009).

Wade's age at the time (estimated at 90) and as a metaphor for how out of touch he was from the realities faced by a nation in which over half of all citizens are under the age of 40.¹⁴

By referring to themselves as “the youth,” participants in the 2008 riots articulated a national political identity and emphasized how the lack of employment opportunities in their region prevented young people from transitioning into respectable adulthood. But it would be misleading to classify “the events of 2008” as one node in an “era of youth protest” under Abdoulaye Wade's presidency.¹⁵ Youth protests in Dakar mobilize a national identity and political platform. A popular example is *Y'en a Marre* (“We Have Had Enough” in Wolof), a movement launched by Senegalese hip-hop artists during the 2012 presidential campaigns.¹⁶ By contrast, “the youth of Kedougou” situated their grievances in the very specific historical relationship of their region to the Senegalese state. This was *not* a national movement. Rather, protestors in Kedougou and in its diaspora emphasized the exceptionalism of Kedougou within Senegal. Kédoviens folded grievances about the mining industry into a much longer pattern of the state's exploitation of the region's resources and failure to invest in its infrastructure.

¹⁴ Wade was increasingly criticized as autocratic and authoritarian during his second term. Ironically, youth mobilization was central to Abdoulaye Wade's election to the presidency in 2000, in what was considered a landmark turning of the political tide after 40 years of Socialist Party rule. See Rosalind Fredericks, “The Old Man is Dead”: Hip Hop and the Arts of Citizenship of Senegalese Youth,” *Antipode* 46:1 (2014), 130-148.

¹⁵ Journalists and scholars have either characterized the 2008 riots as symptomatic of civil unrest under Wade's second presidential term or as evidence of the so-called “resource curse”— the apparent paradox that places with mineral “wealth” are often plagued by poverty and inequality. On the former thesis, see Alain Bertho, *Anthropologie du présent* (blog); Khassoum Diallo, “Après Kedougou, a qui le tour?” *Le Quotidien* (Senegal), December 12, 2009; Najib Sagna, and Soly B. Dabo, “Sénégal: Après Guédiawaye, des émeutes éclatent a Kedougou!” *Walfadjiri* (Senegal), December 24, 2008; and United States Agency for International Development, *Democracy, Human Rights and Governance: Assessment of Senegal* (Washington, DC, 2003). On the natural resource curse thesis, see Amnesty International, *Mining and Human Rights in Senegal: Closing the Gaps in Protection* (London, 2015); Mouhamadou Lamine Diallo, “Mines et dynamiques spatiales dans le Sud-est du Sénégal: l'exemple de la communauté rurale de Khossanto,” (Mémoire, Géographie, Université Gaston Berger de Saint-Louis, 2006); Faty Mbodj, “Boom aurifère et dynamiques économiques entre Sénégal, Mali et Guinée,” *EchoGéo*, 8 (2009); Isabelle Greig, “Le Sénégal oriental à l'aube du développement minier: quels enjeux pour les collectivités locales?” (Mémoire, Ecole Normale Supérieure de Lettres et Sciences Humaines de Lyon, 2006).

¹⁶ Rosalind Fredericks, “The Old Man is Dead.”

In the aftermath of the 2008 protests, the “mobilization for Kedougou” focused on pressuring the president Abdoulaye Wade to release the protestors from jail. But the diaspora, like the participants in the local protest, also generated an alternative moral vision for how profits from mineral extraction in Senegal should be managed and redistributed. As detailed below, protestors in Kedougou and abroad demanded greater investment by the state in the region’s infrastructure—namely, roads, health posts, and schools. They also wanted more local involvement in the governance of mining contracts, the conduct of social and environmental impact assessments, and in the management of funds provided by the mining industry for “local” development. Moreover, they wanted respect, arguing that the state treated locals as uneducated and politically and fiscally immature. A persistent theme to emerge from oral interviews with farmers, teachers, and businessmen from Kedougou is that “*les nordistes*” (Senegalese from the coast and the central-west peanut basin) working for the regional government and as skilled workers within the mining industry attempted to fool local residents. It is politically volatile in the context of contemporary Senegalese politics for protestors to draw divisions between “northerners” and “southerners,” because this is the contentious language used by residents of Casamance who participated in interspersed guerilla warfare against the Senegalese state in the 1990s. Casamance is located to the south of the Gambia and is effectively severed from Dakar. While the grievances of the insurgents were complex, they were in large part animated by a sentiment that Dakar exploited the region’s natural resources and that the Casamance, in turn, benefited little from national infrastructural development. In fact, the Casamance conflict challenges Senegal’s widely celebrated reputation as one of West Africa’s few operational democracies and one of the only states where there has not been a “major” civil war. Within Senegal, Kedougou shares key features with the Casamance. For one, its population is ethnically

and, in some zones, religiously distinct from Senegal's economic and cultural heartland: the Wolof-dominated coast and peanut-basin. Secondly, geography of colonial borders isolates both regions from a highly centralized state and cultural production, which is concentrated in Dakar. During the tense months leading up to the protests in December 2008, regional politicians argued that, "Kedougou could become the next Casamance."¹⁷ This comparison was a thinly veiled threat and may have contributed to the state's harsh repression of the 2008 protest.

In this chapter, I rely heavily on my personal relationships with friends and colleagues from Kedougou and from its diaspora communities in France and Spain. I left Kedougou in August 2008 after working for two years in the region as a United States Peace Corps Volunteer. Several months later, "the events of 2008" found me working in Brussels, Belgium. I followed the aftermath of the riots closely through social media, various Senegalese news outlets, and frequent phone and email communication with Senegalese and American Peace Corps colleagues and friends. As I detail below, Kédoviens living in France and Spain played a prominent role in mobilizing funds and political support for the youth who were condemned and imprisoned in Tambacounda. I joined these efforts, traveling twice to Paris and once to Barcelona to attend meetings organized by Kédoviens there. These trips deepened networks I had already established in Senegal. In France and Spain, I met cousins, brothers, and friends of families I knew from my time in the Peace Corps. I stayed in the apartments of Kédoviens, attended meetings of hometown organizations, and conducted interviews with immigrants about their involvement in the "mobilization for Kedougou" and about their own stories of migration.

Over the years, I have maintained contact with several of these Kédovien families in Europe. When I returned to Kedougou for field research in 2013, I visited the extended families

¹⁷ See interviews with Mamadou Guirassy, (Former) Mayor of Kedougou, Kedougou, Jun. 15, 2014; and El Hadj Amadou "Hadji" Cisse, (Current) Mayor of Kedougou, Feb. 5 & Jun. 23, 2014.

of the immigrants who so generously hosted me in 2009. I also conducted interviews with organizers of the 2008 protest in Kedougou, regional politicians, and other influential local leaders who were involved with negotiations with the government to release detained protestors from prison. Interviews I conducted in 2009 in Europe and in Senegal in 2013 and 2014 comprise the primary sources for this chapter. I triangulate these first-hand accounts and oral interviews with articles produced by the Senegalese news media, independent filmmakers and activists, and international human rights organizations that reported on these events.

DJ Monex, Kedougou, 2008

In 2008, Aliou Monékhata, then in his mid-30s, was a popular DJ for a weekly reggae show on Radio Dunia, then Kedougou's only private radio station.¹⁸ On Wednesday evenings, Aliou—whose radio alias was DJ Monex—played a mixture of West African and Caribbean songs and promoted national and local cultural events. Monex is tall and lithe, and bears a wide and infectious smile. He is from an old Diahanké family in Kedougou, and is fluent in Pulaar, Malinké, Wolof, and some Bassari. His written and spoken French is exceptional and effortless, a skill he nurtured as a student in Dakar and during stints on Dakar-based radio shows. Monex would take calls from listeners during his show. They dedicated songs to sweethearts and friends. In 2008, cellphone reception was becoming increasingly widespread in Kedougou in 2008, but it was still difficult to charge phones outside of the towns of Kedougou and Saraya. Song dedications substituted for calls to relatives in distant villages. Monex also engaged his callers in

¹⁸ The major radio news station in Kedougou was the *Radio Rurale*, which the state partially funded. Radio Rurale featured official news broadcasts from Dakar, and local reports covered regional news. Since its founding in the late 1990s, Radio Dunia is the most popular private radio station in Kedougou. Residents of rural villages, in particular, frequently listened to Radio Rurale and Radio Dunia. It was common for these radio stations to provide the backdrop for afternoon tea (*atayaa*), cultivating fields, or meal preparation. DJ Monex's shows were extremely popular in the mid and late-2000s.

conversation about their ambitions and cultural events organized in Kedougou and in Dakar. Speaking under anonymity, callers also complained about regional infrastructure and politics. In the summer of 2008, conversation centered on problems of employment in Kedougou's gold exploration camps, particularly at MDL, which was in the process of constructing a mill.

Sabodala is an open-pit mine. Bulldozers and other large-scale excavating equipment were used to perforate a hole in the earth, measuring one kilometer long, 600 meters wide, and at least 250 meters deep. This style of mining relies on a small group of experts—mining engineers, economists, machinists, and geologists—and relatively few unskilled laborers.¹⁹ As with open-pit gold mines elsewhere in the world, unskilled labor is required primarily during the construction phase of the mine.²⁰ In 2006, MDL began replacing its exploration camp with a facility designed to house workers and process gold during the estimated 10-year life span of the mine. MDL hired masons, electricians, drivers, and laborers to construct worker accommodations, dining halls, geological laboratories, storage spaces for heavy machinery, and roads linking the mine to the factory and tailings pools. MDL was transparent about the uneven labor demands of the mine, but they announced its intention to favor locals for unskilled labor and to train locals for semi-skilled work, such as driving bulldozers and operating other heavy machinery.²¹ Men from

¹⁹ On the different labor requirements of mining phases and the relationship of different “phases” to labor organizing, see Chris Ballard and Glenn Banks, “Resource Wars: The Anthropology of Mining,” *Annual Review of Anthropology*, Vol 32 (2003), 287-313; Kirsch, *Mining Capitalism*; Jessica Smith and Frederico Helfgott, “Flexibility or exploitation? Corporate social responsibility and the perils of universalization,” *26:3 Anthropology News*, (June 2010), 20-3.

²⁰ On the politics of labor employment in open-pit mines elsewhere in the world, see Fabiana Li, *Unearthing Conflict*; Kirsch, *Reverses Anthropology*.

²¹ A. Seck, “Or de Sabodala, les populations menacent de mettre le feu aux installations des exploitants,” *Le Populaire*, March 6, 2007; *Sud Quotidien*, “Rébellion contre les compagnies aurifères de Kedougou. *Sud Quotidien*. November 30, 2007; Abdou Latif Koulibaly, “Mine d’Or du Sabodala, La Nébuleuse autour de MDL.” *EnQuete Weekend Magazine*, September 14-18, 2007.

neighboring villages moved to Sabodala in the hope of finding work.²² In 2008, the daily wage rate at Sabodala was roughly US \$6, which was ¼ higher than other forms of local wage labor.

MDL employed a rotation system for employment: day laborers each worked for two weeks of the month, with the idea that some workers would transition into more permanent contracts over time. Every Saturday, a committee met to organize unskilled labor recruitment at MDL. The committee was comprised of company representatives, the chiefs of the six villages closest to the mines, a youth representative, and the sub-prefect of Saraya—an important figure who I will return to below. Each week, chiefs presented a prioritized list of workers and a hiring roster was drawn up based on MDL's demand for labor and a fixed geographic repartition of jobs across the villages. While inviting a certain degree of clientelism and corruption, this system also distributed power across different authorities to recruit and vet laborers for the mines.

Callers into DJ Monex's reggae show were disgruntled about the paucity of overall employment at MDL, but their central concern was the implication of Saraya's sub-prefect in labor recruitment. Callers argued that the sub-prefect of Saraya and his superior, the prefect of Kedougou, manipulated the outcome of the selection process to prioritize their relatives and friends from elsewhere in Senegal for positions as unskilled laborers. Callers complained of depositing job requests week upon week without a response. Meanwhile, they claimed, busloads of men from elsewhere in Senegal were ushered directly into the mines to work two-week rotations. Since this was the typical rotation for unskilled laborers, many assumed that government authorities were allocating unskilled labor positions to their relatives and friends.²³

²² The size of MDL's workforce varied considerably and figures are disputed. In April 2008 MDL probably employed about one thousand people, of whom roughly one third were from the communauté rurale of Khossanto. I draw these figures from Martin Williams, "The Gold Standard of Governance: Mining, Decentralization, and State Power in Africa." *Politique Africaine* 17 (2010), 127-148.

²³ It is unclear whether the busloads of men were skilled or unskilled laborers. The point is that locals perceived state authorities were giving unskilled labor positions to people from outside the region.

Understanding the political implications of the role of the sub-prefect and prefect in labor recruitment requires a basic knowledge of the structure of sub-national government in Senegal. Senegal is a unitary, non-federal state with three types of local governments: urban communes, rural communities (*communautés rurales*), and regions. In September 2008, Kedougou was declared the fourteenth region of Senegal, but at the time of the December 2008 riots it was still governed as a department of the region of Tambacounda. The Sabodala gold mine was in the rural community of Khossonto, the arrondissement of Saraya, and the department of Kedougou.²⁴ Both locally elected councils and state-appointed officials preside over each of these political units. Rural councils, which are selected on a party-based system during local elections, represent rural communities.²⁵ Importantly, the rural council of Khossonto had no role in the labor recruitment system at Sabodala. Rather, only customary “chiefs” (who have no legal standing in contemporary Senegalese law) and state-appointed officials were involved in the recruitment of unskilled labor. The lack of elected officials in labor recruitment is symptomatic of the marginalization of rural councils in much of Senegal. Elected rural councils have existed since rural communities were first created in 1972, but have had few meaningful responsibilities until the sweeping “decentralization” reform of 1996 that transferred nine major “competencies” to local government. However, a comparable transfer of real authority has not met this massive nominative transfer of responsibility. Rural councils generally have low technical capacities and must have all of their actions approved by state-appointed authorities.²⁶ Rural communities have little fiscal base and are dependent on external donors for revenue. Further, the state does not

²⁴ Once regionalization was fully implemented, Saraya became a department of the region of Kedougou.

²⁵ Other elected councils on the sub-national level include councils of urban communes (*conseil de commune*) and regional councils (*conseil régional*).

²⁶ State-appointed officials include governors of regions, prefects of departments, and sub-prefects of arrondissements, which group together several rural communities.

hesitate to intervene even in sectors that were nominally transferred. These issues are most pronounced in poor and geographically isolated areas with low literacy rates like Kedougou.²⁷

The lack of power of elected officials in Kedougou is important background for the riots of 2008 and its aftermath. In Kedougou, the long-standing pattern is that state officials—who have real authority in the zone—are filled by *nordistes*. This tendency began under colonialism, when the French appointed a coastal Wolof as the “native chief” of the Oriental Provinces in 1918. The dominance of *nordistes* in positions of power contributed to a local sentiment that Senegalese elites from heartlands of state power—the coast and the central-west peanut basin—govern and exploit Kedougou for their personal profit and that of a distant state. Stated otherwise, accusations of the manipulation of the employment process by the sub-prefect of Saraya reinforced a pre-existing grievance that non-local interests profit from Kedougou.²⁸

Regardless of if the sub-prefect of Saraya manipulated the employment process at MDL, the governance of mining contracts in Senegal more broadly provided ample justification for the pervasive sentiment of marginalization among locals. Senegal’s 2003 Mining Code concentrated decision-making authority in the hands of the centralized government, leaving little room for local decision-making. The most important decisions about the MDL project, like other mining projects in Senegal, were elaborated during negotiations between MDL and the state. Local residents and elected officials played no part in these negotiations; rather, they were invited to a “signing ceremony” in Dakar after the contract terms were already determined.²⁹ The only moment in which the input of local communities is legally required is during social and

²⁷ See Williams, “The Gold Standard of Governance.” Cf. decentralized governance of natural resources in other sectors: Amy R. Poteete and Jesse C. Ribot, “Repertoires of Domination: Decentralization as Process in Botswana and Senegal,” *World Development*, 39: 3 (2010), 439-449; Jesse C. Ribot, “Authority over Forests: Empowerment and Subordination in Senegal's Democratic Decentralization.” *Development and Change* 40, no. 1, (2009): 105-129.

²⁸ Ibid. See Introduction.

²⁹ The Ministry of Mines and Geology represents the state in these negotiations.

environmental impact studies. According to the Mining Code, these studies are supposed to be carried out before the granting of an exploitation permit. Yet in the case of the Sabodala mine, MDL conducted the study after the state granted the company a mining permit—not before. This meant that the needs and concerns of “the community” were not factored into the terms of the mining convention. Finally, elements of the Mining Code openly conflict with the legal competences of rural communities. Decentralization reforms transferred jurisdiction to local governments over nine sectors, including public lands; land use planning; and environment and natural resources.³⁰ Yet the 2003 Code contradicts these decentralized competencies because it gives the state absolute sovereignty over the sub-surface. Indeed, in Kedougou, the Ministry of Mines has consistently usurped local jurisdictions over land management in allocating rights to the sub-surface via exploitation and exploration permits.³¹ In sum, the governance of mining conventions concentrates decision-making power in the hands of state-appointed officials, often disregarding the legal rights of local communities and their elected representatives. Even when local representatives were consulted in these decisions, it was widely perceived that their vote was “bought” through extraordinary “per diems” for participating in meetings with MDL.

Callers into DJ Monex’s reggae show wanted greater transparency not only of the recruitment of unskilled labor, but also of the management of the so-called “Social Mining

³⁰ The other sectors include education, literacy, promotion of national languages; health; social action; youth, sports, and leisure; land use planning; planning; and urban planning and housing.

³¹ Rural councils do retain legal jurisdiction over allocating spaces for exploration companies to build structures, such as geological camps, and to clear forests for these camps. However, state-appointed officials must approve these decisions. To date, there is no case of a rural community (CR) rejecting the request of a mining company to build a structure or road. This is commensurate with a larger pattern of the CR abiding by the wishes of state-appointed officials who often act as relays for the interests of the Ministry of Mines within the region. There are a number of reasons for the weakness of decentralized authorities in Senegal that has little to do with the particular features of the mining sector. Particularly in marginal areas, lack of formal education and training leads many rural councilors to lean heavily on state-appointed officials to interpret legal codes. For example, in Khossonto (the CR in which the Sabodala mine is located), only one of 24 councilors has a secondary school diploma.

Fund” (*Fond Social Minière*).³² The Mining Conventions signed by the state with mining companies—including MDL and other exploration companies active in Kedougou at the time—obliged these companies to spend money on social programs.³³ Until early 2008, mining and exploration companies had near-total discretion over the funds. Protestors demanded that local populations control these funds. Discontent over these funds inspired a localized protest in November 2007 when residents of 24 villages in the rural community of Khossonto protested that these funds were mismanaged. For over six hours, roughly 800 men blocked the roads between Khossanto-Sabodala and Sabodala-Makhana, the major access routes for MDL and Oromin, another large gold exploration company. Protestors lit tires on fire in front of the gates of MDL’s camp. The crowd stripped and beat the President of Khossonto’s Rural Council when he attempted to disband the protest. The spokesperson for the protest argued that Khossonto had seen no benefits from the Mining Social Fund, which was supposed to provide improved road infrastructures, schools, grain-pounding machines, and water access for villages near exploration camps. The sub-prefect of Saraya and the prefect of Kedougou visited the villages involved with the protest to discuss employment and the social fund before protestors lifted their blockade.³⁴

Tensions rose again at the close of the rainy season of 2008. This is the “hunger season” in Kedougou, when rural households run low on food supplies from the previous year but have yet to reap the fruits of a new harvest. DJ Monex’s radio show became the primary “place”

³² Apparently, some Mining conventions provisioned for how this money was to be spent, but since these conventions were not made available to the public, rumors proliferated about the quantity of these funds, where they physically resided, and how they were used. Part of the confusion was created by the fact that these funds were multiple (each company had its own fund). During the protests of 2007 and 2008, locals accused bureaucrats in Dakar of “eating” the social funds. Fieldnotes 2008 & 2013. Representative press coverage includes: Abdou Latif Koulibaly, “Mine d’Or du Sabodala”; Boubacar Dembo Tamba, “Kedougou: A une an de la fin du programme social minier: L’association Kedougou action s’interroge,” *Quotidien* (Senegal), July 14, 2012 and “Que cache t-on aux journalistes ayant effectué le déplacement ce Samedi sur Sabodala?” *Sud Quotidien*, July 9, 2007.

³³ For 2007-2009, funds included US \$425,000 annually for MDL and US \$600,000 for Oromin.

³⁴ *Sud Quotidien*, “24 villages se rebellent contre les sociétés aurifères à Kedougou,” Nov. 27, 2007.

where youth living in these villages, and working in exploration camps, aired their grievances. In September 2008 Monex went to Sabodala, renting a room with several men seeking employment, to investigate the grievances of callers to his radio. For several weeks, each morning Monex traveled with young men to check on the status of their requests for employment with village chiefs and the sub-prefect of Saraya. According to Monex, he witnessed men informed they were selected for two-week contracts one day, only to find their names removed from the list when they arrived at MDL the next day. Confirming the accounts of his callers, Monex also witnessed busloads of young men, originating from elsewhere in Senegal, bussed directly into the MDL compound while hundreds of locals waited at the gates for employment. Monex documented other problems with work conditions at MDL and at a diamond drill subcontracting company he worked for as a day laborer. Before returning to Kedougou, Monex called a meeting with youth from Sabodala to discuss their grievances. Shortly after the meeting, a number of employees from Kedougou were fired on dubious grounds by MDL personnel. Monex suspected that the employees were punished for their involvement in the meeting.

Le Mouvement Citoyen Pour la Défense des Intérêts de Kedougou, December 2008

Other concerned citizens traveled to Sabodala to investigate grievances accumulating against the gold mining sector. Two students from Kedougou then studying at the Université de Cheikh Anta Diop in Dakar traveled to Sabodala during the rainy season of 2008 to investigate reports from their peers about unfair recruitment of unskilled labor at MDL. College students from Kedougou also had complaints of their own. It is notoriously difficult for residents of Kedougou to attend university in Dakar due to the high cost of housing. While this is problem for students from outside of the capital, it is particularly acute for those from poor families or from

distant regions who are less likely to have family members in Dakar who can host students. In 2008, the Indian iron-mining giant, Arcelor Mittal, was leasing a building in Dakar to house college students from Kedougou. At the time, Arcelor Mittal held a permit for iron exploration covering the far southeastern corner of Kedougou and was negotiating with the state for a permit to exploit the region's iron and build a railroad for evacuation to the coast.³⁵ Other companies exploring for gold in the region also paid for a certain number of scholarships for promising students from Kedougou and subsidized building utilities and fees.



(Figure 34: Burning tires and debris on the streets of Kedougou, December, 23, 2008)

In the fall of 2008, students complained that the building was poorly maintained and utilities were overdue, leading to electricity cuts and threatening student scholarships. They also

³⁵ Arcelor Mittal eventually entered a protracted legal battle with the Senegalese state over the terms of the Mining Convention for the exploitation of these iron ore deposits. They eventually pulled out of Senegal although, as of 2014, they continued to pay for the apartment building in Dakar.

accused the prefect of Kedougou of nebulously managing funds allocated by Arcelor Mittal.³⁶ Echoing the demands of the 2007 protestors in Khossonto for transparency in the management of the Social Mining Fund, students wanted the money to be paid directly to a student-run treasury so they could allocate the money for utilities and medical and school fees for students in need. Students decided to air their grievances during a trip home from Dakar to celebrate Tabaski (l'Aïd El Kébir). Arriving in Kedougou by bus on December 7, 2008, they set tires on fire at the principal cross-section of town. The police chief called students to his office and listened to their complaints. The protestors requested a meeting with the prefect of Kedougou. When the prefect ignored these requests, students began to organize with DJ Monex and other civic groups.

These diverse individuals called themselves the “Mouvement Citoyens Pour la Défense des Intérêts de Kedougou.”³⁷ The movement drafted an open letter to the President of the Republic and governmental authorities in Tambacounda and Kedougou. Their letter articulates many of the grievances aired on DJ Monex’s radio show and by protestors in Khossonto in 2007: the passing over of locals for employment and lack of transparency in the use of Social Mining Funds.³⁸ The letter writers framed their grievances within a long history of Kedougou’s marginalization by the state. The opening paragraphs establish this rhetorical strategy.

³⁶ Students from Kedougou in Dakar were organized around the “Amicale des Eleves et Etudiants Ressortissants de Kedougou a Dakar.” Many members of the “Amicale” lived in the Arcelor Mittal building, located in Medina—the colonial African neighborhood of Dakar.

³⁷ The “Mouvement” was comprised of the following organizations: Le Conseil Départemental de la Jeunesse; Le Groupement pour l’Insertion des Anciens Militaires, Le Mouvement Sénégalais pour le Développement de Kedougou; Le Rassemblement pour le Progrès de Kedougou, L’Association pour la Sauvegarde et la Protection de Kedougou, Le Syndicat Locale de Chauffeurs, l’Association des Boulangers Traditionnels, L’Association des Bouchers de Kedougou, Le Syndicat Local des Travailleurs Sénégalais, Le Forum Social Local de Kedougou, Le Réseau des Organisations Paysannes du Dimma, Les Associations de Quartiers, Les Organisations Féminines Autonomes Locales, L’Association des Rapatriés d’Espagne, La Société Civile Rurale.

³⁸ Copy of letter in possession of author. There was also a memorandum drafted by a diverse group of concerned citizens and submitted to the prefect of Kedougou in August 2007.

...we present to you this Memorandum as an open letter, so that you are informed of the major preoccupations that prevent improvement of the socio-economic conditions of the laboring masses of the new region of Kedougou in general and of its youth taken hostage by endemic unemployment that plunges us each day deeper into desperation [...]

Mr. President, the truth is that our locality, since independence has always lived in injustice and that we estimate today that Kedougou, despite its visibility on the national level for its numerous riches, continues to see its population submitted to all types of injustice that are the deep causes of its poverty as is revealed by all of the reports produced by the United Nations until the present day. [...]

The letter goes on to accuse the state of treating the residents of Kedougou as children, as fiscally and politically immature, and easily manipulated. Consider the following passages:

In effect, in studying the mining code, we realize that investors in the sector that are invading us have too many advantages and, to our detriment, despite the Social Mining Funds that our Ministers have vaunted and that, in our opinion, pose serious problems in its implementation, because it is managed by a unity lodged in the Ministry of Mines and Geology, as if we were as of yet too immature and incapable to decide for ourselves [...]

The population of Kedougou is in a psychosis, stressed and each day doubting, at present there is not even a paved route that links the regional capital and Khossonto to at least facilitate hospital evacuations and the movement of the population, Kedougou has always been dark at night, there are serious strategies to make the town more amenable to human development, nothing but declarations of intent by our Ministers who with the complicity of RTS (Senegal national television) show us the gift of grain pounding machines here and there, a strategy that looks increasingly each day like a true scam. [...]

The “scam” of RTS refers to the gifts of mining companies to local communities, which often take the form of deep-bore wells, grain pounding machines, and village-level garden projects. While these projects were appreciated, protestors believed they were insufficient based on the revenues mining companies derived from the sub-soil. The letter called for the decommissioning of the sub-prefect of Saraya, transparency in the management of the Social Mining Fund, employment for regional army veterans as private security guards for mining companies, and a review of the environmental and social studies impact assessment for the Sabodala mine, increased transparency in the management of finances for the student building in Dakar, and better government enforcement of funds for environmental rehabilitation of mining sites.

In addition to these concrete actions, the letter also demanded the government treat “a locality that was formerly banished” with dignity, respect, and equality. In concluding, the writers underscored that the “present memorandum does not constitute a catalogue of recriminations or sterile critiques,” but a tool for building a “new Kedougou.”

It is above all, a tool of advocacy for the youth of Kedougou that would like to contribute to the edification of the region, on the basis of their expertise and of comparative advantages [...]. Also, it is written in the words of youth, simple words, to say in our own language how we perceive the realities of their day and what are their proposals.

According to organizers of what became “the events of 2008,” they had no intention of protesting and burning government property. But anger escalated after the prefect rejected requests to meet with them and to authorize a peaceful protest. On December 18, 2008, during his reggae radio show Monex called on “the youth” of Kedougou to attend a meeting to discuss the demands of the open letter by The Movement. On December 23, DJ Monex and other leaders of the “Mouvement” met in a park adjoining Kedougou’s central market. Several hundred “youth” had assembled by mid-morning and others stayed in touch by cellphone. After a *gendarme* mocked the group for organizing a “sitting,” the crowd grew angry. When the *gendarme* returned to the station for backup, the group dispersed into the streets and called on friends to join them. The timeline of subsequent events is contested. As the number of protestors grew (up to 2000 according to some estimates), the *gendarme* called on the army, which maintains a base in Kedougou, for reinforcements. A soldier fired into the crowd and killed a young man, Sina Sidibé. Protestors exploded with anger, setting fire to the personal cars and infrastructures of government officials, including the office of the prefect and mayor, the education inspectorate, the court, the departmental agricultural service, and the post office. Several protestors stormed the fence of the *gendarme* and lit police vehicles on fire.

Most protestors were “youth” between the ages of 15 and 30, but teachers and merchants (some of whom were well into their 40s) also took part. Most of the protestors had secondary education: they were not from the poorest households in Kedougou, nor were they from rural villages in immediate proximity to Sabodala mine. Most came from urban households and many lived part-time in Dakar or elsewhere in Senegal. Thus, in contrast to the protest in Khossonto in 2007, “the events of 2008” announced the right of the entire region of Kedougou—its urban and rural citizens, both educated and illiterate—to benefit from the extractive industry.

Armed forces were clearly overwhelmed by the scale of the protest. Reinforcements from Tambacounda did not arrive until evening. By then, most protestors had retreated to their homes and others fled to distant villages, or even to Mali and Guinea, to hide with relatives. The night of the protest-turned-riot, armed forces forcibly searched households for anyone suspected of organizing the protest and lighting fires. Dozens of suspects were beaten, others forced into revealing the names of the organizers of the protest. There were reports of hidden deaths at the hands of the armed forces. Door-to-door raids continued for days. Authorities initially searched for “mercenaries” who incited the protest, but they found none.³⁹ Rather, armed forces rounded up and detained 33 farmers, students, merchants, drivers, bakers, radio DJs, and car mechanics.⁴⁰

³⁹ In particular, Senegal’s Ministry of the Interior, M Cheikh Tidiane Sy, accused mercenaries from Guinea, Mali, Gambia, or even Ghana of infiltrating Kedougou and inciting the riot. He was severely critiqued for these remarks, which he later rescinded. Alain Bertho, *Anthropologie du présent* (blog).

⁴⁰ The most detailed press coverage of the protests can be found on the following blog, *Kedovins de France* (blog), <http://kedovinsdefrance.over-blog.com/article-26761687.html>.

The Trial, Tambacounda, January 2009

Most residents of Kedougou deplored the violence of the riot, but considered the grievances of the protest legitimate. Coverage of the protest aired complaints not only about Kedougou's mineral sector, but also about the region's endemic historic marginalization by the state. After a trial date was set for mid-January, prominent Kédoviens in Tambacounda and Dakar appealed to human rights groups for legal assistance.⁴¹ Kedougou's diaspora in France and Spain sent money for legal fees and recruited human rights lawyers to represent the detainees.⁴²

On January 9, 2009, 29 of the original 33 detainees were brought to trial. The prosecutor, Serigne Bassirou Guéye, argued that the “conspiracy against the security of the state” (“*complot contre la sûreté de l'Etat*”) was pre-meditated. Guéye accused the protestors of being “lost sheep” who committed the “pillage of the century” in Senegal. In terms of the actual grievances of the protestors, the prosecution emphasized the “xenophobia” of the protestors, particularly the authors of the open letter who accused government officials of benefiting from gold mining at the expense of locals.⁴³ Guéye masterly inverted the claims of Kédoviens: that they and their ancestors were the victims of discrimination and xenophobia at the hands of the state.⁴⁴ Guéye reminded the audience that the Sabodala mine was for the benefit of all of Senegal, not only

⁴¹ Ligue Internationale des Droits de l'Homme and l'Organisation Nationale des droits de l'homme. See Boubacar Tamba, “Kedougou: Procès des ‘émeutes’ la région en sanglots, les Kédovins de Tamba sonnent la mobilization.” *Tambacoundainfo* (Senegal), January 11, 2009.

⁴² Moustapha Barry, “Suites aux émeutes de Kedougou: Me Sidiki Kaba commis pour défendre les manifestants,” *Walfadjiri*, December 30, 2008.

⁴³ According to numerous interviews I conducted in 2014 (and rumors I heard in 2009), government officials posted to Kedougou accused the local population of xenophobia toward outsiders, particularly from the north. This was a clever reversal of the complaints of Kédoviens—that they were the victims of xenophobia and mistreatment at the hands of Senegalese from other regions.

⁴⁴ Cf. xenophobia by post-colonial African states toward particular populations, see Peter Geschiere, *The Perils of Belonging: Autochtony, Citizenship and Exclusion in Africa and Europe* (Chicago, 2009); Mike McGovern, *Unmasking the State: Making Guinea Modern* (Chicago, 2012).

Kedougou. State officials and mining companies have long used the language of national benefit to justify the appropriation of Kedougou's natural resources, often to the detriment of Kedougou.

Ultimately, the magistrate of Tambacounda—under the supervision of the regional judge—condemned 19 detainees to prison sentences ranging from five to ten years. DJ Monex and the representative of the young veterans of Kedougou were given a sentence of seven years. People in Kedougou were shocked by the severity of the court's sentences, particularly when the armed forces were clearly responsible for the death of two protestors. Despite this, there were no street demonstrations in Kedougou in the aftermath of the sentences. The harsh sentences succeeded in instilling profound fear in the locality—in popular memory, the town “went silent.” Local journalists even stopped reporting on the mining sector and on the protests. Fear and repression in Kedougou increased the sense of responsibility among Kédoviens elsewhere in Senegal and abroad to “continue the struggle that these brave youth have made public.”⁴⁵ Over the next months, the diaspora internationalized “the events of 2008” by networking with lawyers, human rights activists, environmental watchdog groups, independent filmmakers, and other West African immigrants abroad to pressure Abdoulaye Wade to release the protestors from prison. The distinctive ethnic and historic composition of Kedougou's immigrants in France and Spain also shaped the different channels of support—and allies—they enrolled in their protest.

⁴⁵ Fieldnotes, January 2009.

“The Mobilization for Kedougou,” Paris, January 2009

“Those youth are heroes, we in France, we must continue their mobilization, their battle”
—Organizer, Collectifs des Ressortissants de Kedougou, Paris, January 2009



(Figure 35: Demonstration in front of the Senegalese consulate, Paris, January 7, 2009.
Photo courtesy of Siré Danfakha)

I met Siré Danfakha for the first time in Paris in mid-January 2009. Less than a week after the judgment of the Kedougou protestors, a good friend in Senegal called to inform me of a “mobilization” for the liberation of the youth organized among Kédoviens in France. He passed along the phone number of one of its key coordinators—Sir. A few days later, I was on a Paris-bound train from Belgium to attend a meeting of the new “Collectifs des Ressortissants et Sympathisants de la Région de Kédougou.” I arrived at nightfall in a cold rain and worked my way through the Metro to find a community center in St. Denis, a suburb (*banlieue*) located to the east of the Périphérique, a highway circling Paris that divides the predominately white neighborhoods of Paris from the multi-ethnic *banlieues*. In St. Denis, host to large West African communities, Mande languages are as widely spoken as French.

The meeting was well underway when I arrived. Siré greeted me on the street. A middle-school geography teacher, she lives with her husband and four children in the *banlieue* of Montreuil. Full of life and in constant motion, Siré is a natural organizer and maintains contact with a wide network in both Senegal and France. This was the second meeting of the “Collectif” and was organized during a standing bi-monthly meeting for a group of immigrants from Kedougou who contribute to a collective bank account for medical emergencies or repatriation to Senegal in the case of death. These groups—called “hometown associations” or “*association d’entre-aide*”—are long-standing institutions among West African immigrants in West Africa and abroad. Several weeks earlier, leaders of this group had formed the “Collectif” to support the jailed protestors in Kedougou. They raised money to cover some of the legal fees of the detainees and released a declaration to the President of Senegal denouncing the violent repression of the protest and demanding vindication of the complaints of the protestors.⁴⁶

Conversation at the meeting in St. Denis drifted between French and Malinké or Diahanké, the primary language of the Kédoviens living in France. France has the largest Senegalese immigrant population in the world. In Dakar, it is rare to encounter a household that does not have at least one member living in France. Yet emigration rates are geographically uneven in Senegal. While immigration to Europe, the United States, and the Middle East is well established in Dakar, the central-west peanut basin, and along the Senegal River Valley, emigration from southern Senegal (Kedougou, Tambacounda, Casamance) is generally more recent and selective. In part, this is explained by the fact that emigrants have never been among the poorest residents of Senegal. Emigration from Senegal, through legal or illegal means, has always required material as well as human capital. Prior to the 1980s, emigration was associated

⁴⁶ “Declaration du Collectif en France,” *Kedovins de France* (blog), <http://kedovinsdefrance.over-blog.com/article-26761687.html>, Dec. 28, 2008.

with particular ethnic and religious networks. Since independence, in Kedougou it was prominently ethnic Diahanké who immigrated abroad. The first Diahanké families from Kedougou permanently immigrated to France in the 1960s. They worked in car manufacturing and provided religious services (as Qur'anic teachers and healers) to other West African immigrants in France.⁴⁷ These early migrants often helped their brothers, cousins, and wives immigrate through labor migration visas and, later, family reunification programs. Until the late 1990s, most Diahanké immigrated to France legally and now have extended family in greater Paris and, in some cases, Marseilles. Most of these immigrants are employed in France. Engineers, teachers, college students, and garbage collectors were among the group at the meeting in St. Denis. Most immigrants continue to support the expenses of the households of their parents and extended family back in Kedougou. Before cellphones were ubiquitous, the larger Diahanké villages in Kedougou boasted fix-line phones so immigrants could communicate directly with their wives, mothers, and children back in Senegal. Thus, despite the deep history of Diahanké immigration to France, many Kédoviens families in France remain intimately bound to kin networks and social developments back in Kedougou.

In many respects, the engagement of the Kédoviens of France in “the mobilization for Kedougou” was a natural extension of their involvement in development projects in Kedougou. With the austerity measures of structural adjustment reforms, Senegal’s transnational migrants have stepped in where the state has retreated. Since the early 1990s, Kédoviens have invested in infrastructures in their region of origin. In addition to sending remittances to cover basic medical care, school fees, and day-to-day expenses of an extended kin network, Kédoviens have also remodeled Kedougou’s largest mosque, furnished medical equipment and medicines to the departmental hospital, and financed classroom extensions in local schools. In fact, prior to the

⁴⁷ Author’s interview with Salioum Saoure, Paris, Jan. 2009 & April 2013.

highly publicized “corporate social responsibility” projects of industrial mining companies in Kedougou, the diaspora was among the most important financiers of “development” projects.⁴⁸

The Kédoviens of France are also an important political lobby. Due to laws that encourage the maintenance of dual citizenship, the Senegalese diaspora, more broadly, is a crucial national political constituency. Candidates for the presidency, the National Assembly, and some local elections must travel abroad to court the diaspora. This was particularly the case during the presidency of Abdoulaye Wade (2000-2012), who keeps a residence in Versailles. Under Wade’s presidency, prominent Senegalese living abroad had more direct access to the Senegalese state than their relatives back home—particularly politicians and lobby groups from distant regions. Kédoviens in France exploited their political value by framing the actions of the state in Senegal as a human rights abuse. Siré was instrumental to this campaign. She networked with human rights organizations based in France and former tourists to the region. Together, they lobbied Abdoulaye Wade and the Ministry of the Interior back in Senegal to free the protestors. Siré had considerable experience linking civil society groups in Kedougou and France. Every few years, she led French students to the region to contribute to village-level development projects and educational exchanges. She ran a small development organization focused on the region of Kedougou, funded by different French associations and the Kédoviens diaspora. Siré also enrolled several unexpected allies in “the mobilization for Kedougou,” including immigrants from the region of Sadiola, Mali living in the *banlieues* of Montreuil and St. Denis.

Located in the western region of Kayes, Mali, Sadiola occupies the same geological belt as Kedougou. It hosts open-pit gold mines owned by the Ghana-based company, AngloGold Ashanti, and the Canadian I AM GOLD (the latter company is also active in Kedougou).

⁴⁸ Cheikh Anta Babou, *Fighting the Greater Jihad: Amadou Bamba and the Founding of the Muridiyya of Senegal, 1853-1913* (Athens, 2010); Beth Buggenhagen, *Muslim Families in Global Senegal. Money Takes Care of Shame* (Bloomington, 2012); Tall, “Les investissements immobiliers a Dakar.”

Industrial gold mining is far more developed in Kayes than in Kedougou. Sadiola has a much larger diaspora in France than does the region of Kedougou. Households from Sadiola have some of the highest emigration rates in the country and, in some cases, have been involved in circular migration between Mali and France for generations.⁴⁹ Since the early 2000s, the “Association des Ressortissants de Sadiola en France” (ARSF)—based in St. Denis and Montreuil—have mobilized against the nefarious environmental impacts of industrial gold mining in Sadiola. Similar to Kedougou, protests against the mining sector in Sadiola began in Mali, and were led primarily by women and youth who decried insufficient and contaminated water around the mine.⁵⁰ After companies and the government failed to investigate the complaints of local protestors, Sadiola’s diaspora in France took action. In 2002, ARSF solicited the Friends of the Earth (*Les Amis de la Terre*), the Federation of Human Rights, and OXFAM to conduct health and environmental inspections in Sadiola. In 2003, with the assistance of a French filmmaker, Camille de Vitry, ARSF organized meetings with representatives of I AM GOLD and the World Bank (who partially financed this mining project) to discuss the results of environmental impact reports in Sadiola.⁵¹ De Vitry produced a compelling documentary documenting this protest movement and later co-authored a book about her collaboration with ARSF in France and Mali.

By contacting the leaders of ARSF, Siré began to educate herself and other Kédoviens about gold mining in West Africa. Key organizers of ARSF in France mentored the Kédoviens in their strategy for lobbying the Senegalese government and enrolling the assistance of French partners to increase pressure on the state through strategic letters not only to the president—but

⁴⁹ The majority of the participants in the *Sans-Papiers* movement at the St. Bernard church in Paris in 1996 were originally from Mali and the region of Kayes. Gregory Mann, *Native Sons: West African Veterans and France in the Twentieth Century* (Durham, NC, 2006).

⁵⁰ Dell, ““Undermining the Local,” 695.

⁵¹ Camille De Vitry avec les ressortissant-e-s de Sadiola, *L’or Nègre* (Toulouse, 2009); and *Le prix de l’or*. Film. Directed by Camille de Virty (Paris, 2004).

also the Ministries of Mines and the Environment in Senegal. Ironically, it was far easier for immigrants in France to make connections across international boundaries in West Africa—Mali to Senegal—than it was for people back “home.”⁵² As the crow flies, Sadiola and Kedougou are separated by 300 kilometers. Mining companies, such as IAMGOLD, operate geological research camps in both countries and move frequently between them. With the exception of people who move smaller distances to visit family members across the border, it is unusual for Senegalese—particularly those involved with associative organizations engaged in larger-scale political organization—to travel into Western Mali. There are several reasons for this. For one, both regions were governed as economically marginal hinterlands of the colonial and post-colonial states of Senegal and Mali (colonial Soudan). Historically, few reliable roads linked Kedougou and Sadiola, making travel across this international border both expensive and dangerous. Residents of both zones have looked to Dakar and Bamako—rather than across the border—for access to political and legal resources. In fact, the poverty and isolation of these regions encouraged such intensive out-migration from these zones, which accelerated during the droughts of the 1980s.⁵³ Rising gold prices and increased foreign investment in these regions have challenged these historic physical and socio-political disconnects by encouraging mobility and regional infrastructural investments. What is interesting about the “mobilization for Kedougou” is that connections were forged across these regions first in the diaspora (in France). Alliances forged in Europe placed pressure on the governments of Mali and Senegal and on

⁵² Author’s Interview with Siré Danfakha and Sady Danfakaha, Paris, France, January 2009.

⁵³ Shrinking revenues from agriculture were one incentive to seek employment abroad, but social motivations also mattered. Migration is seen as a key process in the transition to adulthood for many youth, particularly men, in Senegal. Emigration from Senegal accelerated dramatically in the 1980s and 1990s with the shrinking of public sector jobs tied to state austerity reforms and falling prices for peanuts. Caroline M. Melly, “Titanic Tales of Missing Men: Reconfigurations of national identity and gendered presence in Dakar, Senegal,” *American Ethnologist* 38:2 (2011), 361-376; Paul Stoller, *Money Has No Smell: The Africanization of New York City* (Chicago, 2002).

transnational gold mining companies operating in both places.⁵⁴ While Kédoviens forged new connections with West African emigrants in France, they also coordinated with Kedougou’s diaspora in Spain—to whom we now turn.

Barcelona, February 2009

“The state must know us, the local authorities must know that we are numerous abroad, and if they touch Kedougou, they touch us, they touch Spain and they touch France.”
—Daouda Tiguida, coordinator of the “mobilization for Kedougou,” Barcelona, Spain



(Figure 36: Kédoviens marching the streets of Granollers, Spain, February 2009)

In 2001, Daouda Tiguida was in his late 20s when he immigrated to Spain on a work visa. At that time, Senegalese were migrating to Spain in unprecedented numbers in search of

⁵⁴ Cf. Kirsch, *Mining Capitalism*, chap. 3.

work on farms, factories, in the booming construction industry, and as itinerant street vendors. Tiguida is from a Diahanké family in Kedougou. Most of his extended family lives in villages dotting the road between Kedougou and Sabodala. By 2009, when Tiguida met me at the Barcelona airport on a bright afternoon in late February, his young wife and several younger brothers had joined him in Spain through a family reunification program. They occupy a two bedroom-apartment in Granollers—a Catalan-speaking suburb (*localité*) to the north of Barcelona. Granollers is a bedroom community for a neighboring auto industry and is largely populated by immigrants from South America and West Africa. Siré initially connected me with Daouda and he invited me to Spain to assist with a protest he was organizing in front of the Senegalese consulate in Madrid and in Granollers. Daouda's cousin was one of the youth condemned to a ten-year prison sentence. Many other Kédoviens I met in Spain had relatives among the prisoners and felt an intimate connection to the riots. These immigrants were from Malinké and Diahanké villages located in the heart of Kedougou's gold belt. In sharp contrast to the diaspora in France, most Kédoviens in Spain had immigrated recently and many had even worked in the mining industry back in Kedougou. Most Kédoviens in France immigrated legally and had established households. But many Kédoviens in Spain immigrated illegally—including by pirogue via the Canary Islands—and were living and working in precarious situations.⁵⁵ 2009 was the height of the financial crisis in Spain, which shattered the housing and auto industry where many immigrants had found work. Xenophobia and unemployment was on the rise. Recently, Daouda's job at a car-parts factory was reduced to part-time. His brother, Hamadi, was

⁵⁵ The year 2006 was the height of (illegal) immigration to Spain, as thousands of young men boarded pirogues on the Senegalese coast and embarked for the Canary Islands. Though there were reports of women and children joining these voyages, the vast majority of these migrants were men. Most were West African and more than half of Senegalese nationality. See Caroline M. Melly, "Titanic Tales of Missing Men"; and R. Willems, "Les 'fous de la mer': Les migrants clandestins du Sénégal aux Iles Canaries en 2006," in *Le Sénégal: Mobilités, identités et sociétés*, ed. M.-C. Diop, 277-304 (Paris, 2001).

newly out of work, and between them they had only a few remaining months of unemployment subsidies. Linguistic barriers compounded economic problems for migrants. While Daouda spoke fluent Spanish, his family was still learning the language. A complicating factor was pressure in Granollers to learn Catalan in order to access basic social services. In the mid-2000s, during the apex of clandestine migration from Dakar to Spain by pirogue, “*Barça ou barsakh*” (“Barcelona or the afterlife”) was a common Wolof phrase circulating in Senegal. As Hamadi, Daouda’s younger brother, told me during my visit—“from now on, *barsakh* is here”—referring to the hardship of life in Spain even for those who survived immigration by sea.⁵⁶

The ambiance of Daouda’s apartment, and immigrant life more generally in the Barcelona suburbs, was far more reminiscent of urban Senegal than the households of Kédoviens in France. A steady stream of distant relatives and friends from Senegal stayed with Daouda or at least shared the mid-day meal with his family. Daouda’s wife prepared heaping plates of *Ceeb-ujen* and peanut *mafe*—traditional Senegalese dishes served on single platters. “Mande Flash” videos played from a large-screen TV, where unemployed men gathered to drink *ataaya*. In many respects, the difficulties of life in Spain reinforced the engagement of immigrants in the “mobilization for Kedougou.” In France, protestors focused on issues of state corruption and the historic marginalization of Kedougou. In Spain protestors were animated by the problem of unemployment—in particular, the accusations that Kédoviens had been passed up for employment in the mines by youth from elsewhere in Senegal. Kédoviens in Spain saw the protest as intimately tied to their own plight and lack of employment in Spain. As Daouda phrased it, “If we are all immigrants today, it is because there is no employment back home. When we look at the national average of unemployment in Senegal, that number is multiplied by

⁵⁶ As Hamadi frequently quoted, “From now on, death is here” (*Désormais, le barsakh est là*).

two in Kedougou.”⁵⁷ The open letter written by the organizers of the protest back in Kedougou made similar connections, referencing the fact “the youth of Kedougou are all the time in groups repatriated from Spain.”⁵⁸ In 2008 and 2009, the Spanish government repatriated thousands of Senegalese citizens who immigrated illegally Spain by sea-bound pirogues. An “Association of Spanish Repatriates” was among the original signatories of the memorandum addressed to the President by the “Mouvement Citoyens Pour la Défense des Intérêts de Kedougou.” Further, with few prospects for becoming citizens or securing stable jobs and property in Spain, most Kédoviens in Spain saw their futures firmly rooted in Senegal. In the words of Younkoun Kamara, a graduate from the University of Dakar who had immigrated to Spain less than a year before the Kedougou riots: “What do we have here? We know we have nothing. No jobs and no houses in Spain, but we have our land back in Kedougou—and we must protect it.”⁵⁹

As in France, the “mobilization for Kedougou” in Spain was a federation of several hometown associations, which they called the “Collectif des ressortissants du Sénégal Oriental en Espagne.” The Collectif networked with other diaspora groups in Spain to organize a protest in front of the Senegalese consulate in Madrid. For additional publicity, they reached out to Spanish development organizations that had worked extensively in Kedougou, including chimpanzee researchers and a number of tourists.⁶⁰ On February 7, 2009, immigrants organized a demonstration in the central square of Granollers, which was covered by the Spanish press and relayed to major news outlets in Senegal. The demonstration began in front of the mayor’s office and proceeded to the central square. Participants held signs hand-written in Catalan—*Per un Senegal mes just* (For a Senegal more just); *Merci amics de l’Afrique* (Thank you friends of

⁵⁷ Fieldnotes, Granollers, Spain, February 2009.

⁵⁸ Letter in the possession of the author.

⁵⁹ Author’s interview with Younkoun Kamara, February 2009, Granollers, Spain.

⁶⁰ Tourism from Spain to southeastern Senegal has grown substantially since the early 2000s. Most local tour guides now speak Spanish. Fieldnotes, Kedougou, 2013-2014.

Africa); *Merci Catalunya!* (Thank you Catalunya!). A row of young children and teenagers held a banner reading, *Libertat pels nostres germans resposta a les nostres reivindicacions* (Liberate our brothers and respond to their demands). Daouda addressed the assembled crowd of close to 1000 men and women in a mixture of Spanish and Catalan. He thanked the city of Granollers for authorizing the demonstration and compared this generosity to the the injustice faced by our “brothers and sisters in Senegal” who “were refused the right to meet in public.” In his words:

We are here to protest the violent acts of the Senegalese state toward our brothers and sisters in Senegal who were fighting for their right to employment and to our land. This is also a hard time for the people of Spain and Catalan, and we would like to thank the people of Catalan for everything you have given us.⁶¹

Daouda’s address was punctuated by clapping and cheers from the crowd, composed of Kédoviens and Senegalese from other regions, a handful of Catalanian NGOs, one-time Spanish tourists to West Africa, local media outlets, and curious onlookers. While the protest was directed at the Senegalese state, its principal actors, it appealed to the Spanish state as well. Immigrants articulated their own *desirés* for citizenship and recognition, access to political power, and “home” both in Spain and back in Senegal. While immigrants in Spain did not have the political clout and fiscal base of their counterparts in France, they were animated by a deep sense of responsibility—and proximity—to the protestors. Organizers in Spain collaborated closely with student leaders in Dakar, who led a demonstration on the UCAD campus and wrote open letters to the President as well. Building upon the momentum of demonstrations already held in Paris, they enrolled former tourists to Kedougou, development and immigrant assistance organizations, and former Peace Corps volunteers (me) in their movement. Collectively,

⁶¹ Fieldnotes, February 2009, Granollers, Spain.

Kédoviens wrote dozens of letters to Senegalese consulates, the Ministry of the Interior, and the President. Human rights groups and NGOs denounced the violent repression of protestors.⁶²

Of Politics and Presidential Pardons, March 2009

It is difficult to determine the impact of the “mobilization for Kedougou” in the diaspora on the response of the Senegalese state to the jailed protestors. On March 17, 2009—just over two months since the trail in Tambacounda—Abdoulaye Wade released the 19 detainees from prison with a unilateral Presidential Pardon.⁶³ In an official communication, a representative of the committee of the Ministry of Justice explained that the judicial consequences of the events of Kedougou would be erased to “definitely install forgetfulness in our hearts and minds.”⁶⁴

In part, Kédoviens in Senegal and abroad viewed the presidential pardon as a successful outcome to their intense campaigning. They also recognized the pardon as patently political. For one, Wade announced the pardon the day before he was scheduled to travel to Kedougou to campaign for his political party in advance of local elections. The Presidential Pardon also articulated with a larger pattern of the governance of this region by the central state. While Senegal has long enjoyed a reputation as a democratic “exception” within the sub-region, state administration of its peripheral regions—particularly those labeled as refractory—has been far more authoritarian. The pardon was a display of the absolute power of the state over Kedougou’s citizens, to imprison or liberate those who challenged the state’s authority at the turn of a dime. At the same time, there was suspicion in the diaspora and back in Kedougou that the pardon was also a strategy for deflecting increasing scrutiny of potential human rights abuses by Senegalese

⁶² See the organizations cited in Boubacar Dembo Tamba, “Kedougou: Procès des ‘émeutes.’”

⁶³ Laurent Correau, “Emeutes de Kedougou: le Président Wade gracie 19 condamnés,” *Radio France Internationale*. April 19, 2010; *Nouvelle Horizon*, “Evènements tragiques de Kedougou: Wade accorde grâce présidentielle et amnistie aux 19 personnes condamnées,” March 17, 2009.

⁶⁴ Quoted in *Nouvelle Horizon*, “Evènements tragiques de Kedougou.”

armed forces during and in the aftermath of protest.⁶⁵ After all, it was notable that the state used the words “forgetting” rather than reconciliation or peace—suggesting that in exchange for releasing the youth from prison, the grievances that placed these individuals in jail in the first place were forgotten. Wade’s motives for pardoning the prisons were likely various. Regardless, the “mobilization for Kedougou” unequivocally succeeded in making corruption in the governance of mining in Kedougou visible to national—and some key international—audiences. The diaspora gave political legitimacy to a movement that was silenced by the Senegalese state. By forging alliances in France, Spain, Senegal, and Mali, they internationalized a protest about “local” employment and the historical exploitation of a particular region by the Senegalese state.

Unlike other popular youth movements in Senegal over the past decade, the “youth of Kedougou” did not portend to speak for a national political body. Rather, they argued that their region had been exceptionally marginalized and exploited by the Senegalese state. To rectify this historical mistreatment, the youth of Kedougou demanded preferential consideration for employment in the mines and the re-investment of revenues from gold in regional infrastructure. They also demanded greater implication of local officials and residents in decision-making processes involving the mineral industry. They also wanted respect and to be treated as equals with residents of other regions, particularly from regions of economic power in Senegal. The arguments of protestors ran counter to the dominant discourse of state representatives and mining companies who both emphasized that the mine at Sabodala and Senegal’s mineral resources were for the benefit of all Senegalese: the nation. By accusing Kedougou’s protestors of xenophobia against workers from elsewhere in Senegal, state officials and their legal representatives

⁶⁵ On the intriguing history of the Senegalese military as a key diplomatic tool for building the international reputation of colonial and post-colonial Senegal, see Michael Ralph, *Forensics of Capital*.

attempted to discredit the demands of Kedougou's residents for enfranchisement and recompense for the region's historic marginalization and exploitation by the Senegalese state.

Conclusion

This chapter documents how a local protest-turned-riot against state corruption and dubious employment practices in Kedougou's industrial gold mining industry became a transnational protest movement. This protest began on a local scale in 2007 when discontented youth barricaded the major access road to the Sabodala gold mine, demanding greater enfranchisement in the employment process and investments in local infrastructure. State authorities appeased the protestors in Khossonto by promising to open a frank dialogue about the allocation of mining funds for local development. When these promises were not met, the geography of discontent expanded. College students, NGOs, radio DJs, bakers, butchers, repatriated immigrants, military veterans, and unemployed youth from Kedougou collaborated to create a movement to address their grievances with departmental-level officials. When their requests for dialogue were denied or ignored, they destroyed government property. When bullets and fear silenced them, Kédoviens living in France and Spain continued the protest. As the spatial reach of the protest expanded from the mine to the region and then to the diaspora, "the mobilization for Kedougou" grew to include Malian emigrants, Spanish tourists, French lawyers and independent filmmakers, environmental organizations, and former Peace Corps volunteers.

While there rich literature on the involvement of West Africa's diaspora in national politics and "development" in their regions of origin, this chapter contributes to a nascent scholarship on the engagement of the diaspora in transnational activism against states and

extractive industries.⁶⁶ The West African case is exceptional in the broader literature on mining protests, which focuses on the transnational alliances forged among indigenous communities. However, the framework of indigenous activism maps poorly onto West Africa, where there was minimal settler colonialism compared to South America, Australia, and North America.⁶⁷ Rather, in Mali and Senegal, the grievances of communities in extractive zones are framed within a longer history of marginalization by a distant colonial and post-colonial state.

Kedougou's corporate gold mining industry has expanded since the events of 2008. Teranga Gold, a Canadian company, now operates the Sabodala gold mine, which they purchased in 2012. Teranga has expanded their exploration activities and now holds over 1,000 km of exploration permits in the regions of Kedougou and Tambacounda. Sabodala remains the only active industrial-scale gold mine active in the region. However, Australian-owned Bassari Resources, the British firm Toro Gold, and Canadian IAMGOLD have all announced intentions to transfer their exploration permits into mineral concessions for open-pit gold mines within the next two to three years. As detailed in previous chapters, dozens of other exploration companies and sub-contractors for diamond drilling, geochemical essays, and transportation have opened subsidiaries and "bush camps" in Kedougou. These diverse mining operations have generated a host of labor, environmental, and social grievances. But since 2008, there have been no major protests against the mining industry. In part, this can be explained by increasingly coordinated efforts by mining companies to build relationships with Kedougou's villages and to include locals in social and environmental impact studies. Certainly, the state's repression of "the events of 2008" also deterred organizing by creating a climate of fear in the region. Regional residents

⁶⁶ See footnotes 5 and 6.

⁶⁷ On mining protests in South America, see Katherine Fultz, "Economies of Representation"; Elizabeth Ferry, *Emma Not Ours Alone: Patrimony, Value, and Collectivity in Contemporary Mexico* (New York, 2005); Janet Finn, *Tracing the Veins: Of Copper, Culture, and Community from Butte to Chuquicamata* (Berkeley, 1998); and Fabiana Li, *Unearthing Conflict*.

argue that the “real reason” for the lack of protest is the following. The region’s youth now work as artisanal miners or chiefs of artisanal mining teams. If lack of local employment in the “formal” mining sector motivated “the events of 2008,” opportunities in the “informal” extractive sector now dominate the economic horizons of local youth. This shift is materialized in the trajectories of two men involved in the 2008 protests: DJ Monex and Daouda Djiguiba.

After DJ Monex was released from jail on a Presidential Pardon, the state offered him a job as a field agent for “economic control,” a government agency that controls commercial licenses and sets prices for certain basic goods, such as rice, sugar, and powdered milk. According to Monex, this job offer was part of an old tactic of the Senegalese state to absorb oppositional actors through direct bribes and employment in times of economic austerity.⁶⁸ Monex did accept the job and gradually withdrew from his public role as a popular reggae radio DJ. But after several years, Monex grew weary of “bothering hard-working people to pay taxes to a state that does not serve their basic interests.”⁶⁹ He continued to draw a monthly paycheck but largely abandoned his post. He took up a long-standing offer of a cousin in Spain to start searching for new artisanal gold mines with gold detectors imported from an intermediary based in Barcelona. Beginning in 2012, Monex became a full-time gold prospector. Each morning he sets out with two close friends on motorcycles with gold detectors strapped to their backs in hand-sewn burlap sacks in search for gold. Monex makes a better living as a self-employed gold prospector than he ever did as a radio DJ or as an agent of economic control. He has applied for and received legal permits to prospect for gold on several tracts of land. But like many other men who prospect for gold in the region, he often transcends the boundary of his permit.

⁶⁸ Absorbing oppositional politicians is long-standing practice of the Senegalese state, beginning with the presidency of Leopold Sedar Senghor after independence. Catherine Boone, *Merchant Capital and the Roots of State Power in Senegal 1930-1985* (New York, 1992), esp. 93-5.

⁶⁹ Fieldnotes, Kedougou, Jan-June 2015.

Daouda Djiguiba has also invested in Kedougou's informal gold sector. His job assembling cars in greater Barcelona was never renewed. Within a year of "the events of 2008" he was unemployed like much of his network in Spain. Subsequently, he found part-time work in a number of industries. He has picked tomatoes, worked in housing construction, and volunteers for an organization that provides legal, social, and medical services to immigrants. In 2013, during my long-term fieldwork, Daouda returned to Kedougou from Spain for a month-long vacation. Instead of purchasing a plane ticket, Daouda piled into a used car with a friend and two-dozen gold detectors, purchased from a hobbyist shop in Barcelona. Daouda and his friend drove their car from Barcelona to Senegal, crossing the Sahara desert through Western Morocco and into Mauritania. While dangerous, this trip is a cost effective way to import (or smuggle) cars and other valuable commodities (such as gold detectors, which run between \$1000-\$15,000 US dollars) into West Africa. Daouda returned to Spain, where he lives with his wife and two children. He now hopes investments in artisanal mining back home, rather than remittances, will support his aging parents. Equipping his brothers and cousins with gold detectors, Daouda hopes, will free him from the constant stress of providing for his family in Spain and in Kedougou.

In the conclusion, I examine ongoing debates in Kedougou over whether artisanal or industrial extraction—or a combination of both—is better for the moral, economic, and ecological future of the region. These contests are the latest chapter in a profoundly historical debate over the rights of agrarian communities to mine gold on the West African Sahel

Conclusion



(Figure 37: Young woman washing gold, Siguiri, Guinea, 1942
Photo Courtesy of Institut Fondamental d'Afrique Noire)

Protests over the corruption of states and corporations in mining zones are legible to audiences anywhere in the world: coal miners demand better working conditions in Colorado and West Virginia, Canadian citizens resist fracking, and indigenous activists in Ecuador organize community in hopes of influencing the entry of gold mining companies into their communities. With a few key words we begin to cohere a storyline we believe we already know: minerals, poor people, exploited workers and environments, corporate greed, state corruption. Yet not all

extractive histories can be reduced to a news clip or a set of structural economic and geopolitical factors or glossed as the “natural resource curse” in journalistic and activist literature. I spent countless hours listening to accusations and arguments in household foyers, offices, and geological research camps before I understood the following. Arguments forwarded by artisanal miners, the state, and corporate agents are not only about access to mineral resources. They are about the forms of expertise and social relations attached to minerals; questions of what ritual and material techniques should be used for extraction; and the moral ambiguity of laboring underground. On the West African Sahel, these are competitive arguments. For over a century West African miners have collaborated with state geologists and private prospectors. Today rural residents compete with corporations for state patronage and the legal sanction to mine.

Conflicts between “artisanal” and “corporate” miners are now a global problem. An entire security branch of the global mining industry is now dedicated to managing conflicts with artisanal miners. Consultants produce studies of artisanal mining for international development and environmental agencies and mining corporations. These consultants advise corporate camp managers and security forces on managing relationships with “local” communities who extract the same substances as companies listed on the stock exchanges of Australia, the United Kingdom, Canada, and the United States. In part, increasingly violent “clashes” between artisanal and industrial miners are the result of the rapid expansion of artisanal mining and diminishing returns on smallholder agriculture in much of the world. New technologies, global infrastructural provisioning, and the depletion of mineral deposits in more conventional mining zones have also encouraged mining companies to search out new “frontiers,” largely in former colonies. The commodity boom that intensified mineral extraction fifteen years ago is now

flagging, but the depression of hard metal prices is only temporary.¹ Markets for metals in India, China, and Brazil will continue to grow. These nation-states are likely to provision a range of metals in Africa, home to over half of the world's known mineral reserves.

Through a deeply historicized account of extraction on the West African Sahel, this dissertation reframes the “clash” between “artisanal” and “industrial” miners as one node in a far-reaching debate over rights to the subsoil that began with French conquest in the 1890s and continues today. The intensity of this debate has waxed and waned with changing global prices for gold, famine, and viable alternatives for income generation in agriculture or wage labor.

The bifurcation of artisanal from industrial mining has roots in the colonial period. It was a maneuver by the French state to justify marginalizing the rights of African “subjects” to mineral resources while carving out a legal jurisdiction for European citizens to mine gold. Since then, the colonial state, its post-colonial successors, and the global mining industry have invested considerable effort in demarcating artisanal from industrial extraction through the mechanism of law. This work is fragile, however. On the West African Sahel, African and expatriate miners have long been entangled through exchanges of labor, techniques, and the mutual pirating of gold discoveries. Embracing a broad temporal and spatial frame reveals that these are not separate sectors: they are interrelated components of a single extractive system. Scholarly tendencies to study *either* industrial or artisanal extraction have unwittingly reinforced this division. This dissertation represents one of the first sustained attempts to unravel this dualism.

Over two decades ago anthropologist James Ferguson argued that “developmental” discourses frequently divided up historically structured units—in his case, Lesotho and South

¹ On the impact of falling gold prices on corporate investments in Kedougou, see Dialigie Faye, “Mohamed David Mbaye, Randgold: “Beaucoup de companies sont dans des difficultés,” *Le Quotidien*, April 20, 2015. Accessed on March 18, 2016, <http://www.lequotidien.sn/index.php/economie/mohamed-david-mbaye-randgold-beaucoup-de-compagnies-sont-dans-des-difficultes>

Africa—into “two separate national entities, reducing their structural relation to a few ‘ties’ between neighbors.”² Similarly, the mining industry and its consultants have suggested ways in which “artisanal” and “industrial” miners can work together as “neighbors.” This language appears benign, but it obscures the fact that corporations are often guided by the discoveries of “artisanal” miners. A central claim of this dissertation is that geologists working for the state and private corporations have systematically appropriated the gold discoveries of African miners. It has served the interests of the state and private companies to allow, through means both formal and informal, artisanal miners to prospect for gold. However, by controlling the legal mechanism to encourage, restrict, or criminalize the *rights* of rural residents gold, colonial and post-colonial states have accrued the benefits of these discoveries to the detriment of rural households.

Multi-generational gold mining families, I have argued, were instrumental to colonial and post-colonial mineral exploration that led to the discovery of important gold reserves. Many of these discoveries became “shelf projects” until they were opened to private bids in the late 1990s and early 2000s. Exploring the “phase” of mineral research brings the contested history of these mineral discoveries, and their political afterlives, into focus. By attending to struggles over expertise and knowledge appropriation, this dissertation challenges the overwhelming emphasis of environmental histories of Africa on the exploitation of land and labor. Today artisanal miners in West Africa are concerned about the loss of land to corporations, but they also want reparations for the “theft” of their mineral discoveries and their exclusion from mineral deposits they claim to have discovered independently or in collaboration with interloping geologists.

It is difficult to discern the “value” of the expertise artisanal miners contributed to colonial and independence-era mineral missions. Mineral frontiers are heavily researched places.

² James Ferguson, *The Anti-Politics Machine: Development, Depoliticization, and Bureaucratic Power in Lesotho* (Minneapolis, 1994), 40.

This simple point has not been adequately explored in the otherwise rich literature on mining in sub-Saharan Africa and elsewhere in the world. One reason for this—and here I conjecture—is that studies of extraction are heavily inspired by Marxist sociology and class analysis, which emphasizes questions of labor and land expropriation rather than those of expertise. Scholars of extraction, particularly “artisanal” mining, could benefit from reviewing the questions posed in scholarship on plant bio-prospecting about knowledge exchange and uneven benefits associated with bringing plants from “Third World” forests and markets into “First World” laboratories.³ The place-based nature of mineral extraction also turns our attention to the multi-vocal claims tied to given land and contested claims to first-comer status. On the West African Sahel, extracting gold entails intimate relationships with the unseen world of *jinne*, goblins and mystical serpents who demand blood sacrifices in exchange for gold. For this reason, gold mining is morally contentious in a way that other natural products are not in this context.

While this dissertation is about “artisanal mining,” it queries the very category. “Artisanal mining” is not a straightforward technical category. This is evidenced by the fact that the term is evoked exclusively to describe extraction in the formerly colonized world. There are historical reasons for this. At its origins, the category of the artisanal miner was racial and emerged from colonial “customary” mining rights. Over time the policies of the colonial and post-colonial state transformed this racial classification into a technological one by barring West Africans from accessing concessionary permits, reserved for European firms. West Africans became “artisanal” miners because they were prevented from innovating their toolkits and excluded from property regimes and access to capital and loans that would enable them to become “industrial.”

Historians have interrogated the racist assumptions inscribed in colonial classifications of race, gender, and political membership in Africa. But we have only begun to denaturalize the

³ See footnote 4 in Chapter 3.

technical categories of the colonial and post-colonial state, as well as international regulatory bodies such as the World Bank and the United Nations. It is precisely because categories such as “artisanal mining” appear natural and uncontroversial—and thus beyond the realm of debate—that they are such powerful tools for shaping reality in their image. These categories have proven highly effective in smuggling racist assumptions about African technological practice into post-colonial regulations. I hope this project raises questions that will animate further study of when and how the geographic partitions of imperialism become re-inscribed into post-colonial regulatory categories and practices. Artisanal mining is one example of the extractive sector, but it finds counterparts in the transformation of African hunters into poachers and healers into witches. We need more histories that explain how property regimes and the criminalization of African technological practices created these enduring categories of lawlessness.⁴

This dissertation gestures at some of the larger global developments that contributed to “making artisanal miners,” particularly the influence of postwar international organizations in shaping the mineral policies of post-colonial states. This is also a story deeply grounded in regional logics of extraction, ethno-linguistic settlement histories, and in the relationship of Kedougou to the various states that have claimed this region as their own. Artisanal mining does not mean the same thing everywhere in the world. West Africa is home to one of the world’s oldest contiguous gold mining traditions. In this region prospecting, mining, and processing gold is part of family histories, inter-generational knowledge transmission, and relationships between particular clans to nonhuman inhabitants. Further, the unique policies of the colonial federation of French West Africa—which were shaped by the demands of West African miners—continue

⁴ On this point more broadly, see Karl Jacoby, *Crimes Against Nature: Squatters, Poachers, Thieves, and the Hidden History of American Conservation* (Berkeley, 2001). For work in this vein on “poaching” and plant bio-prospecting in Africa, see Abena Dove Osseo-Arare, *Bitter Roots: The Search for Healing Plants in Africa* (Chicago, 2014); and Clapperton Mavhunga, *Transient Workspaces: Technologies of Everyday Innovation in Zimbabwe* (Cambridge, 2014).

to inform the political valence of “clashes” between artisanal and industrial miners in this zone.

I have emphasized continuities in practice between the colonial and post-colonial periods, particularly the ongoing appropriation of the gold discoveries of African miners. There were, however, crucial differences between the periods. Colonial regulation of African extraction was violent and arbitrary, but the French also valorized African mining experts. As detailed in Chapter 3, colonial-era geologists proposed incorporating African gold prospectors into the official scientific apparatus of the French empire, while administrators recognized the *diourakuntigi* as legitimate political authorities in auriferous zones (Chapter 3). By contrast, many independence-era—including Sekou Toure of Guinea and Modibo Keita of Mali—outlawed mining by their newly minted citizens. The criminalization of citizen mining was part of a broader suite of nationalization policies and a vision of African socialism that held no place for the mobile and cosmopolitan *orpailleur*, who was neither an industrial laborer nor a farmer.

The fact that colonial officials struggled with the ambiguous political character *orpaillage*, while independent African states outlawed the practice outright, raises broader questions about the foreclosures of independence for artisanal mining families. Historians of French West Africa—including Fred Cooper and Gary Wilder—argue that the postwar period was a time of experimentation and debate over the political status of Africans and Franco-Africans in the greater French imperial nation-state.⁵ Indeed, historians working on this period across sub-Saharan Africa demonstrate that African politicians and intellectuals imagined and defended forms of political membership that did not align with the tightly bound nation-state

⁵ Frederick Cooper, *Citizenship between Empire and Nation: Remaking France and French Africa, 1945-1960* (Princeton, 2014); Gary Wilder, *The French Imperial Nation-State: Negritude and Colonial Humanism between the Two World Wars* (Chicago, 2005).

model that became dominant in Africa in the late 1950s.⁶ Leopold Sedar Senghor warned against the political dangers of “balkanizing” African states along narrow boundaries and promoted the federation of West African states. For Senghor, membership in imperial France afforded Africans more economic opportunities, and potentially political rights, than a severed union ever could. Recent studies of these alternative political imaginaries question whether the emergence of nation-states, based on colonial-era boundaries, was inevitable or even the most desirable outcome of the renegotiations of empire in the aftermath of World War II. My research reveals that African politicians and colonial reformers were not only debating the future of imperial citizenship; they also debated over the technological opportunities that reformulated imperial networks could afford the residents of West Africa. After World War II, French geologists proposed complementing the “empirical” expertise of African gold prospectors with the “aerial view” offered by French mapping techniques. At the same time, African politicians anted to valorize the “natural patrimony” of overseas France by coordinating indigenous and European extractive industries. These conversations concerned how the distinctive environmental knowledges of West Africans and Europeans could be combined and made mutually profitable.

The form of territorial independence in AOF closed down many of these competing visions of imperial technological coordination as well as the alternative forms of political membership imagined by Leopold Sedar Senghor of Senegal, among others. Early independent states embraced a comparatively narrow vision of who could extract “national” mineral resources—and how. The Sahelian famines of the 1970s and 1980s and the rise of global gold prices in the 1990s re-opened debates over the rights of agrarian communities in West Africa to extract gold as a livelihood strategy. These debates intensified with the large-scale enclosure of

⁶ Prominent examples from the historiography on East Africa include: Derek R. Peterson, *Ethnic Patriotism and the East African Revival: A History of Dissent, c. 1935-1972* (Cambridge, 2012); and Steven Feierman, *Peasant Intellectuals: Anthropology and History in Tanzania* (Madison, WI, 1990).

the region's goldfields by corporate gold exploration permits accorded by African states since the late 1990s until the present day. In the case of extractive regulations, there was a clear break at independence from colonial policies. But this "break" was temporary. By investigating regulation and scientific research under both colonial and post-colonial conditions, the "neo-liberal" governance of mineral resources in contemporary West Africa emerges as part of a broader pattern with origins in Mande pre-colonial extractive institutions and in colonial law.

The fact that indigenous mining flourished and remained under the control of African institutions throughout the span of French colonial rule means there was incredible continuity in the ritual and political organization of gold mining in AOF compared to other regions in sub-Saharan Africa. Of course, Africans innovated and transformed their mining institutions under French colonialism for reasons tied to changes in the market economy as well as more intimate transitions on the household level. Despite this, the major institutions of gold mining on the Western Sahel—such as the *diourakuntigi*, *damantigi*, and *tombolman*—thrived and even spread into new communities under French rule. Although African mining was criminalized at independence, the technical and ritual skills tied to these institutions endured in the praxis, memories, and social networks of multi-generational gold mining households and villages on the Western Sahel. These institutions, and the specific families tied to them, would manage the rapid expansion of "artisanal" gold mining in the late 1990s and 2000s. Continuity in village-level management of gold extraction continue to inform debates over access to these goldfields among different groups of African miners and between "artisanal" miners and gold mining corporations. In fact, the very structure of this dissertation—part ethnography, part history—is an argument for how and why history, both as a set of material structures and as a resource for claims making, continues today to shape struggles over the law and natural resources in West Africa

Making ‘Artisanal’ Miners, Making Farmers



(Figure 38: Front page of the Teranga Development Strategy, 2014)

In concluding, I consider a final theme: the relationship of artisanal mining to farming in West Africa. The economy of AOF was mercantile and relied on purchasing products produced or collected by African “farmers” (*paysans*). Many administrators blamed *orpaillage* for famine, food shortages, and distracting Africans from their “true” vocation: agriculture. Importantly, the colonial state also looked to rural agricultural institutions as a source of political stability, which *orpaillage* clearly threatened. Independence-era leaders post-colonial states reinforced the notion that rural Africans were natural farmers and that *orpaillage* distracted from the moral and communal labor of agriculture. When closing *diouras* in the 1960s, Mali’s Modibo Keita and Guinea’s Sekou Toure instructed rural residents to “return to the land” (*retour a la terre*). In

recent years, active presidents of West Africa, Alpha Conde of Guinea and Macky Sall of Senegal, have deployed similar language to deploy armed forces to close *diouras*.

However, it is a myth that the populations of Siguiri or Kedougou were ever “farmers” in the idealized vision deployed by colonial and post-colonial administrators. As archives and oral histories make clear, residents of these zones have relied on diverse strategies to meet their subsistence needs. In Kedougou, which was far more isolated from trade networks than Siguiri under colonialism, people hunted and gathered edible plants to supplement agriculture. Further, the low population densities of the region, and the violence and mobility that defined life in this zone prior to and during colonialism, meant that most households have been food insecure for generations. If *orpaillage* has threatened food security for some in recent years, so did the head taxes demands of the colonial state and the migration of men to farm peanuts in “Senegal” in order to generate a cash income for school fees, clothing, and other basic needs.

The mining industry and non-governmental organizations have also promoted an image of Kedougou’s residents as “farmers” rooted in place. During his visit to Kedougou in 2014, while celebrating Kedougou’s mining industry, Macky Sall emphasized that no country can develop exclusively from mining. The future of Kedougou, he argued, would be in “sustainable agricultural development.”⁷ Within days of making this statement, Sall had ordered the closure of Kedougou’s *diouras*, timed with the onset of the rainy season. The timing was intentional. As Sall stated, he hoped the closures would “orient the region’s residents toward agriculture.” Radio Television Senegal reinforced Sall’s sentiments with proclamations that the “President is asking

⁷ Mahamadou L. Barro, “La declaration du President Macky Sall après sa visite a Sabodala (Kedougou), *Sudestinfo.com*, April 17, 2014. See also Ana Komnienic, “Senegal wants mining industry to drive economy.” *Mining.com*, Jan 28, 2014.

the population of Kedougou to return to the land.”⁸ The language of “returns” echoes the rhetoric of independence-era “*retour a la terre*” policies.

Rural development projects funded by the United States Agency for International Development in Kedougou now focus on drawing people from agricultural mining into dry-season gardening activities. In the words of the director of USAID in Kedougou in 2014: “Orpaillage is a threat to food security in Kedougou. Our goal is to bring people back to agriculture in Kedougou, particularly by generating market gardening opportunities for women.”⁹ Kalidou Cissokho, the director of Kedougou’s Agence Régionale de Développement, a state-funded agency that coordinates different regional development efforts.¹⁰ Over the past several years, Cissokho has overseen several theses by Senegalese and French students in the hope of identifying a causal link between food insecurity and the growth of artisanal mining in Kedougou. One thesis on the impact of *orpaillage* on cotton production in Kedougou articulated a statement I heard repeatedly from development workers and government agencies:

The phenomenon of competition between gold extraction and agriculture is recent. In the past, the two activities always functioned in complementarity: *orpaillage* was practiced only during the dry season while the rainy season was reserved for agriculture.¹¹

This statement is a folk theory of how *orpaillage* and agriculture are supposed to work in West Africa. But this was not the case during famines in the 1880s and the 1980s, when thousands of men and women turned to the goldfields of Tinkoto because their fields were barren. Nor was it true during years when global gold prices were so low that people from auriferous zones preferred to migrate in search of wage labor during the dry-season rather than mine gold.

Unquestionably, changes in the technologies used by artisanal miners have made it possible to

⁸ In particular, see *Radio Television Senegal*, “Les jeunes au coeur des DAC,” November 10, 2014.

⁹ Interview with Colonel Cheikh Tidiane Toure, USAID-Kedougou. Kedougou, Jun. 17, 2014

¹⁰ Interview with Kalidou Cissokho, Director of Kedougou’s Rural Development Agency, Jan-June 2014

¹¹ Néné Dia, “Activité minière et culture cotonnière: l’exemple de la mine d’or de Sabodala au Sud-est du Sénégal” (Maîtrise en Géographie, Université Gaston Berger de Saint-Louis, 2006), 73.

extend gold mining into the rainy season, which can interfere with agriculture. It is less clear, however, if this practice has led to a decline in household food insecurity as profits from gold mining are often used to buy imported rice, oil, sugar, onions, and other basic foodstuffs. Further, there is evidence to suggest that the introduction of cotton culture in Kedougou by the Senegalese state has reduced household food security since the 1970s, entrapping farmers in a cycle of debt tied to the speculative purchasing of seed, fertilizer, and pesticide.¹² Moreover, the development workers and bureaucrats who complain about declining agricultural production in Kedougou often live in households in Dakar and elsewhere in Senegal that have relied on purchased food imports for at least a generation if not far longer. Residents of Kedougou argue that *orpaillage* allows residents of Kedougou to live like other Senegalese: to eat imported rice.

Mining companies, particularly Teranga Gold, also focus their corporate social responsibility projects on promoting agriculture in Kedougou. This goal is clear in the “Teranga Development Strategy for Kedougou,” a plan produced by a Canadian consultancy firm for Teranga Gold. The “Plan” details the company’s intentions for investments in regional electric and road infrastructure, health clinics, and rural development projects. Shockingly, it makes almost no mention of the importance of *orpaillage* to Kedougou’s rural economy. It does highlight the efforts of Teranga to promote dry-season market gardening in villages surrounding the mines. This is exemplified in the Plan’s feature photo of a Teranga employee surrounded by women in the village of Madina Bransan holding tree saplings in plastic nursery bags.

Residents of these villages are appreciative of assistance in agriculture, which has long suffered from a lack of capital investments and fertilizer. But there is growing cynicism about the viability of these gardening “projects.” Some argue that they are a distraction from political issues concerning the loss of land and the rights of rural communities to mine gold. During the

¹² Interview with Modou Kouma, Kédougou, Jan-June 2013.

closure of the *diouras* in 2014, I interviewed many artisanal miners with whom I had already spent countless hours discussing the history and contemporary practices of gold mining. News reporters from across Senegal also took the pulse of rural residents on the closures. We both listened to residents compare the benefits of *orpaillage* with agriculture. With gold revenues, people have transformed mud huts into durable multi-room concrete buildings, something their parents were never able to accomplish with agriculture. Below is a quote from a man, roughly in his mid-20s, from a national television program aired during the *dioura* closures of 2014.

My father has never purchased a moto [motorcycle]. Me I have purchased a moto, I am going to purchase a car, and I am in the process of constructing [a house]. If it is in agriculture, could I have gained this? It is impossible to close the *dioura*.¹³

A man I interviewed in his late 70s expressed similar sentiments:

I cannot say anything good about the companies. Because, those who are going to take *orpaillage* from us, that will not be easy. You see this apartment [gesturing to the concrete building behind him], we had this from the work of gold and not from the company. I cultivated until my hair turned white. My father did the same thing until his hair turned white. We never had this [gesturing again to the building]. In several months of work in the *dioura* of Sambaranbugu, I built this. I constructed a boutique, which I even rented. We eat. My whole family eats from the *dioura*. It is not farming that gave me this. Farming never filled our stomachs. Thanks to Allah. I have two children who study at the university in Dakar. They call me. ‘Father, they said, send me something.’ I am able to send them something. Thanks to Allah. The company did not do this.¹⁴

These men, like many other men and women I interviewed, did not suggest that *orpaillage* should replace farming. Artisanal gold mining, they argue, helps expanded households meet the demands of living in a volatile market economy where rain-fed agriculture is unpredictable and children are now expected to attend school rather than join their parents in the field. Instructing residents to “return” to agriculture ignores the fact that people in Kedougou have always complemented agriculture with hunting, plant collection, and gold mining to meet basic needs.

¹³ Soly Bourama Debo, “Les orpailleurs de Kédougou voteront sanction après la fermeture des sites,” Radio Télévision Sénégal, May 18, 2014; Moussa Seydou Diallo, “Fermeture des diouras de la région de Kédougou: Galère et inquiétudes des orpailleurs,” *Le Quotidien*, Sept 9, 2014.

¹⁴ Interview with Neege Traoure, Duuta, March 10, 2014.

Artisanal miners find the state's insistence on their "return" to agriculture insulting and part of a broader pattern of the state's miscomprehension and marginalization of Kedougou. I will end this dissertation with the arresting words of Aliou Diallo, an *orpailleur*, farmer, father, and respected community leader from the village of Momokhono. Momokhono is the oldest village in the pre-colonial province of Beledougou, which was likely founded by blacksmiths in search of fresh iron and gold deposits shortly after the fall of the kingdom of Mali. Today Momokhono is located within one of Teranga Gold's vast exploration permits. Before Oromin sold its exploratory package, it announced the discovery of a one million ounce gold deposit in its permit: Gora. Teranga plans to exploit Gora as an open-pit mine, feeding this rock to its mill in Sabodala. I leave you with Diallo's concerns about the future of their village and its resources.

As long as ministers are sitting in air-conditioned offices, and driving around Dakar in air-conditioned cars, staring at their maps on computers and not setting foot in the *dioura*, we will continue to live in two Senegals. There is the Senegal of Dakar, where we can say everything is ok. That is where democracy happens. Then there is Senegal *profondeur*. And that is where we live in poverty and in darkness. Where if you fall ill you are condemned to death. Have you walked around the departmental hospital? Where we have not a single surgeon for over 30,000 people. This does not count the *orpailleurs* from Mali and Guinea who live here. Where my house is flooded by people from villages that are starving who do not have enough to eat by the month of July. This is where there is no democracy. Where they take our land without explaining how we are supposed to live. Where the administration acts with total impunity. What could help us, you ask? I am worried about my fields. If they make us leave our fields, they will have to propose us something so that we can continue to work. As I told you, we were born here. We were raised here. We have passed all of our lives here. Our mother is over 100 years old now. Our relatives are buried in the earth. We prepared their bodies and we buried them. You know? We live here. So, you come from there [abroad] and you come here and tell us we have to leave. You have to show us something reassuring, so that we leave here. You will have to show us a new place, to reassure us, so that we can live. But if you do not give us what we are owed, you will have to move us by force. Here, it is the state that has done this to us. It is the state. But us, also, we will do what we have to do. The state tricked us, God did not trick us, and God does not sleep (*Mansa xa kila, Ala ma k'ila, ala man sinnoxko*).¹⁵

¹⁵ Interview with Aliou Diallo and Moussa Diallo, Momokhono, Jun. 12, 2014.

Coda



(Figure 39: *La bibliothèque*, Université de Cheikh Anta Diop, Dakar, Senegal, 2014)

This coda briefly examines how the Senegalese state managed its growing “earth’s archive”—the reports, maps, and recommendations generated by decades of cooperative mineral missions. The corporations that came to Senegal Oriental in the 1990s in search of gold and other minerals mined the reports and maps of earlier generations of mineral researchers well before they dug exploration trenches or pierced the soil with bulldozers. And so did I. My search for written archives on the mineral missions of the 1960s and 1970s, which I first learned about in

interviews with geologists and artisanal miners, led me to a place known as *la bibliothèque* (the library) by older generations of Senegalese geologists.

La bibliothèque is an abandoned scientific library that has passed through the hands of a range of colonial and post-colonial institutions, both public and private. The institutional life of this library is a form of historical evidence in its own right. Today the library is caught between two owners with competing notions of the potential value of the crumbling papers encased in its walls. The Federal Direction of Mines and Geology (DFMG) of the French colonial administration founded *la bibliothèque* in the 1950s. They collected international scientific journals and maps and reports produced by the colonial administration on West African geology and mineral resources since conquest in the 1890s. At independence, the Office of Geological and Mineral Research (BRGM)—a French parastatal formed in 1959 that continued mineral research in France’s former overseas colonies—absorbed *la bibliothèque*.¹⁶ It was not until the 1980s that Senegal’s Direction of Mines and Geology (DMG) acquired ownership of *la bibliothèque*. Too cumbersome to relocate, the library remains lodged in a building now occupied by the Faculté des Sciences of the Université de Dakar. The Institut de Sciences de la Terre (IST), responsible for training Senegal’s future mining engineers, uses the classrooms, laboratories, and offices flanking either side of the library. Now under lock and key, *la bibliothèque* was abandoned a decade ago when its part-time curator retired. The physical space of the library belongs to IST, but the documents it contains are the property of the DMG.

IST maximizes on the *la bibliothèque*’s empty spaces to store equipment for its annual field trips to southeastern Senegal where they instruct students in geological cartography. Chairs, plastic mats, and 20-liter gallons of petroleum rest against shelves housing proposals written by

¹⁶ *Objectif Terre: 50 ans d’histoire du BRGM* (Orleans, 2009)

the industrial ministries of Saudi Arabia, Japan, and the United States with offers of technical assistance. Scientific periodicals of the 1960s peer over portable cooking stoves and car batteries. A closet located in the far corner of the library contains the original archives of the Direction of Mines of the federation of French West Africa. Boxes labeled “Haute Volta,” “Guinee,” and “Togo” spill mineral research reports penned from 1890 until the late 1950s into bins containing the papers of the post-colonial Ministry of Industry and Mines from the 1970s and 1980s.

This paper tomb encases the history of attempts by the colonial and post-colonial state—and their disparate partners and business allies—to archive the earth. Most of the written reports upon which this dissertation is based are derived from my excavations of this library. I was given access to *la bibliothèque* as an afterthought to an interview in the final month of my stay in Senegal. But the life histories of Senegalese geologists, and “artisanal” miners and laborers from Senegal Orientale, guided my reading of this archive. The stories of their working lives propelled my search for written sources about this forgotten chapter of Senegalese history in the first place.

The faculty of IST has requested the DMG to remove the documents. The IST is in desperate need of new space as student enrollment climbs and the building ages. Much to the embarrassment of the faculty the smell of raw sewage permeates the hallways and their classrooms, occasionally forcing faculty to convene class in their private offices. The building’s more aerated second floor houses research laboratories that are funded by different development agencies. The offices and personnel alternate with the cadence of project funding, which typically runs on cycles of three to five years. The DMG has repeatedly deflected requests to relocate the library, citing transitions in the Ministry’s leadership for the delay. The IST suggested transferring the archives to the Ministry of Archives. But a complicated question of archival sovereignty has arisen. The files from colonial Guinea, Togo, and Mali are no longer the

property of independent Senegal. Digitizing the archives would require repatriating individual documents to their respective post-colonies. This is a poignant instance of the practical and political difficulties of disaggregating the material remains of a colonial federation.

There are other reasons why the DMG could be retaining the collection. I am not the sole researcher to seek access to *la bibliothèque*. In the mid-2000s, an international team of researchers spent over a week in the collections selecting key documents for a digitization project. Funded by the European Union, this effort was part of a multi-tiered program to re-launch Senegal's mineral sector by reinforcing the infrastructural capacity of the Ministry of Mines. The team of French and Senegalese researchers scanned and re-catalogued a careful selection of documents. While touching only a small portion of the archives, this project re-valorized the collection. Considering this it is quite possible that the DMG is holding onto the archives with the hopes of attracting a future digitizing project. Perhaps the DMG can use *la bibliothèque* as a source of occasional funding, as the BRGM once did by charging parastatals and cooperative research missions a fee to access its robust collection of maps and reports.

Wayward rocks from student riots have pierced *la bibliothèque*'s southern-facing windows exposing papers that document a century-long attempt to archive Senegal's subsoil resources to the elements. Like their scientific counterparts elsewhere in the world, Senegalese geologists have taken up new tools for mapping national mineral endowments. In the meantime bees and rats have taken up residence on these shelves.

Bibliography

Archives

ADMGS	Archives de la Direction des Mines et de la Géologie du Sénégal, Dakar, Sénégal
ANS	Archives Nationales du Sénégal, Dakar, Sénégal
ANG	Archives Nationales de la Guinée, Conakry, Guinée
CAOM	Centre des Archives d'Outre-mer, Aix-en-Provence, France
IFAN	Institut Fondamental d'Afrique Noire, Dakar, Sénégal
AS	Archives du Soleil, Dakar, Sénégal

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Diallo, Khouddouse
Kamara, Madi

Recorded Interviews (Annotated List)

Ba, Dula. Mako, Mar. 5, 2014
Ba, Chernou Sidi. Kedougou, Jan. 27, 2014
Ba, Mariama. Kedougou, Feb. 15, 2014
Barry, Amadou. Tinkoto, Feb. 4, 2014
Cisse, El Hadj Amadou “Hadji.” Kedougou, Feb. 5 & Jun. 23, 2014
Cissokho, Bambo. Tinkoto, Feb. 11, 2014
Cissokho, Sega. Tinkoto, Jan. 22, 2014
Cissokho, Gassimou. Tinkoto, Jan. 24, 2014
Cissokho, Moussa. Tomboroncoto, Mar. 10, 2014
Cissokho, Juma Moussa. Bambaraya, Mar. 29, 2014
Cissokho, Tumbi Ceikhou. Momokhono, Mar. 31, 2014
Cissokho, B. Sambaranbugu, March 12, 2014
Cissokho, Mahamadi. Sambaranbugu, March 13, 2014
Cissokho, Juma Dembo. Bambaraya. Jun. 7, 2014
Cissokho, Fanta Madi. Bambaraya. Mar. 29, 2014
Cissokho, Dembou. Sambaranbugu, Apr. 12 & 17, 2014
Cissokho, Burahima. Sambaranbugu. Apr. 13, 2014
Cissokho, Baka. Sambaranbugu, Apr. 13, 2014
Cissokho, Ibrahima. Duuta, Apr. 8, 2014
Cissokho, Moussa. Tomboroncoto, Mar. 10, 2014

Cissokho, Toumanie. Duuta, Apr. 9, & Mar. 19 2014
 Cissokho, Tumbi Cheikhou. Monokhono, Mar. 29, 2014
 Dabo, Lamine. Samecouta, Jun. 5, 2014
 Danfakaha, Sembou. Saraya, June 7, 2014
 Danfakha, Siré. Paris, Jan. 28, 2009
 Danfakha, Sady. Paris, France, Jan 20, 2009
 Dangnokho, Madi “Seyba.” Momokhono. Jun. 5, 2014
 Dansakho. Imam. Tinkoto. Jan. 20, 2014
 De Vitry, Camille. Paris, France. Jan 18, 2009
 Diaby, Ibrahima. Hara Khenna, Apr. 28, 2014
 Diakhite, Diby. Tinkoto Jan. 16, 2014
 Diakhite, Mamadou. Samecouta, Jun. 4, 2014
 Diakhite, Fode. Syllacounda, Jun. 16, 2014
 Diakite, El Hadji Saloum. Tambacounda, Jun. 20-22, 2014
 Diallo, Aliou and Moussa. Momokhono, Jun. 12, 2014
 Diallo, Mama Saliou. Duuta, May 9, 2014
 Diallo, Jean. Kedougou, Mar. 8, 2014
 Ousmane Diallo. Kanoumering, Feb. 10, 2014.
 Diallo, Idi. Tinkoto, Jan. 16, 2014
 Diallo, Yousseph. Kedougou, Jun. 5, 2014
 Diallo, Jean. Kedougou, Mar. 8, 2013
 Diallo, Torodo. Kanoumering, Feb. 9, 2014
 Diallo, Thierno. Mako, Feb. 26, 2014
 Diop, Ngary. Tinkoto, Jan. 22, 2014
 Djiguiba, Daouda. Granollers, Spain, Feb 2009
 Dramé, Mamadou. Tomboroncoto, Mar. 5, 2014
 Gueye, Sidi. Tinkoto, Jan. 16, 2014
 Kaba, Aissatou. Syllacounda, Jun. 15, 2014
 Kamara, Younkoun. Tinkoto, Jan. 18 & 21, 2014
 Kamara, Moko. Kérékonko, Feb. 16, 2014
 Karama, Bliesse. Kérékonko, Feb. 17, 2014
 Kamara, Yela. Kérékonko, Feb. 19, 2014
 Kamara, Mady. Baraboye. Jun. 15, 2014
 Kamara, Mamadou. Jun. 18, 2014
 Kamara, Madi. Mako, Mar. 5, 2014
 Kamara, Filé. Mako, Mar. 6, 2014.
 Kamara, Wulaba and Wuli Kamara. Mako, Mar. 7, 2014
 Kamara, Sajou Madi. Linguekoto, Mar. 12, 2014
 Kamara. Tombolman. Linguekoto, Mar. 12, 2014
 Kamara, Jon Kounda. Tenkoto, Mar. 27, 2014
 Kamara, Younkoun. Granollers, Spain, Feb. 2009
 Kamara, Wuilba. Bantaco, Jun. 2014
 Kamara, Kida. Baraboye, Jun. 21, 2014
 Kamassokho, Karantayé. Laminia, Jun. 12, 2014
 Kamassokho, Fodeba. Laminia, Jun. 12, 2014
 Keita, Fadien. Hara Khenna. May 29, 2014

Keita, Sayba. Hara Khenna. May 25, 2014
 Keita, Mahamadi. Bantaco, Jun. 2014
 Keita, Koumba. Tenkoto, Mar. 27, 2014
 Keita, Koumba. Kerekonko, Feb. 18, 2014
 Keita, Toumani. Mako, Feb. 23, 2014
 Kieta, Daba. Mako, Feb. 23 & Feb 25, 2014
 Keita, Niamenda. Mako, Feb. 24, 2014
 Keita, Makhan. Kanoumering, Feb. 10, 2014
 Keita, Filé. Tinkoto, Feb. 6, 2014 & Feb. 11, 2014
 Keita, Moussa. Mako, Feb. 25, 2014
 Keita, Soriba. Tinkoto, Feb. 4, 2014
 Keita, Sajou. Tomboroncoto, Mar. 3, 2014
 Kieta, Kathiaby. Bantata Bedik, Jun. 26, 2014
 Keita, Koumba. Bantata Bedik. Jun. 26, 2014
 Keita, Moussa. Mako, Mar. 3 & 20, 2014
 Keita, Diba Felix. Tenkoto, Mar. 15, 2014
 Ndiaye, Wali. Tinkoto, Jan. 24, 2014
 Ouadrigo. Tomboroncoto, Mar. 10, 2014
 Sadiakho, Filé. Kedougou, Jun. 2014
 Sadiakho, Ramatou. Kerekonko, Feb. 18, 2014
 Sadiakho, Saloum. Kedougou, Feb. 14, Mar. 20 & Jun. 16, 2014
 Sadiakho, Moussa. Niemeneke, Mar. 18, 2014
 Sadiakho, Mady. Baraboye, Jun. 15, 2014
 Samoussa, Dioula. Laminia, Jun. 11, 2014
 Sangara, Abdou. Tinkoto, Feb. 8, 2014
 Sagna, Mamadou. Momokhono, Mar. 31, 2014
 Sidibé, Dofilé. Kedougou, Feb. 15, 2014
 Sidibé, Bana. Kanoumering, Feb. 9, 2014
 Souaré, El Hadji Alpha Diby. Mako, Mar. 22, 2014
 Souaré, Mamadou Lamine. Syllacounda, Jun. 17, 2014
 Saouré, Cheikhou. Paris, France, Jan. 2009 & April 2013.
 Sy, Lamine. Kedougou, Mar. 18, 2014
 Sy, Alassane. Tinkoto, Jan. 24, 2014
 Tigana, Vieux Moussa. Momokhono, March 15, 2014
 Tigana, Moussa. Momokhono, June 6, 2014
 Tigana, Vieux Moussa. Momokhono, Apr. 15, 2014
 Tounkara. Diourakuntigi. Tambamounia, Mar. 13, 2014
 Tounkara, Ibrahima. Tambamounia, Mar. 13, 2014
 Tounkara. Niemeneke, Mar. 19, 2014
 Touré, Tounkoun. Kedougou, Mar. 16 & 17, 2014
 Touré, Yaya. Tinkoto, Jan. 24, 2014
 Touré, Lamine and Sadou Mody Kaba. Kedougou, Feb. 13, 2014
 Traouré, Oussenou. Mako, Feb. 25, 2014
 Traouré, Neege. Duuta, March 10, 2014
 Touré, Toumani. Momokhono. Apr. 16 & Jun. 4, 2014
 Traouré, Neege. Duuta, Apr. 10, 2014

Unrecorded Interviews (Only Those Cited In Text)

Bakhoun, Aliou. Kedougou, Jan – Aug. 2014
Bertrand, Yves. Kedougou, Mar 29, 2014
Ndiaye, Abdoulaye Aziz, Dakar and Kedougou, Jan – Jul. 2014
Diagne, Papa Mababa, Dakar, Jan – Jul. 2014
Cissokho, Siriman. Tinkoto, Jan 23, 2014
Cissokho, Kalidou. Kedougou, Jan 2014
Diallo, Macire. Kedougou, Feb & Mar 2014
Diop, Cheikh. Kedougou, Apr – Jun. 2014
Diop, Alioune. Kedougou, Jun 6, 2014
Diallo, Yaya. Kedougou, Oct. 5, 2013
Diallo, Pape Dayo. Kedougou, Dec 2013
Diouf, Babacar. Dakar, Apr. 2, 2013
Guirassy, Mamadou. Kedougou, Jun. 15, 2014
Khouma, Modou. Kedougou, Dec. 2013
MacKenzie, Alex. Dakar, Apr-May 2014
Moussa, Diba. Dakar and Kedougou, Feb-Jun 2014
Mbaye, David. Dakar, April 13, 2014
Monékhata, Aliou. Kedougou, Apr. 22 & Jun. 23, 2014
Ndiaye, Abdoulaye Aziz. Dakar, Mar-Jun 2014
Ndiaye, Habib Léon. Kedougou, Mar 28, 2014.
N'Dionge, Mamadou. Mako, Mar 2
Sarr, Alioune. Dakar, June 2014
Sidibé, Bocar. Kedougou, Mar. 25, 2014
Signaté, Mamadou. Kedougou, Jun. 17, 2014
Sow, Hamidou. Dakar, April 14
Sy, Lamine. Kedougou, Dec. 2013.
Sylla, Chieck. Mako, March 20
Toure, Colonel Cheikh Tidiane. Kedougou, Jun. 17, 2014
Vopni, Lauren. Dakar, April 18, 2014

Radio Broadcast Recordings

Sy, Lamine, Regional Director, Direction of Mines and Geology, interview on Radio Communautaire, Kedougou, 2013.
Dramé, Mamadou, President de la Federation des Orpailleurs de Kedougou, interview on Radio Communautaire, Kedougou President, August 23, 2013
Conseillers de la Region de Kedougou, interview on Radio Communautaire, Kedougou, 2013.

Newspaper Articles And Online Blogs

Bertho, Alain. *Anthropologie du présent* (blog), February 20, 2015, <https://berthoalain.com/>

Sagne, Aly. *The Voice of Communities Affected by Business Activities* (blog), <https://alysagne.wordpress.com/>.

Barry, Moustapha. "Suites aux émeutes de Kédougou: Me Sidiki Kaba commis pour défendre les manifestants." *Walfadjiri*, December 30, 2008.

Barro, Mahamadou L. "La declaration du President Macky Sall après sa visite a Sabodala (Kedougou), *Sudestinfo.com*, April 17, 2014. Accessed on April 17, 2016, <https://www.youtube.com/watch?v=laHB63J2X1s>.

Bertho, Alain. *Anthropologie du présent* (blog), February 20, 2015, <https://berthoalain.com/>

Correau, Laurent. "Emeutes de Kédougou: le Président Wade gracie 19 condamnés." *Radio France International*. April 19, 2010.

Debo, Soly Bourama. "Les orpailleurs de Kedougou voteront sanction après la fermeture des sites." *Radio Television Senegal*, May 18, 2014. Accessed on March 17, 2016, <https://www.youtube.com/watch?v=5q2facbJs0>.

Diaby, Adama. "Un site a fortes teneurs en or decouvert a Masswa, mais..." *EchodesCollines*, June 28, 2015.

Diallo, Khassoum. "Après Kédougou, a qui le tour?" *Le Quotidien* (Senegal), December 12, 2009.

Diallo, Moussa Seydou. "Mohamed David Mbaye, DG Randgold Senegal: "C'est a l'Etat d'investir l'argent tire de l'exploitation miniere la ou il se doit." *Le Quotidien*, July 7, 2015.

———. "Fermeture des diouras de la région de Kédougou :Galère et inquiétudes des orpailleurs traditionnels." *Le Quotidien*, September 9, 2014

Economist. "Africa Rising: A Hopeful Continent." March 2, 2013.

———. "Africa's Natural Resources: Blood Earth." April 11, 2015.

Fall, Amadou. "Reve d'Or." *Le Soleil*, April 20, 1999.

Faye, Dialigue. "Mohamed David Mbaye, Randgold: "Beaucoup de companies sont dans des difficulties." *Le Quotidien*, April 20, 2015. Accessed on March 18, 2016, <http://www.lequotidien.sn/index.php/economie/mohamed-david-mbaye-randgold-beaucoup-de-compagnies-sont-dans-des-difficultes>

Joguet, Vincent. "L'état donne son feu vert à Randgold Resources." *Le Soleil*, November 21, 2001.

Kedovins de France (blog), <http://kedovinsdefrance.over-blog.com/article-26761687.html>.

Koulibaly, Abdou Latif. "Mine d'Or du Sabodala, La Nébuleuse autour de MDL." *EnQuete Weekend Magazine* (Senegal), September 14-18, 2007.

Ndiaye, Abdou K. "Difficile cohabitation entre autochtones et sociétés minières à sabodala." *L'Observateur*, Jan 3, 2009.

Ndiaye, O. Kédougou. "La ruée vers l'or vide les écoles." *Le Soleil*, 2011.

Ndour, Pape S. "Sur la piste des trafiquants du métal jaune: Tinkoto, l'or d'un trafic." *L'Observateur*, December 1, 2014. Accessed on April 16, 2016. <http://www.igfm.sn/sur-la-piste-des-trafiquants-du-metal-jaune-tinkoto-lor-dun-traffic/>

Ngoulou, Herman Ulrich. "Sénégal: Emeutes de Kédougou – Amnesty contre les violations des droits humains." *Le Soleil*, 2008.

Nouvelle Horizon (Senegal). "Evènements tragiques de Kédougou: Wade accorde grâce présidentielle et amnistie aux 19 personnes condamnées," March 17, 2009.

Radio France International. "Emeutes de Kédougou: le président Wade gracie 19 condamnés," March 18, 2009.

Radio Television Senegal 1 (RTS1). "Les jeunes au cœur des DAC." November 10, 2014, Accessed on March 2, 2016. <https://www.youtube.com/watch?v=uXIqznkAYiY>

Radio Television Senegalaise. "Organisation des couloirs d'orpaillage traditionnel dans la région de Kédougou, June 2, 2014. Accessed January 16, 2016. <https://www.youtube.com/watch?v=Js0UsEm1tRI>

Sagna, Najib and Soly B. Dabo. "Sénégal: Après Guédiawaye, des émeutes éclatent à Kédougou!" *Walfadjiri* (Senegal), December 24, 2008.

Seck, A., "Or de Sabodala, les populations menacent de mettre le feu aux installations des exploitants," *Le Populaire*, March 6, 2007.

Sud Quotidien. "Rébellion contre les compagnies aurifères de Kédougou. *Sud Quotidien*. November 30, 2007.

———. "24 villages se rebellent contre les sociétés aurifères à Kédougou. *Sud Quotidien*," November 27, 2007.

Le Soleil, "L'or de Sabodala," July 7, 1993.

———. “Les Promesses Seront Tenues,” March 4, 1987.

Tamba, Boubacar Dembo. “Kédougou: A une an de la fin du programme social minier: L’association Kédougou action s’interroge.” *Quotidien* (Senegal), July 14, 2012.

———. “Kédougou: Procès des ‘émeutes’ la région en sanglots, les Kédovins de Tamba sonnent la mobilization.” *Tambacoundainfo* (Senegal), January 11, 2009.

———. “Kédougou, insécurité dans les zones d’orpaillage: une femme tue un homme.” *Tambacoundainfo*, 2009.

———. “Que cache t-on aux journalistes ayant effectué le déplacement ce Samedi sur Sabodala?” *Sud Quotidien*, July 9, 2007.

———. “Kedougou: Fermeture du site d’orpaillage de Sambrambougou, plusieurs jeunes senegalais contraints au chômage.” *Tambacoundainfo*, May 28, 2014. Accessed Nov. 12, 2015, <http://www.tambacounda.info/2014/05/28/kedougou-fermeture-du-site-dorpaillage-sambrambougou-plusieursjeunes-senegalais-contraints-au-chomage/>

Komnienic, Ana. “Senegal wants mining industry to drive economy.” *Mining.com*, Jan 28, 2014, Accessed on April 1, 2016, <http://www.mining.com/senegal-wants-mining-industry-to-drive-economy-10895/>

Thiam, Abdoulaye. “Pensons à l’avenir et non au profit immédiat dans l’exploitation de nos mines.” *Sud Quotidien*, August 16, 2007.

Unpublished And Informally Published Reports And Websites

Amnesty International. *Mining and Human Rights in Senegal: Closing the Gaps in Protection*. London, 2015.

Barry, Mamadou, ed. *Regularizing Informal Mining: A Summary of the Proceedings of the International Roundtable on Artisanal Mining, Organized by the World Bank*, May 17-19, 1995, Industry and Energy Department (Occasional Paper No. 6). Washington, DC, 1995.

Business for Social Responsibility, *The Social License to Operate*. 2003.

http://www.sdsg.org/wp-content/uploads/2013/04/file_BSR_Social_License_to_Operate.pdf.

International Council on Mining Metals. *Working Together: How large-scale miners can engage with artisanal and small-scale miners*. International Finance Corporation's Oil, Gas, and Mining Sustainable Community Development Fund, 2009.

Human Rights Watch. *Un mélange toxique. Travail des enfants, mercure et orpaillage au Mali*, 2011. Accessed on 4 March 2014.

http://www.hrw.org/sites/default/files/reports/mali1211fr_forinsertlr.pdf.

International Finance Corporation. *Strategic Community Investment: A Good Practice Handbook for Companies Doing Business in Emerging Markets*. Washington, D.C., 2010.

International Labour Organisation. *Social and Labour Issues in Small-Scale Mines*. Report for Discussion at the Tripartite Meeting on Social and Labour Issues in Small-Scale Mines. Geneva, International Labour Organization, 1999.

McKinsey Global Institute, *Lions on the Move: The progress and potential of African Economies*. Washington, D.C., June 2010.

Oxfam America. *Golden Rules: Making the Case for Responsible Mining. Earthworks: Report for Oxfam*. Accessed April 18, 2010. Earthworks: Report for Oxfam, 2007.

Oxfam America. *Dirty Metals: Mining, Communities, and the Environment*. Earthworks: Report for Oxfam, 2004.

Programme d'Appui au Secteur Minier (PASMI). *Présentation des expériences pilotes. Objectifs et résultats*. Dakar, Senegal, 2009.

Seydou, Keita. "Study on artisanal and small-scale mining in Mali." Mining, Minerals and Sustainable Development, Working Paper 80, International Institute for Environment and Development. London, 2001.

Teranga Gold Corporation. *Teranga Development Strategy, 2014*. Accessed March 28, 2016, http://s1.q4cdn.com/851853033/files/doc_downloads/CSR/140318_TDS_FULL_Eng_v001_k1v5hc.pdf.

Tropica Environmental Consultants. *Etude d'impact environnemental et social du projet d'exploitation d'or, d'argent et de substances connexes de Saboadala (rapport provisoire)*. Dakar, Senegal, 2006.

United Nations Economic Commission for Africa. *Reports on selected themes in natural resources development in Africa: Artisanal and small-scale mining and technology challenges in Africa*. Addis Ababa, 2003.

United Nations Department of Economic and Social Affairs. *Mineral Resources Development with Particular Reference to the Developing Countries*. New York: United Nations, 1970.

United Nations. *Guidelines for the Development of Small/Medium-Scale mining*. New York: United Nations, 1993.

United Nations. *Small-Scale Mining in Developing Countries*. New York: United Nations, 1972.

United States Agency for International Development. *Democracy, Human Rights and Governance: Assessment of Senegal*. Washington, DC, 2003.

World Bank. *The millennium development goals and small-scale mining: A conference for forging partnerships for action*. Workshop Report. Washington, DC, 2005.

World Bank. *Mining Strategy for Africa*. Africa Technical Department Series, Mining Unit, Industry and Energy. Washington, DC, 1992.

World Bank. *International Round Table on Artisanal Mining*. Washington, DC, 1995.

World Gold Council, Interactive gold price chart, Accessed May 7, 2014. www.gold.org/investment/interactivegold-price-chart.

Dissertations And Theses

- Carpenter, Nathan. "Sovereignty along a West African Frontier: The Creation of the Guinea--Senegal Border, 1850–1920." PhD diss., History, University of California, Davis, 2012.
- Conde, Diasso. "Monographie Historique de Bouréfné, des origines a l'indépendance," Kankan, Guinée: Université Julius N'Yerere de Kankan, 1991.
- Danfakha, Marakary. "Kédougou: Ville Originale d'une Région Enclavée." Mémoire de Maîtrise en Géographie, Université de Cheikh Anta Diop, 1971.
- Dia, Néné. "Activité minière et culture cotonnière: l'exemple de la mine d'or de Sabodala au Sud-est du Sénégal." Mémoire de Maîtrise en Géographie, Université Gaston Berger de Saint-Louis, 2006.
- Dia, Abdoulaye. Caractères et significations des complexes magmatiques et métamorphiques du secteur de Sandikounda-Laminia (Nord de la boutonnière de Kedougou, Est du Sénégal) - Un modèle géodynamique du Birimien de l'Afrique de l'Ouest. Thèse, université de Dakar, 1988.
- Diallo, Mouhamadou Lamine. "Mines et dynamiques spatiales dans le Sud-est du Sénégal: l'exemple de la communauté rurale de Khossanto." Mémoire de Maîtrise en Géographie, Université Gaston Berger de Saint-Louis, 2006.
- . "Gouvernance minière et développement durable au Sénégal: l'exemple des ICS dans les communautés rurales de Darou Khoudoss et Taïba Ndiaye et de la mine d'or de Sabodala à Khossanto. Mémoire de DEA en Géographie, Université Gaston Berger de Saint-Louis, 2008.
- Ece, Melis. "Conserving Nature, Transforming Authority: Eviction and Development at the Margins of the State: The Niokolo-Koba National Park, Senegal." PhD diss., Anthropology, City University of New York, 2012.
- Fultz, Katherine. "Economies of Representation: Communication, Conflict, and Mining in Guatemala." PhD diss, Anthropology, University of Michigan, 2015.
- Fredericks, Rosalind Cooke. "Doing the Dirty Work: The Cultural Politics of Garbage Collection in Dakar, Senegal." PhD diss, Geography, University of California, Berkeley, 2009.
- Greig, Isabelle. "Le Sénégal oriental à l'aube du développement minier : quels enjeux pour les collectivités locales?" Mémoire de master lettres arts sciences humaines et sociales, Ecole Normale Supérieure de Lettres et Sciences Humaines de Lyon, 2006.
- Hayden, Christopher Ellis. "Of Medicine and Statecraft: Smallpox and Early Colonial Vaccination in French West Africa (Senegal-Guinea)." PhD diss., History, Northwestern University, 2008.

- Mbodj, Fatimata Bineta. "Boom aurifère a l'est du Sénégal, l'ouest du Mali et au nord-est de la Guinée: mutations socio-économiques et spatiales d'anciennes marges géographiques et économiques." Thèse de doctorat de géographie, Université Gaston Berger, St. Louis, Sénégal, 2011.
- Ninot, Olivier. "Vie de relation organisation de l'espace et développement en Afrique de l'ouest: la région de Tambacounda au Sénégal." PhD diss., Géographie, L'Université de Rouen, 2003.
- N'Gom, P. M. Contribution à l'étude de la série birimienne de Mako dans le secteur aurifère de Sabodala (Sénégal oriental). Thèse université de Nancy 1, 1995.
- N'Diaye, P.M. Etude géologique et métallogénique de la partie septentrionale du granite de Saraya (Sénégal oriental). Thèse, université de Dakar, 1986.
- Niang, Biraimé. "Impacts environnementaux liés à l'utilisation du mercure lors de l'exploitation artisanale de l'or dans la région de Kedougou (Sénégal oriental)." PhD diss., Faculté des Sciences de l'Université de Genève, 2014.
- Sow, Khadre. "Risques de l'exposition au mercure liés à l'exploitation artisanale de l'or au Sénégal Oriental." Thèse de pharmacie, Université de Cheikh Anta Diop, 2010.
- Stirling, Peter. "Deconstructing 'Community' in Community-Based Natural Resource Management (CSNRM): Investigating Traditional Method of Subsistence (TMoS), Traditional Ecological Knowledge (TEK), and Ethnic Diversity for more effective resource management in the Kedougou Region of Senegal." Master of Environmental Studies in Geography, University of Waterloo, 2012.
- Traore, Sekou. "Monographie Historique De Tiguibri "Siguiri": Des Origines a 1958." Thesis, Université de Kankan, Guinée, 1989.
- Thiaw, Ibrahima. "Archeological Investigations of Long-Term Culture Change in the Lower Falemme (Upper Senegal River) A.D. 500-1900." PhD Diss., Archeology, University of Texas, Houston, 1999.

Published Primary Sources

- Arcin, Andre. *La Guinée Française: Races, Religions, Coutumes, Production, Commerce*. Edited by Augustin Challamel. Paris: Librairie Maritime et Coloniale, 1907.
- Arnaud, Gilbert. "Les ressources minières de l'Afrique Occidentale française." In *Bulletin de la Direction fédérale des Mines et de la Géologie*. Dakar, 8 (1945).
- Aubert, Andre. "Legendes historiques et traditions orales recueillies en Haute-Gambie," *Bulletin du Comité d'études historiques et scientifiques de l'Afrique occidentale française*, 6 (1923).
- Balandier, George. "L'or de la Guinée française," *Presence africaine: Bulletin d'information et de correspondance de l'Institut français d'Afrique noire*, no 4, 539-548.
- Barrat, Maurice, "Les mines d'or du bassin du Senegal," *Variétés* (1896);
- Bassot, Jean Pierre. *Étude géologique du Sénégal Oriental et de ses confins Guinéo-Maliens*. Paris: Editions Bureau de Recherche Géologique et Minière, 1966.
- . "Compilation des études et prospection exécutées depuis 1945 sur les terrains anciens du Sénégal Oriental." Paris: Editions Bureau de Recherche Géologique et Minière, 1964.
- Bayol, Jean. *Voyage en Sénégambie: Haut-Niger, Bambouck, Fouta-Djallon et Grand-Beledougou, 1880-1885*. Paris: L. Baudoin, 1888.
- Belan, Alan. "L'or dans le cercle de Kedougou," *Notes Africaines* (1946) 31, 9-12.
- Binger, Louis. *Du Niger au Golfe de Guinée*. Paris, Hachette, 1892.
- Blondel, Fernand. "Études: Les recherches d'or en Afrique française." *La chronique des mines coloniales*, 33 (1934), 362-9.
- . "Le problème minier aux colonies." *Le Monde colonial illustré* (mai 1930), 219-130.
- . "La richesse minière inconnue de la France d'outre-mer." *Bulletin de la Société industrielle de l'Est* (Nancy 1931), 5-20
- . "Les services géologiques coloniaux." *Comptes-rendus de l'Académie des Sciences coloniales*, séance du 21 mai 1930 (1932), 445-456.
- Boucard, Claude, "Relation de Bambouc," *Bulletin de l'Institut Fondamental d'Afrique Noire*, Série B 36, 2 (1974 [1729]): 227-245
- Caillie, Rene. *Travels through Central Africa to Timbuctoo; and Across the Great Desert, to Morocco*. London: Henry Colburn and Richard Bentley, 1830.

- Caillié, René. *Voyage à Tombouctou*. Paris: La Découverte, 1996 [1830].
- Chambonneau, “Relation du Sr Chambonneau, commis de la compagne de Sénégal, du voyage par luy fait en remontant le Niger,” *Bulletin de Géographie Historique et Descriptive* 2 (1898 [1688]), 308-321
- Coste d’Arnobat, Charles-Pierre. *Voyage au pays de Bambouc: suivi d’observations intéressantes sur les castes indiennes, sur la Hollande et sur l’Angleterre*. Bruxelles: Dujardin and Defer de Maisonneuve, 1789.
- Carrère, Frédéric and Paul Holle, *De la Sénégambie Française*. Paris, 1855.
- Cornevin, Robert. “Alfa Yaya Diallo fut-il un héros nationale de Guinée ou l’innocent victime d’un règlement de compte entre gouverneurs?” *Revue Française d’histoire d’outre mer*, 208 (1970), 288–296.
- Coussieu, Henri. “L’or En Haute-Guinée Française,” *Bulletin de la Société de l’Industrie Minérale* 57 (1911): 509-58.
- David, Pierre-Felix-Barthélemy. *Journal d’un voyage fait en Bambouc en 1744*. Paris: Société française d’histoire d’outre-mer et Librairie Orientaliste Paul Geuthner S.A., 1974.
- Delafosse, Maurice. *Haut-Senegal-Niger* (Soudan français). Governor Marie Francois Joseph Clozel, ed. Paris: E. Larose, 1912.
- Delacour, Andre. “Les Tenda (Koniagui, Bassari, Badyaranke) de la Guinée Française.” *Revue d’ethnographie et de sociologie* 3, nos. 9–10 (1912): 287–296.
- de Papigny, Hoppolyte Marie Mathelin. “Note sur les exploitations indigènes du Satadougo.” *Bulletin du Comité d’études historiques et scientifiques de l’Afrique occidentale française*, 8:3 (1925), 394-404.
- Durand, Jean-Baptiste-Léonard. *Voyage au Sénégal*. Paris, 1802.
- Ganier, Germaine. “Note sur Jean Bayol, 1849–1905.” *Cahiers d’Etudes Africaines* 15, 58 (1975): 287–301.
- Gessain, Robert. “Introduction à l’étude du Sénégal Oriental (Cercle de Kédougou),” *Cahiers du Centre de recherches anthropologiques*, XI°, 5, 1-2 (1963), 5-85.
- Golberry, Silvester Meinrad Xavier. *Travels in Africa*. Translated by W. Mudford. London, 1808[1802].
- Goloubinow, R. “La Prospection et les Gisements d’or de Demain,” *Publications du Bureau d’études géologiques et minières coloniales*, 15 (1940), 5-11.

- Hecquard, Hyacinthe. *Voyage sur la côte et dans l'intérieur de l'Afrique occidentale*. Paris: Imprimerie de Bénard et compagnie, 1855.
- Henry Hubert. *État actuel de nos connaissances sur la géologie de l'Afrique occidentale, carte au 1/5 000 000e*. Paris: Larose, 1911.
- Hippolyte Marie Mathelin de Papigny. "Note Sur Les Exploitations Indigènes Du Satadougou." *Bulletin du Comité d'études historiques et scientifiques de l'Afrique occidentale française* 8, no. 3 (1925): 394-404.
- Hubert, Henry. "Coutumes indigènes en matière d'exploitation de gîtes aurifères en Afrique occidentale." *Annuaire et mémoires du Comité d'études historiques et scientifiques de l'Afrique occidentale française*. Gorée, Senegal (1917), 226-243.
- Hubert, Henry. *La Géologie et les Mines de la France d'Outre-Mer*. Afrique Occidentale Française et Togo, 1932, Publications du Bureau d'études géologiques et minières coloniales (1932), 205-239.
- Jobson, Richard *The Golden Trade*. London: The Penguin Press, 1930[1623].
- Keita, Fodeba. "Autour des placers de Siguiri." *Notes Africaines* 25 (1945), 16-18.
- Labat, Jean-Baptiste *Nouvelle relation de l'Afrique Occidentale*. Paris, 1728.
- Labouret, Henri. "L'Afrique Occidentale Française en 1934," *Afrique française, Comité de l'Afrique Française et du Comité du Maroc (Bulletin Mensuel)*. Paris: Imprimerie Nationale, 1936.
- Lambert, M. "Voyage dans le Fouta-Djalon." *Le Tour du Monde* (1861–1862), 373–400.
- Le Barbier, Louis. "Comment les Noirs extraient l'or a la Cote d'Ivoire." *Tour du Monde* (1903), 88-89.
- Malavoy, Jean. "Les travaux du Service Géologique et des Mines de l'AOF." *Congrès international des mines, de la métallurgie et de la géologie appliquée* (1936): 1025-1033.
- Ousmane, William Mbaye. *President Dia*. Documentary Film. Films Mame Yande, 2012
- Medioni, René. "Le BRGG (Bureau de Recherches géologiques et géophysiques, 1941-1953), premier ancêtre direct du BRGM." *Travaux du comité français d'histoire de la géologie (cofrhigéo)*, Troisième série, t. Xxiii, 5 (2009), 99-113.
- Mollien, G. *Travels in the Interior of Africa, to the Sources of the Senegal and Gambia*. London, 1820.

- Moore, Francis. *Travels into the Inland Parts of Africa*. London, 1733.
- Neilson, James M. "Strategies for small-scale mining and mineral industries: report of a regional workshop held at Mombasa, Kenya, April 14-25," Association of Geoscientists for International Development 1982.
- Niane, Djibril Tamsir. *Expédition archéologique à Niani*. Conakry: INRDG, 1966.
- Noirot, Ernest. *A Travers le Fouta-Diallon et le Bambouc*. Paris, 1882.
- Park, Mungo. *Travels in the Interior Districts of Africa Performed in the Years 1795, 1796 and 1797*. London, 1816.
- Pre, Roland. *L'Avenir De La Guinee Francaise*. Paris: Presses de Roger Lescaret, 1951.
- Raffenel, Anne. *Voyage dans l'Afrique occidentale*. Paris: A. Bertrand, 1846.
- Rancon, Andre. *Dans la Haute-Gambie: Voyage d'Exploration Scientifique, 1891-1892*. Paris, 1895.
- Robeaquain, Charles, "Problèmes de l'économie rurale en A.O.F.," *Annales de Géographie* 46 (1937), 137-163.
- Savineau, Denise. "Séjour à Siguiiri et sur quelques placers du Cercle, du 12 au 15," présenté à M. le Gouverneur Général de l'AOF (Marcel de Coppet), 1-32. Paris, 1938.
- Serrant, Emile *Les mines et les gisements d'or de l'Afrique occidentale*. Paris, Nadaud, 1889.
- Siossat, J. "Les Coutumes des Orpailleurs Indigenes du Maramandougou," *Bulletin du Comite d'études historiques et scientifiques de l'Afrique occidentale française* (1938), 336-349.
- Valdant. *L'exploitation indigene des terrains auiferes de Siguiiri: ses repercussions sur la vie economique et sociale*, BIRRGG-Afrique Occidentale Francaise, 191 (Dakar, 1938), 117-120.
- Witschard, Fred. *Contribution à l'étude géologique, pétrographique et métallogénique des massifs granitiques du Sénégal oriental*. Orleans: Editions Bureau de Recherche Géologique et Minière, 1965.

Secondary Literature (Books, Book Chapters, Articles)

- Adas, Michael. *Machines as the Measure of Men: Science, Technology, and Ideologies of Western Dominance*. Ithaca: Cornell University Press, 1989.
- Allman, Jean. "Between the Present and History: African Nationalism and Decolonization." In *Oxford Handbook on Modern African History*, edited by John Parker and Richard Reid. Oxford: Oxford University Press, 2013.
- Amin, Samir. *Trois expériences africaines de développement: Le Mali, La Guinée et la Ghana*. Paris: Presses Universitaires de France, 1965.
- Amselle, Jean-Loup. "Ethnies et espaces: pour une anthropologie topologique." In *Au coeur de l'ethnie*, edited by Jean-Loup Amselle and Elikia M'Bokolo. Paris: Éditions La Découverte, 1985.
- . *Mestizo Logics: Anthropology of Identity in Africa and Elsewhere*. Translated by Claudia Royal. Stanford: Stanford University Press, 1998.
- Amselle, Jean-Loup and E. Gregoire. "Complicités et conflits entre bourgeois d'Etat et bourgeoisies d'affaires: Au Mali et au Niger." In *L'Etat contemporain en Afrique*, edited by E. Terray, 23-47. L'Harmattan, Paris, 1988.
- Anderson, Warwick. "Introduction: Postcolonial technoscience," *Social Studies of Science*, Vol. 32, No 5/6 (2002): 643-658.
- Appia, Beatrice. "Les forgerons du Fouta Djallon," *Journal de la Société des Africanistes*, 35:2 (1965), 317-352.
- Appel, Hannah. "Offshore Work: Oil, Modularity, and the How of Capitalism in Equatorial Guinea," *American Ethnologist* 39:4 (2011).
- . "Walls and White Elephants: Oil Extraction, Responsibility, and Infrastructural Violence in Equatorial Guinea," *Ethnography* 13: 4 (2001).
- Apter, Andrew. *The Pan-African Nation: Oil and the Spectacle of Culture in Nigeria*. Chicago: University of Chicago Press, 2005.
- Askew, Kelly. *Performing the Nation: Swahili Music and Cultural Politics in Tanzania*. Chicago: University of Chicago Press, 2002.
- Austen, Ralph A. *African Economic History: Internal Development and External Dependency*. Portsmouth, NH: Heinemann, 1987.
- . *In Search of Sunjata: The Mande Oral Epic as History, Literature, and Performance*. Bloomington: Indiana University Press, 1999.

- Austin, Ralph A., and Daniel Headrick. "The Role of Technology in the African Past." *African Studies Review* 26:3/4 (1983): 163-184.
- Auzias, Dominique, and Jean-Paul Labourdette. *Le Petit Futé Sénégal Country Guide: 2011-12*. Paris: Nouvelles Editions de l'Université, 2012.
- Ba, Amadou Hampate, and G. Dieterlen. *Koumen: Texte Initiatique des Pasteurs Peul*. Paris, 1961.
- Babou, Cheikh Anta. *Fighting the Greater Jihad: Amadou Bamba and the Founding of the Muridiyya of Senegal, 1853-1913*. Athens: Ohio University Press, 2010.
- Bah, El Hadj Thierno Mamadou. *Histoire du Fouta-Djallon*. 2 vols. Paris: Harmattan, 2008.
- Bah, Thierno Mamadou. *Histoire du Fouta-Djallon: des origines au XXe siecle*. Conakry: Societe africaine d'edition et de communication, 1999.
- Bakhtin, Mikhail. *The Dialogic Imagination: Four Essays*. Austin: University of Texas Press, 1992.
- Ballard Chris and Glenn Banks. "Resource Wars: The Anthropology of Mining," *Annual Review of Anthropology*, Vol 32 (2003), 287-313
- Banchirigah S. M. and G. Hilson, 'De-agrarianization, re-agrarianization and local economic development: Re-orienting livelihoods in African artisanal mining communities' *Policy Sciences* (2010) 43:157-80
- Barry, Boubacar. *Senegambia and the Atlantic Slave Trade*, translated by Ayi Kwei Armay. Cambridge: Cambridge University Press, 1988.
- Barry, Ismael *Le Fuuta-Jaloo face a la colonisation*. Paris: Editions Harmattan, 1997.
- Barrows, Leland C. "Faidherbe and Senegal: A Critical Discussion." *African Studies Review* 19, no. 1 (1976): 95-117.
- Bassett, Thomas. *The Peasant Cotton Revolution in West Africa, Côte d'Ivoire, 1880-1995*. New York: Cambridge University Press, 2001.
- . "La Traite Atlantique des Esclaves et ses Effets Economiques et Sociaux en Afrique: La cas du Galam, Royaume de l'Hinterland Senegambien au Dix-Huitieme Siecle." *The Journal of African History*, Vol. 27, No. 2 (1986), 269-293.
- . "Mamdou Lamine Drame et la Resistance Anti-Imperialiste dans le Haut-Senegal (1885-1887)." *Notes Africaines*, 125 (1970), 20-32.

- Bathily, Abdoulaye. *Les portes de l'or: Le royaume de Galam (Sénégal) de l'ère musulmane au temps de nègriers (VIII-XVIIIe siècles)*. Paris: Éditions Harmattan, 1989.
- Baum, Robert M. *Shrines of the Slave Trade: Diola Religion and Society in Pre-colonial Senegambia*. New York, 1999,
- Bayart, Jean-François. *The State in Africa: The Politics of the Belly*. Longman Group United Kingdom, 1993.
- Beinart, William. "African History and Environmental History." *African Affairs* 99:395 (2000), 269-302.
- Beinart, William and Joann McGregor, eds. 2003. *Social History and African Environments*. Oxford: James Currey.
- Beusekom, Monica van. *Negotiating Development: African Farmers and Colonial Experts at the Office du Niger, 1920-1960*. Portsmouth, NH: Heineman, 1992.
- Berry, Sara. *No Condition is Permanent: The Social Dynamics of Agrarian Change in Sub-Saharan Africa*. Madison, WI: University of Wisconsin Press, 1993.
- Bonneuil, Christophe. *Des savants pour l'empire: la structuration des recherches scientifiques coloniales au temps de "la mise en valeur des colonies françaises," 1917-1945*. Paris: ORSTROM, 1991.
- . "Development as Experiment: Science and State Building in Late Colonial and Postcolonial Africa, 1930-1970," 15, 2nd series, "Nature and Empire: Science and the Colonial Enterprise" *Osiris* (2000): 258-281.
- Boone, Catherine. *Merchant Capital and the Roots of State Power in Senegal 1930-1985*. New York: Cambridge University Press, 1992.
- Bredeloup, Sylvie. *La Diams'pora Du Fleuve Senegal: Sociologie Des Migrations Africaines*. Paris: Presses Universitaires du Mirail, 2007.
- Breckenridge, Keith. "'Money with dignity': Migrants, mine lords and the cultural politics of the South African gold standard crisis, 1920-33." *The Journal of African History* 36:2 (1995), 271-304
- Brenner, Louis. *Controlling Knowledge: Religion, Power, and Schooling in a West African Muslim Society*. Bloomington: Indiana University Press, 2001.
- BRGM. *Objectif Terre: 50 ans d'histoire du BRGM*. Orleans: BRGM, 2009.
- Bridge, G. "Mapping the bonanza: geographies of mining investment in an era of neoliberal reform," *Professional Geographer* 56:3 (2004), 406-21.

- Brooks, George E. *Landlords and Strangers: Ecology, Society, and Trade in Western Africa, 1000-1630*. Boulder, Westview Press, 1993.
- Buggenhagen, Beth. *Muslim Families in Global Senegal: Money Takes Care of Shame*. Bloomington: Indiana University Press, 2012.
- Buroway, Michael. *The Colour of Class on the Copper Mines: From African Advancement to Zambianization*. Manchester, 1972.
- Campbell, Bonnie K., ed. *Modes of Governance and Revenue Flows in African Mining*. Palgrave: MacMillan, 2013.
- . “Revisiting the reform process of African mining regimes,” *Revue canadienne d’études du développement*, Vol 30, Issue 1-2 (2010), 197-217.
- . *Les Enjeux de la Bauxite: La Guinée Face aux Multinationales de l’Aluminium*. Montreal: Les Presses de l’Université de Montreal, 1983.
- Campbell, Bonnie and Jennifer Clapp. “Guinea’s Economic Performance under Structural Adjustment: Importance of Mining and Agriculture.” *The Journal of Modern African Studies* 33, no. 3 (1995).
- Carmody, Padraig. *The New Scramble for Africa*. Cambridge: Cambridge University Press, 2011.
- Carney Judith A. and Richard Rosomoff, *In the Shadow of Slavery: Africa’s Botanical Legacy in the Atlantic World*. Berkeley: University of California Press, 2009.
- Carney, Judith. *Black Rice: the African Origins of Rice Cultivation in the Americas*. Cambridge, MA: Harvard University Press, 2001.
- Carswell, Grace. *Cultivating Success in Uganda: Kigezi Farmers and Colonial Policies*. Athens, OH: Ohio University Press, 2007.
- Carter, D. M. *States of Grace: Senegalese in Italy and the new European migration*. Minneapolis: University of Minnesota Press, 1997.
- Chafer, Tony. *The End of Empire in French West Africa: France’s Successful Decolonization*. Oxford: Oxford University Press, 2002.
- . “Chirac and ‘la Françafrique’: No Longer a Family Affair,” *Modern and Contemporary France* 13:1 (2005), 7-23.
- Chambers, David Wade, and Richard Gillespie. “Locality in the History of Science: Colonial Science, Technoscience, and Indigenous Knowledge,” *Osiris* (2000) 221–40.
- Childs, Terry S., and David Killick. "Indigenous African Metallurgy: Nature and Culture."

- Annual Review of Anthropology* 22 (1993): 317-37.
- Childs, S. Terry, and Eugenia W. Herbert, Metallurgy and its Consequences, in *African Archaeology: A Critical Introduction*, edited by Ann B. Stahl (2005), 276-300.
- Chakrabarty, Dipesh. *Provincializing Europe: Postcolonial Thought and Historical Difference*. Princeton: Princeton University Press, 2000.
- Chanock, Martin. *Law, Custom, and Social Order: The Colonial Experience in Malawi and Zambia*. Cambridge: Cambridge University Press, 1985.
- Childs, Terry S., and David Killick. "Indigenous African Metallurgy: Nature and Culture." *Annual Review of Anthropology* 22 (1993): 317-37, 330.
- Cisse, Youssouf Tata. *La conferee des chasseurs Malinke et Bambara: Mythes, rites et recits initiatiques*. Ivry: Editions Nouvelles du Sud, 1994.
- . "Notes sur les societies de chasseurs Malinke." *Journal de la Société des Africanistes*, 34:2 (1964), 175-226.
- Clark, Andrew F. *From Frontier to Backwater: Economy and Society in the Upper Senegal Valley (West Africa), 1850-1920*. New York: University Press of America, 1999.
- Colson, Elizabeth. "Social Control and Vengeance in Plateau Tonga Society." *Africa*, 23/3, 1953.
- Comaroff, Jean, and John Comaroff. "Reflections on youth: From the past to the postcolony." In *Makers and Breakers: Children and Youth in Postcolonial Africa*, edited by Honwana and F De Boeck, 19–30. Trenton: Africa World Press, 2005.
- Conklin, Alice L. *A Mission to Civilize: The Republican Idea of Empire in France and West Africa*. Stanford: Stanford University Press, 1997.
- Conrad David C. "From the "Banan" Tree of Kouroussa: Mapping the Landscape in Mande Traditional History." *Canadian Journal of African Studies* 42, 2/3 (2008), 384-408.
- . *Sunjata: A West African epic of the Mande peoples*. Edited by David C. Conrad. Narrated by Djanka Tassej Condé. Indianapolis: Hackett Publishing Company, 2004.
- Conrad, David C. and Barbara E. Frank, eds. *Status and Identity in West Africa: Nyamakalaw of Mande*. Bloomington: Indiana University Press, 1995.
- Cooper, Frederick. 2014. *Citizenship between Empire and Nation: Remaking France and French Africa, 1945-1960*. Princeton: Princeton University Press.
- . "Globalization." In *Colonialism in Question: Theory, Knowledge, History*. Berkeley: University of California Press, 2005.

- . *Colonialism in Question: Theory, Knowledge, History*. Berkeley: University of California Press, 2005.
- . *Africa Since 1940: The Past of the Present*. New York: Cambridge University Press: 2002.
- . *Decolonization and African Society: The Labor Question in French and British Africa*. New York: Cambridge University Press, 1996.
- Cooper, Frederick and Randall Packard, eds. *International Development and the Social Sciences: Essays on the History and Politics of Knowledge*. Berkeley: University of California Press, 1997.
- Copans, Jean. *Les marabouts de l'arachide: la confrérie Mouride et les paysans du Sénégal*. Paris: Sycomore, 1980.
- Coquery-Vidrovitch, Catherine "Le financement de la 'mise en valeur' coloniale: méthode et premiers résultats," *Études africaines offertes à Henri Brunschwig* (Paris, 1982), 237-251.
- . "Colonisation ou imperialism: la politique africaine de la France entre les deux guerres," *Le Mouvement sociale*, No. 107 (Apr-Jun 1979), 51-76.
- . "Vichy et 'Industrialisation aux Colonies,'" *Revue d'histoire de la Deuxieme Guerre mondiale*, 29, 114 (1979), 69-94.
- . "Nationalite et citoyennete en Afrique Occidentale Francaise: originaires et citoyens dans le Senegal colonial," *Journal of African History*, 42 (2001), 285-305.
- . "La politique economique colonial," In *L'Afrique occidentale au temps des Francais: colonisateurs et colonises (c. 1860-1960)*. Paris: La Decouverte, 1992.
- Coronil, Fernando. *The Magical State: Nature, Money, and Modernity in Venezuela*. Chicago: Chicago University Press, 1997.
- Creissels, Denis. *Le maninka du Niokholo (Sénégal oriental), esquisse phonologique et morphosyntaxique, liste lexicale, textes gloses. Mandenkan, Bulletin d'études linguistiques mande*. Numero 49, Printemps, 2013.
- Cronon, William. *Nature's Metropolis: Chicago and the Great West*. New York : W. W. Norton, 1991.
- . *Changes in the Land: Indians, Colonists, and the Ecology of New England*. New York: Hill and Wang, 1983.

- Cruise O'Brien, Donal B. *The Mourides of Senegal: The Political and Economic Organization of an Islamic Brotherhood*. New York: Clarendon, 1971.
- Cruise O'Brien, Donal B., Momar-Coumba Diop, and Mamadou Diouf, eds. *La construction de l'État au Sénégal*. Paris, Éditions Karthala, 2002.
- Crush, Jonathan, Alan Jeeves, and David Yudelman. *South Africa's Labor Empire: A History of Black Migrancy to the Gold Mines*. Boulder: Westview Press, 1991.
- Cuello, Gabriel, and Loïc Robin, *Les Malinké du Konkodugu*. Paris: Harmattan, 2005.
- Curtin, Philip. *Economic Change in Precolonial Africa: Senegambia in the Era of the Slave Trade*. Madison: University of Wisconsin Press, 1975.
- . "The Lure of Bambuk Gold." *Journal of African History* 14, no. 4 (1973): 623-32.
- . *The Image of Africa: British ideas and action, 1780-1850*. Madison: University of Wisconsin Press, 1964).
- Daum, Catheirne. "Le Mali, sa démocratisation et ses émigrés." *Hommes et Migrations* 1256 (2005): 103-114.
- David, Philippe. *Les navétanes: histoire des migrants saisonnier de l'arachide en Sénégambie des origines à nos jours*. Dakar: Les Nouvelles Editions Africaines, 1980.
- de Laet, Marianne, and Annemarie Mol. "The Zimbabwe Bush Pump: Mechanics of a Fluid Technology," *Social Studies of Science* 30, no. 2 (2000): 225-63.
- De Boeck, Filip. "Domesticating Diamonds and Dollars: Identity, Expenditure and Sharing in Southwestern Zaire (1984-1997)." *Development and Change* 29 (1998): 777-810.
- De Bruijn, Mirjam and Han van Dijk, eds. *Peuls et Mandingues: dialectique des constructions identitaires*. Paris: Karthala, 1997.
- De Vitry, Camille avec les ressortissant-e-s de Sadiola. *L'or Nègre*. Toulouse, 2009.
- . *Le prix de l'or*. Film. Directed by Camille de Virty. Paris, 2004.
- Dedieu, Jean-Philippe. *La Parole Immigree: Les Migrants africains dans l'espace public en France (1969-1995)*. Paris, Klincksieck, 2012.
- Dell, Matthew. "Undermining the 'Local': Migration, Development and Gold in Southern Mali," *Journal of Intercultural Studies*, 34:5 (2013), 584-603.
- Derman, William. *Serfs, Peasants, and Socialists*. Berkeley: University of California Press, 1973.

- Dia, Mamadou. *Memoirs d'un militant du Tiers Monde: Si memoire ne ment*. Paris: PubliSud, 1985.
- Diallo, El Hadj Maladho. *Histoire du Fouta Djallon*. Paris: Harmattan, 2001.
- Diallo, O. "Les organisations paysannes au Mali (1960-90): Evolution d'un contre-pouvoir populaire en milieu paysan," *Cauris*, 2 (1990), 22-25.
- Diallo, Thierno. *Les institutions politiques du Fouta Dyalon au XIXe siecle*. Dakar: Mémoires de l'Institut fondamental d'Afrique noire, 1972.
- Diallo, Mouhamadou Lamine. "Mine d'or et développement durable: Quelques réflexions sur le site de Sabodala (Sénégal oriental)." *EchoGeo* 8, 2009.
- Diagne, Papa Syr and André Lericollais. "Le Sénégal Oriental." In *L'Atlas du Sénégal*, directed by Paul Pélissier, 60. Paris: Éditions Jeune Afrique, 1980.
- Diene, Mahamadene, Mamadou Gueye, Dinna Pathe Diallo, and Abdoulaye Dia, "Structural Evolution of a Precambrian Segment: Example of the Paleoproterozoic Formations of the Mako Belt (Eastern Senegal, West Africa), *Journal of Geosciences*, 3 (2012), 153-165.
- Diakite, El Hadji Saloum. *Sekou Toure face au General de Gaulle*. Dakar: Editions Fue de Brousse, 2006.
- Diarrah, Cheick Oumar. *Le Mali de Modibo Keita*. Paris: Editions L'Harmattan, 1986.
- Dioh, Edmond Didier Béziat, Pierre Debat and Michel Grégoire. "Comment on 'Intrusive Rocks and Tectono-Metamorphic Evolution of the Mako Paleoproterozoic Belt (Eastern Senegal, West Africa)." *Journal of African Earth Sciences* 55 (2009): 265-268.
- Diop, Momar Coumba ed., *Le Senegal et ses voisins*. Dakar: CODESRIA, 1994.
- . *Sénégal: trajectoires d'un État*. Dakar: CODESRIA, 1992.
- Diouf, Mamadou. *Histoire du Sénégal: le modèle islamo-wolof et ses périphéries*. Paris: Maisonneuve & Larose, 2001.
- . "Assimilation colonial et identité religieuses de la civilité des originaires des Quatre Communes (Senegal)." *Canadian Journal of African Studies*, 34 (1999): 565-87.
- . "Senegalese Development: From Mass Mobilization to Technocratic Elitism." In *International Development and the Social Sciences*, edited by Frederick Cooper and Randall Packard, 291-319. Berkeley: University of California Press, 1997.

- Dolan, Catherine, and Kate Roll. "Capital's New Frontier: From 'Unsuable Economies to Bottom-of-the-Pyramid Markets in Africa," *African Studies Review*, (Dec. 2013) 56:3, 123-146.
- Dozon, Jean Pierre *Frères et Sujets. La France et l'Afrique en perspective*. Paris, 2003.
- Dumett, Raymond E. *El Dorado in West Africa: The Gold-Mining Frontier, African Labor, and Colonial Capitalism on the Gold Coast, 1875-1900*. Athens: Ohio University Press, 1998.
- Dupré, G. "Aspects techniques et sociaux de l'agriculture en pays bassari." *Cahiers du Centre de recherches anthropologiques*, XI Series, 8, 1-2 (1965), 75-159.
- Dupuy, Andre-Roger and Alexe-Marie Dupuy. *Le Soldat des Bêtes: Vingt Ans de Lutte pour la Défense de la Faune Africaines*. Rennes, France: Editions Ouest-France, 1991.
- Dupuy, Andre-Roger Dupuy, ed. *Le Niokolo-Koba: Premier Grand Parc National de la République du Sénégal*. Dakar: G.I.A, 1971.
- Durham, Deborah. "Youth and the social imagination in Africa." *Anthropological Quarterly* 73:3 (2000): 113–120
- Ece, Melis. "Report: Access to Land at the Northern Periphery of Niokolo-Koba National Park, Senegal." *Dialectical Anthropology* 32 (2008): 353–382.
- Eliade, Mircea. *The Forge and the Crucible*. Chicago: Chicago University Press, 1962.
- Epstein, Steven. *Impure Science: Aids, Activism, and the Politics of Knowledge*. Berkely: University of California Press, 1996.
- Epstein, A.L. *Politics in an Urban African Community*. Manchester, 1958.
- Fanon, Frantz. *Black Skin, White Masks*. Translated by Charles Lam Markman, New York, 1967.
- Fairhead, James and Melissa Leach. *Misreading the African Landscape: Society and Ecology in a Forest-Savanna Mosaic*. Cambridge: Cambridge University Press, 1996.
- Farias, P. F. de Moraes. "Review: Great States Revisited." *The Journal of African History* 15, 3 (1974): 479–88.
- Feierman, Steven. "Afterward: Ethnographic Regions, Healing, Power, and History." In *Borders and Healers: Brokering Therapeutic Resources in Southeast Africa*, edited by Tracy J. Luedke and Harry G. West, 185-94. Bloomington: Indiana University Press, 2006.
- . "Colonizers, Scholars, and the Creation of Invisible Histories," in *Beyond the Cultural Turn: New Directions in the Study of Society and Culture*, edited by Victoria Bonnell and Lynn Hunt, 182-216. Berkeley: University of Berkeley Press, 1999.

- . “African Histories and the Dissolution of World History.” In *Africa and the Disciplines: The Contributions of Research in Africa to the Social Sciences and Humanities*, edited by Robert H. Bates, V. Y. Mudimbe, and Jean O'Barr, 167-212. Chicago: University of Chicago Press, 1993.
- . *Peasant Intellectuals: Anthropology and History in Tanzania*. Madison, WI: University of Wisconsin Press, 1990.
- Ferguson, James. *Global Shadows: Africa in the Neoliberal World Order*. Durham, NC: Duke University Press Books, 2006.
- . *Expectations of Modernity: Myths and Meanings of Urban Life on the Zambian Copperbelt*. Berkeley: University of California Press, 1999.
- . *The Anti-Politics Machine: Development, Depoliticization, and Bureaucratic Power in Lesotho*. Minneapolis, MN: Univ of Minnesota Press, 1994.
- . “Seeing Like an Oil Company: Space, Security and Global Capital in Neoliberal Africa,” *American Anthropologist* 107, 3 (2005): 377-382.
- Ferguson, James and Akhil Gupta. “Spatializing States: Toward an Ethnography of Neoliberal Governmentality,” *American Ethnologist* 29, 4 (2002): 981-1002.
- Ferry, Elizabeth. *Emma Not Ours Alone: Patrimony, Value, and Collectivity in Contemporary Mexico*. New York, 2005.
- Ferry, M.P. “Pour une histoire des Bédik (Sénégal oriental).” *Cahiers du Centre de recherches anthropologiques*, XII Series, 2, 1-2, (1967): 125-148.
- Fields-Black, Edda *Deep Roots: Rice Farmers in West Africa and the African Diaspora*. Bloomington: Indiana University Press, 2008.
- Finn, Janet. *Tracing the Veins: Of Copper, Culture, and Community from Butte to Chuquicamata*. Berkeley: University of California Press, 1998.
- Fisher, Eleanor. “Occupying the Margins: Labour integration and social exclusion in artisanal mining in Tanzania.” *Development and Change* 38, 4 (2007): 735–760.
- Foucault, Michael. *The Archaeology of Knowledge*. Translated by A. M. Sheridan Smith. New York, 1976.
- Fredericks, Rosalind. “The Old Man is Dead”: Hip Hop and the Arts of Citizenship of Senegalese Youth,” *Antipode* 46:1, 2014, 130-148.

- Fredericks, Rozy and Mamadou Diouf. *Les Arts de la Citoyenneté au Sénégal: Espaces Contestés et Civilités Urbaines*. Paris: Editions Karthala, 2013.
- Freed, Libbie. "Networks of (Colonial) Power: Roads in French Central Africa after World War I." *History and Technology* 26, no. 3 (2010): 203-33, 204.
- Freund, Bill. *Capital and Labour in the Nigerian Tin Mines*. Harlow: Longman, 1981.
- Frobenius, Leo and Douglas C. Fox, "Soninke Legends." In *African Genesis: Folk Tales and Myths of Africa* (New York, 1937), 97-136.
- Frost, Diane. *From the Pit to the Market: Politics and the Diamond Economy in Sierra Leone*. Suffolk: James Currey, 2012.
- Galvan, Dennis. *The State Must Be Our Master of Fire: How Peasants Craft Culturally Sustainable Development in Senegal*. Berkeley: University of California, 2004.
- Gary-Toukara, Daouda. *Migrants Soudanais/ maliens et conscience ivoirienne: les étrangers en Côte d'Ivoire, 1903-1980*. Paris: L'Harmattan, 2003.
- Gellar, Sheldon. *Senegal: An African Nation Between Islam and the West*. Boulder: University of Colorado Press, 1982.
- Gelman, Susan. "Essentialism." In *The MIT encyclopedia of cognitive science*. Edited by Robert A. Wilson and Frank C. Keil. Cambridge: MIT Press, 282-284. Cambridge: Cambridge University Press, 1999.
- Geschiere, Peter. *The Perils of Belonging: Autochtony, Citizenship and Exclusion in Africa and Europe*. Chicago: University of Chicago Press, 2009.
- Gessain, Monique. *Actes du 2eme Colloque de Kedougou: 18-22. Fevrier, 1985*.
- Gessain R. Introduction à l'étude du Sénégal Oriental (Cercle de Kédougou). *Cahiers du Centre de recherches anthropologiques*, XI^o Série, tome 5, 1-2 (1963), 5-85.
- Gibb, Matthew. "Artisanal and Small-Scale Mining in West Africa: An Overview of Sustainable Development and Environmental Issues." In *Small-Scale Mining, Rural Subsistence and Poverty in West Africa*, edited by Gavin M. Hilson. Warwickshire, UK: Intermediate Technology Publications Ltd., 2006.
- Ginio, Ruth. *French Colonialism Unmasked: The Vichy Years in French West Africa*. Nebraska: University of Nebraska Press, 2006.
- Golinksi, Jan. *Making Natural Knowledge: Constructivism and the History of Science*. Chicago: Chicago University Press, 1998.

- Goody, Jack. *Technology, Tradition, and the State in Africa*. Oxford: Oxford University Press, 1971.
- Golub, Alex. *Leviathans at the Gold Mine: Creating Indigenous and Corporate Actors in Papua New Guinea*. Durham: Duke University Press, 2004.
- Gomez, Michael. *Pragmatism in the Age of Jihad: The Precolonial State of Bundu*. Cambridge: Cambridge University Press, 1992.
- Goerg, Odile. *Commerce et Colonisation en Guinée, 1850–1913*. Paris: Harmattan, 1986.
- Gokee, Cameron. *Assembling the Village in Medieval Bambuk: An Archaeology of Interaction at Diouboye, Senegal*. Sheffield: Equinox Press, forthcoming.
- Gomez, Michael. *Pragmatism in the Age of Jihad: The Precolonial State of Bundu*. Cambridge: Cambridge University Press, 1992.
- Graham, Steve, and Simon Marvin. *Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition*. London, 2001.
- Gratz, Tilo. "Vigilante Groups and the State in West Africa." In *Order and Disorder: Anthropological Perspectives*, edited by Keebet von Brenda-Beckmann and Fernanda Pirie. New York: Berghahn Books (2007), 74-89.
- . "Gold Trading Networks and the Creation of Trust: A Case Study from Northern Benin," *Africa* 74-2 (2004), 147-172.
- Greenhalgh, Peter. *West African Diamonds 1919-1938: An Economic History*. Manchester: Manchester University Press, 1985.
- Gueye, Mamdou, K. Siegesmund, S. Wemmer, M. Pawlig, N. Drobe, and P. Nolte. "New evidences for an early Birimian evolution in the West African Craton: An example from the Kédougou-Kénieba inlier, southeast Senegal," *South African Journal of Geology* 110: 3 (2007), 511-534
- Gueye, Mamadou et al., "New evidences for an early Birimian evolution in the West African Craton: An example from the Kedougou-Kenieba inlier, southeast Senegal," *South African Journal of Geology* 110:3 (2007), 511-534.
- Gueye, Abdoulaye. "The Colony Strikes Back: African Protest Movements in Postcolonial France," *Comparative Studies of Asia, Africa, and the Middle East* 26, 2 (2006): 225-42.
- Guntau, Martin. "The Emergence of Geology as a Scientific Discipline," *History of Science*; xvi, (1978): 280-290.
- Gupta, Akhil. *Postcolonial Developments: Agriculture in the Making of Modern India*. Durham:

- Duke University Press, 1998.
- Guy, Jeff and Motalatsi Thabane. "Technology, Ethnicity, and Ideology: Basotho Miners and Shaft-Sinking on the South African Gold Mines." *Journal of Southern African Studies* 14, no. 2 (1988): 257-78.
- Guyer, Jane. *Marginal Gains: Monetary Transactions in Atlantic Africa*. Chicago: University of Chicago Press, 2004.
- Guyer, Jane and Samuel M. Eno Belinga. "Wealth in People as Wealth in Knowledge: Accumulation and Composition in Equatorial Africa," *Journal of African History* 36, no. 1 (1995): 91–120.
- Hall, Bruce. *A History of Race in Muslim West Africa, 1600-1960*. Cambridge: Cambridge University Press, 2011.
- Hamdun, Said and Noel King, eds. *Ibn Battuta in Black Africa*. Princeton: Wiener, 1994.
- Hansen Karen Tranberg and Mariken Vaa, eds. *Informality Reconsidered: Perspectives from Urban Africa*. Uppsala, 2004.
- Hanretta, Sean. *Islam and Social Change in French West Africa: History of an Emancipatory Community*. Cambridge: Cambridge University Press, 2009.
- Hanson, John H. *Migration, Jihad, and Muslim Authority in West Africa: The Futanke Colonies in Karta*. Bloomington: Indiana University Press, 1996.
- Hart, Keith. 1973. "Informal income opportunities and urban employment in Ghana."
- Harries, Patrick. *Work, Culture, and Identity: Migrant Laborers in Mozambique and South Africa, C.1860-1910* Portsmouth, NH: Heinemann, 1994.
- Harvey, David *The New Imperialism*. New York, 2003.
- Hayden, Cori. *When Nature Goes Public: The Making and Unmaking of Bioprospecting in Mexico*. Princeton: Princeton University Press, 2003.
- Hawthorne, Walter. *Planting Rice and Harvesting Slaves: Transformations along the Guinea-Bissau Coast, 1400–1900*. Portsmouth, N.H: Heinemann Press, 2003.
- . "Strategies of the Decentralized: Defending Communities from Slave Raiders in Coastal Guinea Bissau, 1450–1815." In *Fighting the Slave Trade: West African Strategies*, edited by Sylviane Diouf, 152–69. Athens: Ohio University Press, 2003.
- Headrick, Daniel. *The Tools of Empire: Technology and European Imperialism in the Nineteenth Century*. Oxford: Oxford University Press, 1981.

- . *The Tentacles of Progress: Technology Transfer in the Age of Imperialism, 1850-1940*. New York, 1988.
- Hecht, Gabrielle. *Being Nuclear: Africans and the Global Uranium Trade*. Cambridge, MA: MIT Press, 2012
- . Ed, *Entangled Geographies: Empire and Technopolitics in the Global Cold War*. Cambridge, MA: MIT Press, 2011.
- . "Africa and the Nuclear World: Labor, Occupational Health, and the Transnational Production of Uranium " *Comparative Studies in Society and History* 51, no. 4 (2009): 896-926.
- Hellweg, Joseph. *Hunting the Ethical State: The Benkadi Movement of Cote d'Ivoire*. Chicago: University of Chicago Press, 2011.
- Herbert, Eugenia, *Iron, Gender, and Power: Rituals of Transformation in African Societies*. Bloomington, IN: Indiana University Press, 1993.
- . *Red Gold of Africa: Copper in Precolonial History and Culture*. Madison: University of Wisconsin Press, 1984.
- Hilson Gavin and J. McQuilken, "Four decades of support for artisanal and small-scale mining in sub-Saharan Africa." *The Extractive Industries and Society* 1 (2014), 104-118.
- Hilson, Gavin. "'Once a miner, always a miner': Poverty and livelihood diversification in Akwatia, Ghana." *Journal of Rural Studies*, 26 (2010): 296-307.
- . ed. *Small-Scale Mining, Rural Subsistence and Poverty in West Africa*. Warwickshire, UK: Intermediate Technology Publications Ltd., 2006.
- High, Mette M. "Polluted money, polluted wealth: Emerging regimes of value in the Mongolian gold rush." *American Ethnologist*, 40:4 (2013): 676-688.
- Hill, Polly. *Development Economics on Trial: the Anthropological Case for a Prosecution*. Cambridge: Cambridge University Press, 1986.
- Hull Elizabeth and Deborah James, "Introduction: Popular Economies in South Africa," *Africa: The Journal of the International African Institute*, Vol. 82, 1 (2012), 1-19
- Horton, Robin "Stateless Societies in the History of West Africa." In *History of West Africa I*, edited by J.F.A. Ajayi and Michael Crowder, 78–119. New York: 1972.
- Hopkins, A.G. *Economic History of West Africa*. Oxford: Oxford University Press, 1978.

- _____. "The New Economic History of Africa." *Journal of African History* 50 (2009): 155–177.
- Hunt, Nancy Rose. *A Colonial Lexicon: Of Birth Ritual, Medicalization, and Mobility in the Congo*. Durham, NC: Duke University Press, 1999.
- Hunwick, John O. *Timbuktu and the Songhay Empire: Al-Sa‘dī’s Ta’rīkh al-sūdān down to 1613, and other Contemporary Documents*. Leiden, 2003.
- Hughes, Thomas. *Networks of Power: Electrification in Western Society, 1880-1930*. Baltimore: Johns Hopkins University Press, 1983.
- Ivaska, Andrew. *Cultured States: Youth, Gender, and Modern Style in 1960s Dar es Salaam*. Durham: Duke University Press, 2011.
- Jacoby, Karl. *Crimes Against Nature: Squatters, Poachers, Thieves, and the Hidden History of American Conservation*. Berkeley: University of California Press, 2001.
- Jansen, Jan. "What gold mining means for the Malinke, and how it was misunderstood by the French Colonial Administration." In *Worlds of debts; Interdisciplinary perspectives on gold mining in West Africa*, 95-110 Edited by Christiana Panella. Amsterdam: Rozenberg Publishers, 2010.
- Jennings, N.S. "Addressing labour and social issues in small-scale mining." *The Socio-economic Impacts of Artisanal and Small-Scale Mining in Developing Countries*, edited by Gavin Hilson, 151-60. Balkema, 2003.
- Johnson, Paul, ed. *Spirited Things: The Work of 'Possession' in Afro-Atlantic Religions*. Chicago: Chicago University Press, 2014.
- Johnson, Wesley G. *The Emergence of Black Politics in Senegal: The Struggle for Power in the Four Communes, 1900–1920*. Stanford: Stanford University Press 1971.
- Kane, Abdoulaye. "Senegal's Village Diaspora and the People Left Behind." In *The Transnational Family: New European Frontiers and Global Networks*. Edited by Deborah Bryceson and Ulla Vuorella, 245-263. New York: Berg, 2002.
- Kanté, Nambala. *Forgerons d'Afrique Noire: transmission des savoirs traditionnels en pays malinké*. Paris, 1993.
- Kanya-Forstner, A.S. *The Conquest of the Western Sudan: A Study in French Military Imperialism*. Cambridge: Cambridge University Press, 1969.
- Kiethega, Jean-Baptiste. *L'or de la Volta Noire: Archeologie et histoire de l'exploitation traditionnelle, region de Poura, Haute-Volta*. Paris: Karthala, 1983.

- Kirsch, Stuart. "Indigenous movements and the risks of counter globalization: Tracking the campaign against Papua New Guinea's OK Tedi mine." *American Ethnologist* Vol. 34, No. 2 (2007), 303-321.
- _____. *Reverse Anthropology: Indigenous Analysis of Cultural and Environmental Relations in New Guinea*. Stanford: University of California Press, 2006.
- _____. "Anthropology and Advocacy: A Case Study of the Campaign against the OK Tedi Mine." *Critique of Anthropology* 22(2) (2002): 175-200.
- _____. "Sustainable Mining." *Dialectical Anthropology* (2010) 34:87-93.
- _____. "Imagining Corporate Personhood." *Political and Legal Anthropology Review* 37:2(2014), 207-217.
- Kodesh, Neil. *Beyond the Royal Gaze: Clanship and Public Healing in Buganda*. Charlottesville: North Carolina Press, 2012.
- _____. "History in the Healer's Shrine: Genre, Historical Imagination, and Early Ganda History," *Comparative Studies in Society and History* (2007) 49:3, 527-552.
- Klare, M. *The Race for What's Left: The Global Scramble for the World's Resources*. New York, 2001.
- Keck, Margaret E., and Kathryn Sikkink. *Activists beyond Borders: Advocacy Networks in International Politics*. Ithaca, NY: Cornell University Press, 1998.
- Klein, Martin. *Slavery and Colonial Rule in French West Africa*. Cambridge: Cambridge University Press, 1998.
- Kruger, Colleen E. *Pride of Men: Ironworking in 19th Century West-Central Africa*. Portsmouth, NH: Heinemann, 1999.
- Kuklick, Henrika "Contested Monuments: The Politics of Archaeology in Southern Africa." In *Colonial Situations: Essays on the Contextualization of Ethnographic Knowledge*, edited by George Stocking, 135-169. Madison, WI: University of Wisconsin Press, 1991.
- Kusiak, Pauline. "Toubab technologies and African ways of knowing: nationalist techno-politics in Senegal." *History and Technology* 26:3 (2010): 225-249.
- Labarthe, Gilles. *L'or africain. Pillages, traffics et commerce international*. Marseille: Agone, 2007
- Lachenal, Guillaume. "The intimate rules of the French "Coopération": Morality, race and the post-colonial division of scientific work at the Pasteur Institute of Cameroon." *Evidence, Ethos and Experiment: The Anthropology and History of Medical Research in Africa*,

- edited by Wenzel Geissler & Sassy Molyneux, 373-402. Berghahn, Oxford, 2011.
- Lalouel, J., & Langaney, A. *Bedik and Niokholonko of Senegal: Inter-village relationship inferred from migration data*. *Am J Hum Genet*, 45 (1976): 453-466.
- Langaney, A., & Gomila, J. "Bedik and Niokholonko intra and inter-ethnic migration." *Human Biology; an International Record of Research*, 45, 2 (1973), 137-150.
- Laye, Camara. *L'enfant Noir*. Paris: Plon, 1953.
- Larrue, S. "Le Parc National du Niokolo-Koba: Un exemple de rupture entre le milieu et la société Mandingue (Sénégal Oriental)," *Les Cahiers d'Outre-Mer*, 55, 218 (2008), 149-174.
- Latour, Bruno. *An Inquiry into Modes of Existence: An Anthropology of the Moderns*. Cambridge, MA: Harvard University Press, 2013.
- _____. *We Have Never Been Modern*, translated by Catherine Porter. New York: Harvester Wheatsheaf, 2003.
- Launay, Robert. *Traders without Trade: Responses to Change in Two Dyula Communities*. Cambridge: Cambridge University Press, 1982.
- Legoux, Pierre, and Andre Marelle, eds., *Les mines et la recherche miniere en Afrique Occidentale Francaise*. Paris: Harmattan, 1991.
- Legvold, Robert. *Soviet Policy in West Africa*. Cambridge: Cambridge University Press, 1972.
- Lenormand, J. *L'or et le diamant en France metropolitaine et dans l'union francaise*. Paris, Editions, 1951.
- Le Roy, Etienne. "Le regime minier entre le monopole de l'Etat et le privilege de l'inventeur." In *L'Appropriation de la terre en Afrique noire: Manuel d'analyse, de decision et de gestion foncieres*, edited by Emile Le Bris, Etienne Le Roy, Paul Mathieu, 117-130. Paris: Editions Karthala, 1991.
- Lestrangé, Monique de, *La piste Etyolo-Seguekho : document pour servir à l'histoire des Bassari*, in *Cahiers du Centre de recherches anthropologiques*, XII 2 (1-2) (1967), 176- 181.
- _____. "Les Coniagui et les Bassari (Guinée Française)." Paris: Presses Universitaires de France, 1955.
- Levtzion, Nehemia. *Ancient Ghana and Mali*. London: Methuen, 1973.
- _____. "The Early States of the Western Sudan to 1500." In *History of West Africa, Volume 1*, edited by J. F. A. and Michael Crowder Ajayi, 120-57. London: Longman, 1971.

- Levtzion, Nehemia and J.F.P. Hopkins, ed, *Corpus of Early Arabic Sources for West African History*. Cambridge: Cambridge University Press, 1981.
- Li, Fabiana. *Unearthing Conflict: Corporate Mining, Activism, and Expertise in Peru*. Durham: Duke University Press, 2015.
- Livingston, Julie. *Debility and the Moral Imagination in Botswana*. Bloomington: Indiana University Press, 2005.
- Lovejoy, Paul E. "The Role of the Wangara in the Economic Transformation of the Central Sudan in the Fifteenth and Sixteenth Centuries." *The Journal of African History* 19:2 (1978), 173-193.
- Luning, Sabine. "Gold in Burkina Faso: A Wealth in Poison and Promise." In *Traditions on the Move – Essays in Honour of Jarich Oosten*, edited by. J. Jansen, S. Luning & E. de Maaker, 117-136. Amsterdam, Rozenberg Publishers:. 2009.
- Luning, Sabine, Jan Jansen, and Cristiana Panella. "The Mise en Valeur of the Gold Mines in the Haut-Niger, 1918-1939." *French Colonial History*, Vol. 15 (2014), 67-86.
- Lydon, Ghislaine. *On Trans-Saharan Trails: Islamic Law, Trade Networks and Cross- Cultural Exchange in Nineteenth-Century Western Africa*. Cambridge: Cambridge University Press, 2009.
- MacGaffey, Janet, and Rémy Bazenguissa-Ganga. *Congo–Paris: Transnational traders on the margins of the law*. Bloomington: Indiana University Press, 2000.
- MacGaffey, Janet. *The Real Economy of Zaire: An Anthropological Study*. Philadelphia: University of Pennsylvania Press, 1991.
- MacKenzie, Fiona. *Land, Ecology and Resistance in Kenya, 1880-1952*. Edinburgh: Edinburgh University Press, 1998.
- Maconachie, Roy, and Binns, T., "Beyond the resource curse? Diamond mining, development and post-conflict reconstruction in Sierra Leone," *Resources Policy*, 32, (2007), 104-115.
- Maconachie, Roy, and Hilson, G., "Artisanal gold mining—A new frontier in post-conflict Sierra Leone?" *The Journal of Development Studies*, v. 47, no. 4, (2011), 595-616.
- Machonachie, Roy.. "Re-agrarianising livelihoods in post-conflict Sierra Leone? Mineral wealth and rural challenges in artisanal and small-scale mining communities." *Journal of International Development* (2011) 23, 1054-1067.
- Maddox, G. I. Kimambo, and J. Giblin, eds. *Custodians of the Land: Ecology and Culture in the History of Tanzania*. Athens: Ohio University Press, 1996.

- Magrin, Grieg and Olivier Ninot. "Les zones soudaniennes du Tchad et du Senegal: deux sud enclaves entre mondialisation et marginalization." *Espaces, populations, societies* (2005), 15-30.
- Mamdani, Mahmoud. *Citizen and Subject: Contemporary Africa and The Legacy of Late Colonialism*. Princeton, NJ: Princeton University Press, 1996.
- Manchuelle, Francois *Willing Migrants: Soninke Labor Diasporas, 1848-1960*. Athens: Ohio University Press, 1997.
- Mann, Gregory. *Native Sons: West African Veterans and France in the Twentieth Century*. Durham, NC: Duke University Press, 2006.
- . "What's in an Alias: Family Names, Individual Histories, and Historical Method in the Western Sudan," *History of Africa*, Vol. 29 (2005), 309-320.
- . *From Empires to NGOs on the West African Sahel: The Road to Nongovernmentality*. Cambridge: Cambridge University Press, 2015.
- Mantz, Jeffrey W. "Improvisational Economies: Coltan Production in the Eastern Congo." *Social Anthropology* 16:1 (2008), 34–50.
- Marston, Sallie. "The social construction of scale." *Progress in Human Geography* 24, 2 (2000): 219-242.
- Marx, Leo "Technology: The Emergence of a Hazardous Concept," *Technology and Culture* 51:3 (2010), 561-577.
- Mauny, Raymond. Contribution à la préhistoire et à la protohistoire de la région de Kédougou (Sénégal Oriental). *Cahiers du Centre de recherches anthropologiques*, XI Series, 5, 1-2 (1963), 113- 122.
- . *Tableau Géographique de l'Ouest Africain au Moyen Age*. Dakar: Institut Fondamental d'Afrique Noire, 1961.
- Mavhunga, Clapperton *Transient Workspaces: Technologies of Everyday Innovation in Zimbabwe*. Cambridge, MA: MIT University Press, 2014.
- . "A plundering tiger with its deadly cubs? The USSR and China as weapons in the engineering of a Zimbabwean Nation, 1945-2009," In *Entangled Geographies*, edited by Gabrielle Hecht. Cambridge, MA: MIT University Press, 2011.
- Mbembe, Achille. *On the Postcolony*. Berkeley: University of California Press, 2001.
- Mbodj, Mohamed. "La crise trentenaire de l'économie arachidière." In *Sénégal: trajectoires d'un État*. Edited by Momar-Coumba Diop, 431-77. Dakar: CODESRIA, 1992.

- Mbodj, Faty. Boom aurifère et dynamiques économiques entre Sénégal, Mali et Guinée. *EchoGéo*, 8 (2009).
- McGovern, Mike. *Unmasking the State: Making Guinea Modern*. Chicago: University of Chicago Press, 2012.
- McNaughton, Patrick. *The Mande Blacksmiths: Knowledge, Power, and Art in West Africa*. Bloomington, IN: Indiana University Press, 1988.
- McIntosh, Roderick James. *Ancient Middle Niger: Urbanism and the Self-Organizing Landscape*. Cambridge, Cambridge University Press, 2005.
- . *The Peoples of the Middle Niger: The Island of Gold*. Oxford: Blackwell Publishers, 1988.
- McIntosh, Susan K. and Roderick J. McIntosh, “From Stone to Metal: New Perspectives on the Later Prehistory of West Africa,” *Journal of World Prehistory* 2, 1 (1988): 89-133.
- McLaughlin, Fiona. “Haalpulaar Identity as a Response to Wolofization.” *African Languages and Cultures*, 8, no. 2 (1995): 153-168.
- McNaughton, Patrick R. *The Mande Blacksmiths: Knowledge, Power, and Art in West Africa*. Bloomington, IN: Indiana University Press 1988.
- Meagher Kate and Ilda Lindell, eds., “Engaging with African Informal Economies: Social Inclusion or Adverse Incorporation?” *African Studies Review*, (Dec. 2013) 56:3, 57-76
- Melly, Caroline M. “Titanic Tales of Missing Men: Reconfigurations of national identity and gendered presence in Dakar, Senegal,” *American Ethnologist* 38:2 (2011), 361-376.
- Mehos, Donna and Suzanne Moon, “The Uses of Portability: circulating experts in the technopolitics of Cold War and decolonization,” In *Entangled Geographies*, edited by Gabrielle Hecht. Cambridge, MA: MIT University Press, 2011.
- Meyer, Gérard. trans. With the collaboration of Jean-Raphael Camara and Fonsa Camara. *Proverbes malinke: L'ombre des Grands Fromagers*. Paris: Fleuve et Falme, 1985.
- Meyer, Gérard. *Contes du Pays Malinke: Contes Malinkes du Senegal Oriental*. Kedougou, Mission Catholique, 1983.
- . *Lexique élémentaire malinké-français suivi d'éléments de grammaire, dialecte maninkaa du Niokolo*. Kédougou: Mission Catholique, 1983.
- Mitchell, Timothy. *Carbon Democracy: Political Power in the Age of Oil*. London, 2013.
- . *Rule of Experts: Egypt, Techno-Politics, Modernity*. Berkeley: University of California

- Press, 2002.
- Moffat Kieren and Airong Zhang. "The paths to social licence to operate: An integrative model explaining community acceptance of mining." *Resources Policy*, Vol. 39 (Mar. 2014), 61-70.
- Moodie, Dunbar T. and Vivienne Ndatshe, *Going for Gold: Men, Mines, and Migration*. Berkeley: University of California Press, 1994.
- Moore, Henrietta, and Megan Vaughan. *Cutting Down Trees: Gender, Nutrition, and Agricultural Change in the Northern Province of Zambia, 1890-1990*. Portsmouth, NH: Heinemann, 1994.
- Moore, Sally Falk, *Social Facts and Fabrications: 'Customary' Law on Kilimanjaro, 1880-1980*. New York: CUP, 1986.
- Morgenthau, Ruth Schachter. *Political Parties in French-Speaking West Africa*. Oxford: Clarendon Press, 1964.
- Moussa, Bantenga. "L'or des regions de Poura et de Gaoua: Les Vicissitudes de l'Exploitation Coloniales, 1925-1960." *The International Journal of African Historical Studies*, 28:3 (1995), 563-576.
- Nash, June. *We Eat the Mines and the Mines Eat Us: Dependency and Exploitation in Bolivian Tin Mines*. New York, 1993.
- N'Daou, Saidou Mohamed. *Sangalan Oral Traditions: History, Memories, and Social Differentiation*. Durham, NC: Carolina Academic Press, 2005.
- N'Diaye, Saki O. A. Neil Skinner and Philip D. Curtin. "The Story of Malik Sy," *Cahiers d'Études Africaines* 11:43 (1971), 467-487.
- Newbury, Catherine. "The formation of the government general of French West Africa." *Journal of African History*, 1 (1960), 111-28.
- Newell, Peter. *Environmental NGOS and Globalization: The Governance of TNCS*, edited by Robin Cohen and Shirin M. Rai, 117-133. London: The Athlone Press, 2000.
- Neuman, Roderick P. *Imposing Wilderness: Struggles over Livelihood and Nature Preservation in Africa*. Berkeley: University of California Press, 1998.
- Niane, Djibril Tamsir. *Expédition archéologique à Niani*. Conakry: INRDG, 1966.
- . "Recherches Sur L'empire Du Mali Au Moyen-Age." Edited by the Institut National de Recherches et de Documentation. Conakry: Imprimerie Nationale, 1962.

- Niang, Mamadou. *Hippocrene Standard Dictionary: Pulaar-English/English-Pulaar*. New York: Hippocrene books, 1997.
- Niang Ibrahima. "Développement du tourisme dans la région du Sénégal oriental," *Cahiers du Centre de recherché anthropologiques*, XII^o Série, tome 2:1-2 (1967), 174-176
- Nugent, Paul. *Smugglers, Secessionists and Loyal Citizens on the Ghana-Togo Frontier: The Lie of the Borderlands Since 1914*. Oxford: James Currey, 2002.
- Nugent, Robert. "End of the Rainbow." Guinea-Conakry: California Newsreel, 2007.
- Oldroyd, David R. *Thinking About the Earth: A History of Ideas in Geology*. Cambridge: Harvard University Press, 1996.
- Osborn, Emily. *Our New Husbands Are Here: Households, Gender, and Politics in a West African State from the Slave Trade to Colonial Rule*. Athens: Ohio University Press, 2011.
- . "Interpreting Colonial Power in French Guinea: The Boubou Penda-Ernest Noirot Affair of 1905." In *Intermediaries, Interpreters, and Clerks: African Employees In the Making of Colonial Africa*, edited by Benjamin Lawrance, Emily Lynn Osborn, and Richard Roberts. Madison: University of Wisconsin Press, 2006.
- . "'Rubber Fever', Commerce and French Colonial Rule in Upper Guin'ee, 1890-1913." *Journal of African History* 45 (2004): 445–65.
- . "'Circle of Iron': African Colonial Employees and the Interpretation of Colonial Rule in French West Africa." *Journal of African History* 44 (2003): 29–50.
- Osseo-Arare, Abena Dove. *Bitter Roots: The Search for Healing Plants in Africa*. Chicago: Chicago University Press, 2014.
- Packard, Randall M. *White Plague, Black Labor: Tuberculosis and the Political Economy of Health and Disease in South Africa*. Berkeley: University of California Press, 1989.
- Panella, C, ed. *Worlds of Debts. Interdisciplinary Perspectives on Gold Mining in West Africa*. Amsterdam: Rozenberg, 2010.
- . "L'Ethique Sociale du Damansen: Education Familiale et Orpaillage Artisanal dans le Basidibe (Wasolon, Mali)," *Cahiers d'Etudes africaines* 186 (2007): 345-370.
- Pélissier, Paul. *Les paysans du Sénégal: les civilisations agraires du Cayor à Casamance*. Saint-Yrieix (Haute-Vienne): Impr. Fabrègue, 1966.
- Perinbam, Marie B. "Social Relations in the Trans-Saharan and Western Sudanese Trade: An Overview," *Comparative Studies in Society and History* 15: 4 (1973): 416-436.

- . “The Political Organization of Traditional Gold Mining: The Western Loby, c. 1850 to c. 1910,” *The Journal of African History* 29, 3 (1988): 437-462
- Person, Yves. “French West Africa and Decolonization.” In *The Transfer of Power in Africa: Decolonization 1940-1960*. Edited by Prosser Gifford and William Roger Louis. New Haven, Yale University Press, 1982.
- . *Samori: Une Révolution Dyula*. Dakar: Mémoires de l'Institut fondamental d'Afrique noire, 1968.
- Peterson, Brian J. *Islamization from Below: The Making of Muslim Communities in Rural French Sudan, 1880-1960*. New Haven: Yale University Press, 2011.
- Peterson, Derek R. *Ethnic Patriotism and the East African Revival: A History of Dissent, c. 1935-1972*. Cambridge: Cambridge University Press, 2012.
- Peterson, Derek R. and Giacomo Macola. *Recasting the Past: History Writing and Political Work in Modern Africa*. Athens, OH: Ohio University Press, 2009.
- Petryna, Adriana *Life Exposed: Biological Citizens After Chernobyl*. Princeton: Princeton University Press, 2013.
- Pietz, William. 1985. “The Problem of the Fetish, I.” *Res* 9:5-17.
- . 1987. “The Problem of the Fetish, II.” *Res*. 13:23-45.
- . 1988. “The Problem of the Fetish, III.” *Res*. 16:105-23.
- Pitcher, Anne and Kelly M. Askew, “African Socialisms and Postsocialisms,” *Africa* 76 (1) (2006).
- Porter, Roy. “The Industrial Revolution and the Rise of the Science of Geology,” 320-43. In *Changing perspectives in the history of science: essays in honour of Joseph Needham*. Edited by Mikula Teich. London: Heinemann, 1973
- Poteete, Amy R. and Jesse C. Ribot. Repertoires of Domination: Decentralization as Process in Botswana and Senegal. *World Development*, 39: 3 (2010), 439-449.
- Powdermaker, Hortense *Copper Town: Changing Africa: The Human Situation on the Rhodesian Copperbelt*. New York, 1962.
- Prakash, Gyan. *Another Reason: Science and the Imagination of Modern India*. Princeton: Princeton University Press, 1999.
- Pratt, Mary Louise. *Imperial Eyes: Travel Writing and Transculturation*. London, 1992

- Quiminal, Catherine. *Décentralisation, démocratie et migrations dans la région de Kayes. Décentralisation et pouvoirs en Afrique*. Montpellier, IRD Editions, 2006.
- . *Gens d'ici, gens d'ailleurs. Migrations Soninke et transformations villageoises*. Paris, Christian Bourgois Editeur, 1991.
- Raj, Kapil. *Relocating Modern Science: Circulation and the Construction of Knowledge in South Asia and Europe, 1650-1900*. Palgrave: MacMillan Publishing, 2007.
- Rajak, Dinah. *In Good Company: An Anatomy of Corporate Social Responsibility*. Stanford: Stanford University Press, 2011.
- Ralph, Michael. *Forensics of Capital*. Chicago: University of Chicago Press, 2015.
- Ranger, Terence. 'The Invention of Tradition in Colonial Africa', in Eric Hobsbawm and Terence Ranger, eds, *The Invention of Tradition* (Cambridge: CUP, 1983).
- Redfield, Peter. *Space in the Tropics: From Convicts to Rockets in French Guiana*. Berkeley: University of California Press, 2000.
- Reno, William. *Warlord Politics and African States*. Boulder: University of Colorado Press, 1999.
- Ribot, Jesse C. "Authority over Forests: Empowerment and Subordination in Senegal's Democratic Decentralization." *Development and Change* 40, no. 1, (2009): 105-129.
- Ribot, Jesse, Arun Agrawal, and A. M. Larson. Recentralizing While Decentralizing: How National Governments Reappropriate Forest Resources. *World Development* 34 (2006): 1864-86.
- Riviere, Claude. *Guinea: The Mobilization of a People*. Translated by Virginia Thompson and Richard Adloff. Ithaca, NY: Cornell University Press, 1977.
- . "L'Or Fabuleux du Bouré," 41-55.
- Richards, Paul *Indigenous Agricultural Revolution: Ecology and Food Production in West Africa*. Boulder: Westview Press, 1985.
- Roberts, Richard. *Litigants and Households: African Disputes and Colonial Courts in the French Soudan, 1895-1912*. Portsmouth, NH: Heinemann, 2005.
- . *Two Worlds of Cotton: Colonialism and the Regional Economy in the French Soudan*. Stanford, CA: Stanford University Press, 1996.
- . *Warriors, Merchants and Slaves: The State and the Economy in the Middle Niger Valley*. Stanford: Stanford University Press, 1987.

- . “The Emergence of a Grain Market in Bamako, 1883-1908.” *Canadian Journal of African Studies* 14, no. 1 (1980): 37-54.
- . “Law, Crime and Punishment in Colonial Africa.” In *The Oxford Handbook of Modern African History*. Edited by John Parker and Richard Reid. Oxford: Oxford University Press, 2013.
- . “French Colonialism, Imported Technology, and the Handicraft Textile Industry in the Western Sudan, 1898-1918.” *The Journal of Economic History*, 47:2 (1987): 461-472.
- Roberts, Richard and Kristin Mann, eds. *Law in Colonial Africa*. Portsmouth NH, Heineman Press, 1991.
- Robinson, David. *Paths of Accommodation: Muslim Societies and French Colonial Authorities in Senegal and Mauritania, 1880–1920*. Athens, OH: Ohio University Press, 2000.
- . *The Holy War of Umar Tal*. Oxford: Oxford University Press, 1985.
- Rocci, Georges, “L’oeuvre des geologues francais en AOF,” *Travaux du Comite Francais d’Histoire de la Geologie (COFRHIGEO)*, 3rd series, tome XXVI , 2 (2012), 25-54.
- Rodet, Marie. *Les migrantes ignorees du Haut-Senegal: 1900-1946*. Paris: Karthala, 2009.
- . “Genre, coutumes, et droit colonial au Soudan francais (1918-1939).” *Cahiers d’Etudes Africaines*, Vol 47, Cahier 187-188 (2007), 583-602.
- Rodney, Walter *How Europe Underdeveloped Africa*. Washington, DC, 1972.
- Roitman, Janet. *Fiscal Disobedience: An Anthropology of Economic Regulation in Central Africa*. Stanford: Stanford University Press, 2005.
- . “The Politics of Informal Markets in Sub-Saharan Africa.” *The Journal of Modern African Studies* 28:4 (Dec. 1990), 671-696.
- Roure, Georges. *La Haute Gambie et le Parc National du Niokolo-Koba*. Dakar: Grande Imprimerie Africaines, 1956.
- Roy, Ananya. *Poverty Capital: Microfinance and the Making of Development*. London, 2010.
- Sael Gagne-Ouellet. “Regulatory Framework Review and Mining Regime Reform in Mali: Degrees of Rupture and Continuity.” *Modes of Governance and Revenue Flows in African Mining*, 47-100. Edited by Bonne Campbell. Palgrave: MacMillan, 2013.
- Sanneh, Lamin. *The Jakhanke Muslim Clerics: A Religious and Historical Study of Islam in Senegambia*. London: International African Institute, 1979.

- Sarro, Ramon. *The Politics of Religious Change on the Upper Guinea Coast: Iconoclasm Done and Undone*. Edinburgh: Edinburgh University Press, 2009.
- Scheele, Judith. *Smugglers and Saints of the Sahara: Regional Connectivity in the Twentieth Century*. Cambridge: Cambridge University Press, 2015.
- Schiebinger, Londa L. *Plants and Empire: Colonia Bioprospecting in the Atlantic World*. Cambridge: Cambridge University Press, 2004.
- Schoenbrun, David. *A Green Place, A Good Place: Agrarian change, gender, and social identity in the Great Lakes region to the 15th century*. Portsmouth, NH : Heinemann, 1998.
- Schumaker, Lyn. *Africanizing Anthropology: Fieldwork, Networks, and the Making of Cultural Knowledge in Central Africa*. Durham, NC: Duke University Press, 2001.
- Schmidt, Elizabeth. *Cold War and Decolonization in Guinea, 1946-1958*. Athens, OH: Ohio University Press, 2007.
- . *Mobilizing the Masses: Gender, Ethnicity, and Class in the Nationalist Movement in Guinea, 1939–1958*. Portsmouth, NH: Heinemann, 2005.
- Schiebinger, Linda. *Plants and Empire: Colonial Bioprospecting in the Atlantic World*. New York: Routledge, 2004.
- Schmidt, Elizabeth *The Global Cold War and Decolonization in Guinea, 1946-1958*. Athens, Ohio University Press, 2007.
- Schoenbrun, David. *A Green Place, A Good Place: Agrarian change, gender, and social identity in the Great Lakes region to the 15th century*. Portsmouth, NH : Heinemann, 1998.
- Schrijver, Nico. *Sovereignty over Natural Resources: Balancing Rights and Duties*. Cambridge: Cambridge University Press, 1997.
- Schumaker, Lyn. *Africanizing Anthropology: Fieldwork, Networks, and the Making of Cultural Knowledge in Central Africa*. Durham, NC: Duke University Press, 2001.
- Scott, James. *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*. New Haven, Yale University Press, 1998.
- Seck, Assane. *Sénégal. Émergence d'une démocratie moderne (1945-2005): Un itinéraire politique*. Paris, Editions Harmattan, 2005.
- Selcer, Perrin *Constructing Spaceship Earth: UN Scientists and the Cold War Origins of Sustainable Development* (Columbia University Press International, Forthcoming)

- Senghor, Léopold Sédar “Negritude and African Socialism” *African Affairs* 15 (1963): 9-22; Senghor, *Negritude*; Mamadou Dia, *L’conomie africaine* (Paris, 1957).
- Searing, James. “*God Alone Is King*”: *Islam and Emancipation in Senegal*. Portsmouth, NH: Heinemann, 2002.
- Servant, Jean, Pierre Legoux, and Andre Marelle, eds. *Les mines et la recherché miniere en Afrique Occidentale Francaise*. Paris: L’Harmattan, 2000.
- Shapin, Steven. “Placing the View from Nowhere: Historical and Sociological Problems in the Location of Science.” *Transactions of the Institute of British Geographers* 23, 1 (1998), 5–12.
- Shaw, Rosalind. *Memories of the Slave Trade: Ritual and the Historical Imagination in Sierra Leone*. Chicago: Chicago University Press, 2002.
- Shipton, Parker “Bitter Money: Cultural Economy and Some African Meanings of Forbidden Commodities.” *American Ethnological Society Monograph Series*, 1. Washington, DC, 1989.
- Smith Rolston, Jessica. “The Politics of the Pits and the Materiality of Mine Labor: Making Natural Resources in the American West.” *American Anthropologist* 115:4 (2013), 582–594.
- Southall, Roger and Henning Melber, eds., *A New Scramble for Africa? Imperialism, Investment, and Development*. Kwa-Zulu Natal, 2009.
- Soares, Benjamin F. *Islam and the Prayer Economy: History and Authority in a Malian Town*. Ann Arbor, MI: University of Michigan Press, 2005.
- Spear, Thomas. “Neo-traditionalism and the Limit of Invention in British Colonial Africa” *Journal of African History* 44, no. 1 (2003): 3-27.
- Smith, Jessica, and Frederico Helfgott. “Flexibility or exploitation? Corporate social responsibility and the perils of universalization.” *Anthropology News* 26:3(2010), 20-3
- Smith, James “Tantalus in the Digital Age: Coltan Ore, Temporal Dispossession, and “Movement” in the Eastern Democratic Republic of the Congo,” *American Ethnologist*, 38:1 (2011).
- Smith James H. and Jeffrey Mantz, “Do cellular phones dream of civil war? The Mystification of production and the consequences of technology fetishism in the eastern Congo,” In *Inclusion and Exclusion in the Global Arena* (New York, 2006).

- Smith, Etienne. "Merging Ethnic Histories in Senegal: Whose Moral Community?" In *Recasting the Past: History Writing and Political Work in Modern Africa*. Edited by Derek R. Peterson and Giacomo Macola. Athens: Ohio University Press, 2009.
- . "La nationalisation par le bas : un nationalisme banal? Le cas de la wolofisation au Sénégal." *Raisons Politiques* 37 (2010), 65-77.
- Smith, Pierre. "Les Diakhanke. Histoire d'une dispersion," *Cahiers du Centre de Recherches Anthropologiques*, no. 4, viii, 3-4 (1965), 23-62.
- Stephanie Samson. "Les 'tresors meconnus' de l'Afrique subsaharienne francaises." In *L'economie faite l'homme: hommage a Alain Plessie*. Geneva: Droz, 2011.
- . Stephanie Samson, "Fernand Blondel: Reforme administrative et reconnaissance geologique en Afrique subsaharienne francaise dans les annees 1930." In Garcon, Anne-Françoise and Bruno Belhoste, dir. *Les ingénieurs des Mines: cultures, pouvoirs, pratiques: Colloque des 7 et 8 octobre 2010*, 387-402. Paris: Institut de la gestion publique et du développement économique, 2012 (Accessed October 6, 2014), Available on <http://books.openedition.org/igpde/926>.
- Storey, William K. "Guns, Race, and Skill in Nineteenth-Century Southern Africa." *Technology and Culture*, Vol. 45 (2004), 687-711.
- Strathern, Marilyn. "Cutting the Network," *The Journal of the Royal Anthropological Institute*, 2:3 (Sep., 1996), 517- 535.
- Stahl, Ann B. "The Archaeology of African History," *International Journal of African Historical Studies*, 42, no. 2 (2009), 241-255.
- Stoller, Paul. *Money Has No Smell: The Africanization of New York City*. Chicago: University of Chicago Press, 2002.
- Suret-Canale, Jean. *French Colonialism in Tropical Africa, 1900-1945*. Translated by Till Gottheiner. New York: Pica Press, 1971.
- . *La a République de Guinée*. Paris: Editions Sociales, 1970.
- Straker, Jay. *Youth, Nationalism, and the Guinean Revolution*. Bloomington, Indiana University Press, 2009.
- Sunseri, Thaddeus. *Vilimani: Labor Migration and Rural Change in Early Colonial Tanzania*. Portsmouth, NH: Hienemann, 2001.
- Tamara Giles-Vernick, Tamara. *Cutting the Vines of the Past: Environmental histories of the Central African Rain Forest*. Charlottesville: University of Virginia Press, 2002.

- Takforian, A. "Conservation et developpment local au Niokolo-Koba," *Politique Africaine* (1994), 52-63.
- Tardiff, Jean. "Kédougou: aspects de l'histoire et de la situation socioéconomique actuelle," *Cahiers du Centre de recherches anthropologiques* 8, 3-4 (1965): 167-230.
- Timera, M. *Sans-papiers africains face aux 'communautés d'origine Les lois de l'inhospitalité*. Paris, La Découverte, 1997.
- Thiaw, Ibrahima. "Atlantic Impacts on Inland Senegambia: French Penetration and African Initiatives in Eighteenth and Nineteenth-Century Gajaaga and Bundu." In *Power and Landscape in Atlantic West Africa: Archaeological Perspectives*, 49-77. Edited by J. Cameron Monroe and Akinwumi Ogundiran. Cambridge: Cambridge University Press, 2012.
- Thomas, Lynn M. "Modernity's Failings, Political Claims, and Intermediate Concepts." *The American Historical Review* 116, no. 3 (June 2011): 727-740.
- Thornton, John "Precolonial African Industry and the Atlantic Trade, 1500-1800." *African Economic History* 19 (1990): 1-54.
- Tilley, Helen. *Africa as a Living Laboratory: Empire, Development, and the Problem of Scientific Knowledge, 1870-1950*. Chicago: University of Chicago Press, 2011.
- Taussig, Michael. "Culture of Terror--Space of Death. Roger Casement's Putumayo Report and the Explanation of Torture." *Comparative Studies in Society and History* (1984): 467-97.
- _____. *The Devil and Commodity Fetishism in South America*. Chapel Hill: University of North Carolina Press, 1980.
- Toussignant, Neomi. "Broken Tempos: Of Means and Memory in a Senegalese University Laboratory," *Social Studies of Science* (2013)
- Tall, Serigne Mansour. "Les investissements immobiliers a Dakar des emigrants senegalaise." *Revue Europeene des Migrations Internationales*, 10:3 (1994), 137-151.
- Thompson, E.P. *Whigs and Hunters: The Origins of the Black Act*. New York, 1975.
- Toure, Oussouby. "Le refus du travail force au Senegal oriental." *Cahiers d'Etudes africaines*, 93, XXIV-I (1984): 25-38.
- Toure, Sekou Ahmed, *L'Afrique en Marche*, TOME X, 4th edition. Conakry, 1967.
- Tsing, Anna Lowenhaupt. *Friction: An Ethnography of Global Connection*. Princeton: Princeton University, 2005.

- Tucker, Robert C. ed. "Capital, Volume One, Chapter XXVI. The Secret of Primitive Accumulation," in *The Marx-Engels Reader*, 431-38. 2nd Ed. London 1978.
- Twagira, Laura Ann. "Robot Farmers" and Cosmopolitan Workers: Technological Masculinity and Agricultural Development in the French Soudan (Mali), 1945–68', *Gender & History*, 26:3 (2014), 459–477.
- van Beusekom, Monica. *Negotiating Development: African Farmers and Colonial Experts at the Office du Niger, 1920-1960*. Portsmouth, NH: Heinemann, 2002.
- Van Onselen, Charles. *Chibaro: African mine labour in Southern Rhodesia, 1900-1933*. London: Pluto Press, 1976.
- Von Schnitzler, Anita. "Citizenship Prepaid: Water, Calculability, and Techno-Politics in South Africa." *Journal of Southern African Studies* 34, no. 4 (2008): 899-917.
- Walsh, Andrew. "'Hot Money' And Daring Consumption in a Northern Malagasy Mining Town." *American Ethnologist* 302, no. 2 (2003): 290-305.
- Walsh, Andrew "After the Rush: Living with Uncertainty in a Malagasy Town," *Africa* (2012) 82:2, 235-51.
- Ware III, Rudolph *The Walking Qur'an: Islamic Education, Embodied Knowledge, and History in West Africa*. Chapel Hill: University of North Carolina Press, 2014.
- Warner Brothers Pictures. *Blood Diamond*. Film. Directed by Edward Zwick, 143 minutes, 2007.
- Watts, Michael. "Resource Curse? Governmentality, Oil and Power in the Niger Delta, Nigeria," *Geopolitics* 9, 1 (2004): 50–80.
- Welker, Marina. *Enacting the Corporation: An American Mining Firm in Post-Authoritarian Indonesia*. Berkeley: University of California Press, 2014.
- Werthmann, Katja. "Working in a Boom-Town: Female Perspectives on Gold-Mining in Burkina Faso." *Resources Policy* 34 (2009): 18-23.
- _____. "Dans un Monde Masculin: Le Travail des Femmes dans un Camp de Chercheurs d'Or au Burkina Faso. In *Les Nouveaux Urbains dans l'Espace Sahara-Sahel: un Cosmopolitisme par le Bas*, edited by E. Boesen & L. Marfaing, 295-322. Paris, Karthala, 2008.
- _____. "Cowries, Gold and 'Bitter Money': Gold-Mining and Notions of Ill-Gotten Wealth in Burkina Faso," *Paideuma* 49 (2003): 105-124.
- Westad, Odd Orne. *The Global Cold War: third world interventions and the making of our times*. Cambridge: Cambridge University Press. 2005.

- Westermann, Andrea. "Geology and World Politics: Mineral Resource Appraisals as Tools of Geopolitical Calculation, 1919-1939." *Historical Social Research* 40 (2015) 2, 151-173.
- White, Louise. 2009. "'Heading for the Gun': Skills and Sophistication in an African Guerilla War." *Comparative Studies in Society and History* 51 (2): 236-259.
- Wilder, Gary. *The French Imperial Nation-State: Negritude and Colonial Humanism between the Two World Wars*. Chicago: University of Chicago Press, 2005.
- Wilks, Ivor. "Wangara, Akan and Portuguese in the Fifteenth and Sixteenth Centuries. I. The Matter of Bitu." *Journal of African History* 23: 3 (1982): 333-349.
- . *Forests of Gold: Essays on the Akan and the Kingdom of Asante*. Athens: Ohio University Press, 1993.
- Willems, R. "Les 'fous de la mer': Les migrants clandestins du Sénégal aux îles Canaries en 2006." In *Le Sénégal: Mobilités, identités et sociétés*, edited by M.-C. Diop, 277-304. Paris: Editions Karthala, 2001.
- Williams, Martin. "The Gold Standard of Governance: Mining, Decentralization, and State Power in Africa." *Politique Africaine* 17 (2010), 127-148.
- Wolpe, Harold. *Race, Class, and The Apartheid State*. London, 1988.
- Wright, J. B., D. A. Hastings, W. B. Jones and H. R. Williams. *Geology and Mineral Resources of West Africa*. London, 1985.