Unearthing Rule

Mining, power and the political ecology of extraction in colonial Zambia

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Abstract

This thesis examines the co-production of social inequality and an extractive space on the Zambian Copperbelt in the early twentieth-century. The rapidity and scale of the development of world-leading copper mines on the Copperbelt was described at the time as “one of the greatest mineral developments ever experienced” and took many observers by surprise. This thesis examines the origins of this boom. It argues that the success of mining on the Copperbelt is not only a result of the decisions and actions of miners and colonial officials in the 1930s to 1960s, but largely a result of those taken in the decades prior to this ‘heyday’. The keys to understanding this rapid transformation lie in the political and economic interventions and innovations which colonialism brought to (what was then called) Northern Rhodesia in the decades preceding the advent of large-scale mining. In this earlier period, dozens of mining and other commercial enterprises failed, but in their ruins the seeds of commercial success were sown. In this period too, many of the structures which generated and perpetuated the inequality and poverty which characterise contemporary Zambia were created. The success of extractive capitalism in Northern Rhodesia rested on changing regimes of access to and control over resources. Interventions in socio-ecological relations were a focus of British colonial rule in Northern Rhodesia and created the political and economic 'infrastructure' which enabled mining to take off rapidly when rich ore was subsequently discovered. This thesis explores how the Northern Rhodesian Copperbelt was produced as a space for natural resource extraction in the colonial period through attention to the military, political and economic practices which produced regimes of access to, and control over, resources. These interventions were key to instantiating new capitalist relations and asserting British rule in colonial Zambia. To examine the conditions in which the Copperbelt boom was produced, this thesis draws on existing work on this transition. In drawing on this work, this research offers a political ecological critique of the development of Zambian Copperbelt. The thesis highlights the complexities of the struggle to produce both extractive capitalism and stable colonial rule and how the production of an extractive space on the Copperbelt had long-term consequences for the territory's development.
No portion of the work referred to in the thesis has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning.
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Acknowledgements

Only my name stands on the spine of this thesis. This is misleading. Research of this length and breadth can only ever be a collective effort. Not all participants were aware of their contribution. Nor can this short passage ever bear true witness to the debts I have accrued in the past four years. I make no apologies for its length, though I do apologise for any omissions. It is with great pleasure – and great humility – that I acknowledge at least some of the support I have received in preparing this thesis.

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Reflecting on the debts I have accrued in the last four years is deeply humbling. Without these collective efforts, this thesis would not have been possible. What strengths there are in the coming analysis are the result of the support I have received in the past four years. The faults, errors and omissions that remain, are entirely my own.
Abbreviations

BSAC  British South Africa Company
Cu   Copper
CV   Copper Venture Syndicate
GDP  Gross Domestic Product
LSE  London stock exchange
LME  London Metals Exchange
NLA  Native Labour Association
NGO  Non-Governmental Organisation
RCBC Rhodesian Congo Border Concession
RGS  Royal Geographical Society
RNLB Rhodesian Native Labour Bureau
ZCCM Zambia Consolidated Copper Mines
ZCCM-IH ZCCM Investment Holdings

A Note on Referencing

This thesis uses a modified Harvard system for referencing. References to literature are in the main body of the text in parentheses while footnotes are used for archival references. The aim here is to balance the ease of reading with full and systematic referencing.
Figure 1: Map of Zambia
Chapter One: Introduction

Introduction – ‘This open sore of the world’

In the early 1930s the Northern Rhodesian Copperbelt exploded onto the world investment stage in a shower of publicity. The mining press lauded a rich new mining field in the African interior. The coppers were abundant, investment flowed in, cutting-edge technologies were deployed and a modern mining region blossomed. Between 1930 and 1964 Northern Rhodesia was transformed from a colonial backwater into one of the world’s largest exporters of copper (Parpart, 1983). Decades after the European 'scramble for Africa', what was once the graveyard of mining enterprise became the birthplace of a modern mining field. The rapidity of this transition caught many observers by surprise. Mining industrialists trumpeted the rise of the Northern Rhodesian copper industry as "the most remarkable development which has taken place in the recent history of the British empire" (Sir Dougal Malcolm cited in Coleman, 1971 p.34). The Northern Rhodesian government described it as “one of the greatest mineral developments ever experienced”.¹ The new mines were immensely profitable. Within a few years of their opening, the new mines were so profitable that they were annually paying 100% dividends. Wealth was produced on a massive scale. Hundreds of millions of pounds were made as metaphorical mountains of ore were exported.

The Copperbelt boomed. The landscape was transformed as rivers were diverted, swamps drained and large urban populations formed. The new modern garden cities that sprung up across the Copperbelt came complete with the modern amenities one would expect of the developed world: cinemas, tennis courts and golf courses were built in the heart of the African interior. As one journalist noted in the early days of this transformation:

“In no other area of the world has there been, during the present century, such a transformation of social values, such a development of commerce and industry and transportation, or such an intensive application of scientific knowledge to so large a region previously so primitive and so little known” (Letcher, 1932 p.15)

¹ NAZ RC 1375 Mining and geology, General review mines department staff and work 1932 p.2
Chapter One

The Copperbelt was a 'wonderland', a marvel of modernity and progress in the heart of the 'dark continent' (Ferguson, 1999, Phimister, 2008). Researchers came from far and wide to study the novelty of 'modern' urban populations of Africans in the heart of rural 'traditional' Africa (Schumaker, 2001). The engineers and financiers who enabled this transformation were lauded as heroes in the industry, knighted, awarded prestigious industry medals and their names written into the geography of the region (Wilson, 1992). The copper industry dominated the country.

As wealth poured from the Copperbelt it left little mark on the rest of the country, only a residue of inequality. The modernity, progress, wealth and transformation of the Copperbelt was surrounded by deprivation. Aside from those 'fortunate' enough to earn the (relatively) high wages of working in the mines, most Africans were bypassed by this wealth. For those living in the rest of Northern Rhodesia, conditions did not improve. The inequality between the wealth of Europeans living on the Copperbelt and the surrounding Africans was increasingly stark. Poverty was widespread. Forced to live on cramped reserves, famine and disease were common among ‘natives’. Infant mortality remained around 30%. The conditions of life for most Zambians had deteriorated in the first decades since British rule was declared in the 1890s. They improved little now. Indeed, they never did dramatically improve. Even today, despite 80 years of continued wealth creation on the Copperbelt that shows little sign of slowing, Zambia remains a nation racked by poverty. Average life expectancy is 45 years (UNDP, 2009). 15% of infants die before they see their fifth birthday (UNICEF, 2010). GDP remains around $1,358 per capita (UNDP, 2009). It lolls at the bottom of the UNDP human development index, 164th out of 182, putting it in the company of countries which have seen violent conflict in recent decades like DRC and Namibia (UNDP, 2009). Despite modest improvements in recent years, two thirds of Zambians live in absolute poverty. Zambia remains what explorer David Livingstone described on his deathbed as an 'open sore of the world'.

Unhealed in the 140 years since he wrote these words, despite 80 years of wealth creation from the rich ores of the Copperbelt, how did this come to pass?

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2 From the inscription on David Livingstone's tomb in Westminster Abbey which repeats the last lines in his journal before he died "All I can add in my solitude is/ May heaven's rich blessing come down/ On everyone, American, English or Turk/ Who will help to heal this open sore of the world."
This thesis offers a partial answer. By examining the conditions in which the Copperbelt boom was produced – how the area came to be an extractive space that enabled the flow of minerals and wealth out of colonial Zambia – the historical roots of contemporary inequality are explored. This thesis examines the production of an extractive space on the Northern Rhodesian Copperbelt in the early twentieth-century. It argues that the success of mining on the Copperbelt is not only a result of the decisions and actions of miners and colonial officials in the 1930s to 1960s, but largely a result of those taken in the decades prior to this ‘heyday’. The keys to understanding this rapid transformation lie in the political and economic interventions and innovations which colonialism brought to Northern Rhodesia in the decades preceding the advent of large-scale mining. In this earlier period, dozens of mining and other commercial enterprises failed, but in their ruins the seeds of commercial success were sown. In this period too, many of the structures which generated and perpetuated the inequality and poverty which characterise contemporary Zambia were created. The success of extractive capitalism in Northern Rhodesia rested on changing regimes of access to and control over resources. These interventions in socio-ecological relations were a focus of British colonial rule in Northern Rhodesia and created the political and economic 'infrastructure' which enabled mining to take off rapidly when rich ore was subsequently discovered. This thesis will explore how the Northern Rhodesian Copperbelt was produced as a space for natural resource extraction in the colonial period through attention to the military, political and economic practices which produced regimes of access to, and control over, resources. These regimes were key in instantiating new capitalist relations and asserting British rule in colonial Zambia. To examine the conditions in which the Copperbelt boom was produced, this thesis draws on existing work on this transition in the disciplines of history, business and economic history and Marxist history. In drawing on these, this research offers a political ecological critique of the development of Zambian Copperbelt.

The Literature

Understanding the Copperbelt
The story of the Zambian Copperbelt has been recounted many times. The vast majority of studies focus on the changes that occurred after the Copperbelt 'took off' rather than
what preceded it. Much of the literature on mining in colonial Zambia from 1890-1930 comes from historical research. A subset of this charts the technical and economic aspects of the development of the Northern Rhodesian Copperbelt in detail (Butler, 2007, Gann, 1958, Roan Consolidated Mines, 1978). For instance, Coleman (1971) offers a broad survey of the economic and technical factors involved in the development of the Copperbelt, though with greater depth on the engineering challenges of the decade which followed mineral discovery in 1925. Likewise, Bradley's (1952) Copper Venture charts the earliest days of the Copperbelt focussing on the Mufulira and Roan Antelope mines (whose owners commissioned the book). Drysdall (1972) provides a similar survey with a focus on the changing prospecting techniques deployed. The prospecting process of the Northern Rhodesian copper ores was remarkable and is detailed in a number of insiders’ accounts of the process by Brooks and Bancroft. Brooks details, in a series of articles (1944a, 1944b, 1944c), the first large-scale prospecting efforts on the Copperbelt of which he was the local manager, while Bancroft focuses on the slightly later Anglo-American efforts that he coordinated (Bancroft, 1961). All of these accounts detail the individuals, and the individual decisions, which enabled commercial success in the face of the multiple technical and economic challenges of establishing new mining enterprises in the remote African interior. Importantly, they do not present the rise of the Copperbelt as inevitable, instead highlighting how the creation of a successful extractive space rested on a great deal of effort to produce the ‘right’ conditions. Though there is a strand of this work which directly engages with the relationship between the mining industry, the Northern Rhodesian government and the London Colonial Office (Butler, 2007, Slinn, 1971, 1972, 1979), the majority of these technical accounts are often blind to the political context in which mining operated and the substantial political work which was required to provide mining enterprise with many of its inputs. Many of the earlier accounts in this

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3 The urbanisation of the Copperbelt which followed the growth of mining provided a fertile ground for the growth of anthropology as a discipline, spawning a dedicated research institute and an impressive literature (Epstein, 1958, Schumaker, 2001). This literature, and its central debate around modernity and the wider impact of transformations to African social life the growth of mining on the Copperbelt engendered, is reviewed comprehensively elsewhere by Ferguson (1999), Macmillan (1993, 1996) and (implicitly) Schumaker (2001). The relevance of this literature to the current research is often indirect as it focuses on the period following the arrival of large-scale mining, while the current research is largely concerned with the conditions which produced this boom.

4 There is also a biographic literature on certain individuals involved in the development of the Copperbelt. These often, understandably, paint the development of the Copperbelt with a very broad brush. Some of these, however, were written by mining historians with an eye for how these individuals fit into the wider mining industry such as Phillip's work on Chester Beatty (2009) and Wilson's book on the Institute of Mining and Metallurgy which explores its influence through the work of its alumni (1992).
literature regard colonialism as a 'success', implicitly replicating the views of many contemporary accounts of the colonial period. These studies often take the perspective of Europeans in Africa, privileging their voice and actions over those of the Africans they encountered or with whom they engaged. African participation in these accounts is largely confined to being the assistants, porters and servants of 'great white men'.

Further, none of these accounts engage the earliest mineral production in the country in the period 1899-1907 (at the Sasare mine near Petauke and on the 'Big Concession' near Mumbwa – see Figure 1 above). There is an implicit assumption here which sees failed mining enterprises as unworthy of attention and only those which eventually became commercial successes as worthy of full exploration. This thesis takes a different approach. It argues that attention to these early failures exposes both the obstacles to be overcome for mining to be successful in the African interior, but also the important groundwork which these 'failures' laid for future success.

This literature on the Zambian Copperbelt is part of a broader body of work in business and economic history dedicated to exploring mining history, specifically the transformations which racked the metal mining industry in the 50 years following 1875. This was a period of unprecedented change for the British and global mining industries. As other sectors of the British economy stagnated and European markets developed their own financing mechanisms, capital from the City of London – "the undisputed capital of international finance" in this period – flowed into international mining (Cain and Hopkins, 1980, Chapman, 1988 p. 27, Michie, 1981). A considerable literature has built up attempting to understand the ways in which the City of London became a hub for international mining finance in this period and the consequences of this for the global mining industry (Burt, 1972, Cain and Hopkins, 1987, Chapman, 1985a, 1985b, Harvey and Press, 1990, Michie, 1981, 1998, Turrell and Van Helten, 1987, Van Helten, 1990). As Turrell and Van Helten note, "by the early 1900s British-based private firms controlled the great bulk of mining enterprise throughout the world" (Turrell and Van Helten, 1987 p.271). Derived from a broader economic history approach, the focus of much of this research is the business formations, decisions and tactics which made certain

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5 Copper Venture is a good example here. Sir Kenneth Bradley argues that "no one will ever fully know the toils and tribulations it involved, both for the managers and for the officials of government" (1952 p.20). Sir Bradley remains conspicuously silent on the trials and tribulations for Africans.
businesses or sectors successful. While a few of these studies take a geographically or temporally broader approach (Barger and Schurr, 1944, Dumett, 2009a, 2009b, Lynch, 2002, Schmitz, 1986), in the main they focus on specific mining regions and countries such as USA (Burt, 1997, Peterson, 1977), Canada (Mouat, 1992), Australia (Katzenellenbogen, 1990, Lougheed, 1990, Lougheed, 1983, McCarty, 1961-2), Nigeria (Freund, 1981, Phimister, 2000, Silver, 1983) and South Africa (Richardson and Vanhelten, 1984, Turrell, 1982, Van Helten, 1982); or individual firms such as Rio Tinto (Harvey and Taylor, 1987, Rowe, 1982) and the Exploration Company (Turrell and Van Helten, 1986); or specific individuals such as Cecil Rhodes (Chapman, 1985b, Newbury, 2009, Turrell, 1982), Herbert Hoover (Van Helten, 1986) and Chester Beatty (Phillips, 2009, Wilson, 1985). These studies focus on the range of technical and economic challenges that needed to be overcome for mining to be successful. They call attention to a variety of innovations, from institutional financial changes which managed risk more effectively (Burt, 1972, Chapman, 1985a, Harvey and Press, 1990, Turrell and Van Helten, 1986, Turrell and Van Helten, 1987) to new technologies of mining which wrought huge financial rewards and allowed greater amounts of minerals to be recouped from ever-lower grades of ore (Barger and Schurr, 1944, Dumett, 2009a, Menghetti, 2005, Mouat, 1992). Dumett (2009a) highlights how the rapid rate of technological advancement was central to opening new areas and ore types, producing the rapid expansion and booms the mining industry witnessed in this period. Collectively, these studies document the transition of the mining industry between the late nineteenth- and early twentieth-century from ramshackle, small-scale, speculative companies to an increasingly efficient, highly-organised, professionalised, large-scale and highly capitalised industry producing ever-larger quantities of primary commodities for world markets (Dumett, 2009a, Harvey and Press, 1986, Wilson, 1992).

Zambian Historiography

The wider history of Zambia has also been recounted many times, with a flurry of publications around the time of Zambia's independence. Gann and Gelfand offer broad surveys which replicate the triumphalist coloniser's view of much mining and early economic history of the Copperbelt (Gann, 1958, 1969, Gelfand, 1961).\(^6\) Later research

\(^6\) Lewis Gann's book *A history of Northern Rhodesia: early days to 1953* is without doubt the most detailed and comprehensive account of the colonial Zambia but is undermined by the implicit racism of the author
Introduction

Unearthing Rule

has often been much more critical of these "great man views of history" and the colonial project in Zambia (Hall, 1965, Isaacman and Isaacman, 1977 p.39-40, Rotberg, 1965b). This growing body of 'critical histories' seeks to explore African colonial history in ways which give voice to the struggles and actions of Africans and their leaders. This is a more recent strand of historical literature which rejects how traditional histories frequently revert to triumphalism, gloss over the problematic aspects of British colonial rule, and reduce both African people and nature to the backdrop of European feats. Instead, colonialism and colonial practice are given a far less sympathetic treatment and their brutality and injustice openly acknowledged (and indeed focussed upon). Informed by the rise of African nationalism, many of these accounts seek to establish the conditions in which African nationalism arose and came to fruition. This is a very wide literature but a number of these studies explicitly survey colonial Zambia (Fetter, 1983, Fields, 1985, Hall, 1965, 1976, Meebelo, 1971, Rotberg, 1965b). Others document specific aspects of Zambia's colonial history such as certain groups and tribes like the Lunda (Gordon, 2001), the Lozi (Prins, 1980), the Lamba (Siegel, 1989) or the Mine Workers Union (Larmer, 2007), and missionaries and church groups (Hinfelaar, 2008, Rotberg, 1965a) or individuals such as Joseph Thomson (Rotberg, 1971) and John ‘Chirapula’ Stephenson (Wright, 1972). While they can provide much useful detail on the nature of colonial rule, in many of these histories there is the discipline of history's emphasis on the particularities of individual cases, averse to comparative or multi-scalar analysis and the use of macro-theorisations (Fetter, 1999). Rotberg's Rise of Nationalism is an exemplar of this approach – it sets itself the explicit task of documenting the development of independence movements in colonial Zambia and Malawi, but avoids much in the way of comparative analysis beyond descriptive chapter headings (Ranger, 1967, Rotberg, 1965b). More recent studies have attempted to use oral testimony to build an account of life in colonial Zambia which is less reliant on the colonial voices of the archive such as Chipungu's edited collection (1992c) and the work by Prins on Lewanika and the Lozi's interaction with European and colonial actors (1980).

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(Gann, 1969). Gann was later shunned by many of his colleagues for his notorious defence of Southern Rhodesian and South African apartheid.

7 The label 'European' is and was loosely applied, usually including all Caucasians from Europe, South Africa, Australia and North America. It is used in this generic sense throughout this thesis when discussing the white population in Zambia.
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While few critical histories of colonial practice in Zambia offer comparative analysis, there is a wider literature on colonialism in Africa that engages with questions and comparisons directly relevant to this thesis. Since the arrival of independent African nations, much historical research has gone into understanding how colonialism functioned and secured dominance for as long as it did. A central conundrum tackled in this body of work is that of the 'thin white line': provincial colonial presence was remarkably sparse (around 250 at its peak in pre-independence Zambia) and yet managed to exhibit the appearance of control (Killingray, 1986, Kirk-Greene, 1980). The broad conclusion put forth is that it was just that, an appearance; colonial rule was the result of an interaction between a number of political systems and logics, not the unilateral imposition of one. Rather than the erection of a political system on a largely blank canvas, or the steamrolling of one form of politics by another, there was a negotiation which retained important spheres of autonomy for African political elites and imbued British colonial rule with traits that have deep historical roots in Africa (Bayart, 1993, Isaacman and Isaacman, 1977, Ranger, 1969). Questions about the nature of colonial rule remain an important strand of African historiography to this day and are often explored in terms of understanding the colonial roots of the contemporary failings of African states; a question shared with this research (Clapham, 2001, Herbst, 2000, Mamdani, 1996, 2005, Young, 1994). Attempting to reclaim the role of African agency in the making of Zambian history, a number of studies highlighted how colonialism in Zambia was not a one-way street (Berry, 1992, Chanock, 1985, Fields, 1982, 1985, Gordon, 2001, Luchembe, 1992, Musambachime, 1992, Prins, 1980, Ranger, 1980, Siegel, 1988). In these studies the nuances of local power, the complex practicalities of the colonial encounter – such as the co-opting of elements of colonial rule by African leaders for their own ends and how indirect rule worked in practice – and the uneven, tenuous nature of colonial impositions are central. Unfortunately, the literature on Northern Rhodesia that takes this approach largely skirts the questions of natural resource extraction and the Copperbelt which preoccupy the current research and, like traditional historical accounts, largely avoids macro-theoretical explanations. Informed by the historian's sensitivity to portraying history as highly contingent and committed to avoiding "the illusions of retrospective determinism", these analyses eschew theories tainted by the faintest whiff of determinist 'trajectories' (Henri Bergson, cited in Ash, 1993, Benjamin, 1992). While this sensitivity
to contingency is admirable, it frequently blinds these accounts to the possible presence of macro-processes at work.

**Marxism and the underdevelopment of Africa**

One rich set of literature which engages questions of rule and natural resource extraction both empirically and theoretically is Marxist histories of colonialism. In the 1970s and 1980s, a vibrant body of literature emerged drawing on Marxist theories to critique traditional and atheoretical historical accounts of colonialism in Africa (Berman and Lonsdale, 1992a, 1992b, Birmingham and Martin, 1983, Freund, 1998). These accounts sought to understand the (under)development of colonialism through questions of capital, modes of production and labour practices. Colonial rulers’ callous brutality in imposing dominance and their ruthless focus on wealth extraction to establish unequal core-periphery relations using violent dispossession, forced taxation and coerced labour are highlighted (Martin, 1983, Muntemba, 1977, Vail, 1977). A particularly relevant area of this literature is a range of Marxist accounts of mining in colonial Africa (Crisp, 1984, Freund, 1981, Silver, 1981, 1983, Van Onselen, 1976). The Copperbelt has naturally also received a fair share of these studies (Berger, 1974, Henderson, 1975, Macpherson, 1981, Parpart, 1983, Perrings, 1977, 1979). The detail and questions of these accounts are particularly relevant to this thesis and are discussed in the coming chapters. At this stage it is worth highlighting the empirical and theoretical gaps which these studies share. Parpart and Berger begin their accounts with the rise of the Copperbelt in the late 1920s and thus marginalise the decades of colonial effort which went into producing an effective extractive space in colonial Zambia (Berger, 1974, Parpart, 1983). Macpherson's study focuses on British South Africa Company (BSAC) rule, and therefore covers the period of 1890-1924 in depth, but treats mineral extraction as a passing concern to a study aimed largely at documenting the brutality and injustice of Charter Rule (Macpherson, 1981). Perrings covers the growth of mining before the 1920s, but the Congolese side of the Copperbelt forms the basis of his study with the Northern Rhodesian Copperbelt used mainly as context (Perrings, 1979). Henderson's thesis too covers the period under review here but only briefly, so as to concentrate on the politics of mining from the 1930s onwards (Henderson, 1975).
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There are also theoretical issues which render these studies unsatisfactory for the current research. The spectre of economic determinism often looms, with the close connection between the interests of commercial agents and those of their counterparts in colonial administration often emphasised to the point that they become indistinguishable. While they were frequently closely aligned, there were important differences which shaped both the colonial state and the mining industry in Northern Rhodesia, as Chapter Seven shows. Further, in the rush to prove the totality of European dominance, important nuances around the fallibility and uneven application of colonial rule and its multiple agendas are omitted. These analyses, preoccupied with questions of labour and capital, often fail to address how colonial authorities' intervention into African societies was not limited to questions of labour and capital or did not always rely on coercion; a point taken up in Chapter Six. Collaboration, the desire of some Africans to join in the cash economy, and the politics of knowledge production are all marginal to these studies. The part of Africans frequently becomes that of subjugated peoples, an oppressed proletariat capable of only token and partial resistance against the demands of monolithic global capitalism in the form of British imperial rule. This is clearly unsatisfactory. The multiple limits of colonial power are important factors in understanding both the development of colonial rule and the mining industry as shall be shown in the coming chapters. Collectively, these historical studies of colonialism, mining and Northern Rhodesia bring a great deal of empirical data to this study. They elaborate the range of processes and dynamics at work in the colonial encounter and highlight its diverse permutations. The Marxist and 'thin white line' literatures bring important theoretical questions to the current research too, problematising the aims, techniques and outcomes of colonial rule. However, for this research, a different approach is taken.

Political Ecology of natural resources

This thesis takes its cues from political ecology. This rich body of research is centrally concerned with the politics of the environment and resources. To describe political ecology as a single entity is misleading. It is a broad church, better described as an analytical toolkit, research agenda or suite of questions for interrogating the politics of

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8 Henderson is a notable exception to this charge.
9 Or indeed, an interdisciplinary "forum for analysis and discussion" (Stonich and Bailey, 2000 p.25).
environmental transition (Bryant, 1992, Bryant and Bailey, 1997, Robbins, 2004). Political ecology has diverse roots and can trace its intellectual heritage back decades to peasant studies, cultural ecology and Marxist concerns with marginalisation (Robbins, 2004). However, this thesis is centrally concerned with a body of work within contemporary political ecology that explores the changing socio-environmental relations characteristic of neoliberal capitalism, especially in the so-called ‘developing world’.

Working from an understanding that "politics and environment are everywhere thoroughly interconnected", these analyses have cast new light into the workings of liberal capitalism through a series of rich analyses of resource politics (often) in the rural global South (Bryant, 1992, Bryant, 1998 p.82, Bryant and Bailey, 1997, Peet and Watts, 2004, Peet and Watts, 1996, Peluso and Watts, 2001a, Robbins, 2004). This agenda and toolkit has developed since the 1980s through an engagement with both the political economy of the environment and the politics of meaning and knowledge construction (Heynen et al., 2007b, Peet and Watts, 2004, Peet and Watts, 1996, Peluso and Watts, 2001a, Robbins, 2004). At root, this is often a concern with the ways in which environmental politics and transformation are constituted through changing forms of access to and control over resources (Watts and Peet, 2004). Two influential thinkers in the field of political ecology research describe the strengths and concerns of the field as providing:

"Tools for thinking about the conflicts and struggles engendered by forms of access to and control over resources. Its attentiveness to the power relations inherent in defining, controlling, and managing nature suggests an alternative way of viewing the link between environment and political action. The environment is an arena of contested entitlements, a theatre in which conflicts or claims over property, assets, labor, and the politics of recognition play themselves out" (Peluso and Watts, 2001b p.24-5)

Through detailed case studies, political ecologists advance a view of liberal capitalism where, far from being monolithic, it is seen as articulated through complex alignments of economic, political and discursive practices, all of which have profound environmental consequences (Heynen et al., 2007b, McCarthy and Prudham, 2004, Robbins, 2004, 10

10 Canonical works span the divide between the political economy of the environment and cultural ecology (Blaikie et al., 1987, Watts, 1983).
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Watts and Peet, 2004). The development of this recent body of work around the production of extractive economies and 'complex forms of liberal capitalist transition' invites the question: how might earlier liberal capitalist transitions – the original scramble for Africa and the development of the Northern Rhodesian Copperbelt – be understood using the toolkit of political ecology (Watts and Peet, 2004)? A question that this research seeks to address through exploring the rise of an extractive economy on the Zambian Copperbelt in the early colonial period.

Political ecology analyses problematise ‘natural resources’. Natural resources are economic appraisals of what we conventionally call ‘nature’. In the case of natural resources, the guiding logic is a functional one: natural resources are those elements of nature that are understood to be useful and for which technologies exist to enable their capture or extraction; in the well known words of Erich Zimmermann,

"Resources are not, they become; they are not static but expand and contract in response to human wants and human actions." (Zimmermann, 1951 p.15 emphasis in the original)

Natural resources then, represent “social appraisals” of nature and the natural world (Roberts and Emel, 1992 p.249). What constitutes a natural resource is "defined by human ability and need" and changes over time and space (Bridge, forthcoming [2011], Rees, 1989 p.365). If natural resources are "simultaneously economic, cultural, and physical in character", then they "need to be understood not as pre-existing substances or things, but in terms of functions and relationships" (Howitt, 2001 p.3). As natural resources are economic valuations of the environment, they are a key site in which dynamics of nature and dynamics of capitalism interact – a site where elements of nature come to be enmeshed in the practices and relationships of the capitalist economy (Bridge, 2001). The geographies of natural resource extraction are produced through changing needs and technological capacity within capitalism's "necessity of accumulation", where nature is transformed into commodities (Roberts and Emel, 1992 p.262).

In the process of commodification nature is fragmented, separated discursively and physically into constituent parts that can be easily exchanged on markets (Castree, 2003). This is not an unproblematic process as "biophysical nature comprises a set of obstacles, opportunities and surprises to capital" (Prudham, 2005 p.18). These 'problems' of nature for capitalism are unpacked by Scott Prudham as ‘nature as land’ (the dispersed nature of
biological inputs generates diseconomies and obstructs capital's tendency towards concentration e.g. wheat needs to be grown over wide areas), ‘nature as time’ (the rate at which biological inputs to production are produced slower is than that at which they are extracted e.g. trees grow at a slower rate than they can be logged) and ‘nature as form’ (the materiality – and heterogeneity – of the nature in question obstructs the homogenising tendencies of capitalism and the process of standardised commodity production e.g. varying grades and composition of copper ores must be reconciled and refined to be transformed into copper wires) (Moore, 2003, Prudham, 2005). The reliance of capitalism on natural inputs – in Prudham’s no-nonsense words, "capitalism needs nature" – combined with its imperative for expansion, produces changing geographies of natural resource extraction (Prudham, 2005 p.8).

Towards a political ecology of mining

What follows is an attempt to marshal disparate elements of this diverse literature into a workable political ecology of natural resource extraction in Zambia. A key issue here is that, discounting a wealth of research on oil, mining is a rather under-represented strand of political ecology, with the vast majority of studies addressing agriculture and forestry. The spatial fixity and subterranean nature of mineral resources arguably lends the political ecology of mining a unique character. As such, these particularities have to be attended to in any theoretical framing of research. Outside of the technical and business history literature this is rarely acknowledged explicitly. Economic geographers do offer some pointers here though. Gavin Bridge argues that we should understand mining as a distinct form of natural resource extraction and

"Mineral resources as a particular, even paradoxical, sort of nature: largely invisible, highly localised, exhaustible, fictitious commodities – in short, classic 'gifts of nature' that are, at the same time, also thoroughly social."

(Bridge, forthcoming [2011])

While the extraction of oil is relevant to the current study, in many ways it is a rather different beast to the mineral extraction discussed in the coming chapters. Its increasing economic value, high energetic-density, fluid materiality, concentrated distribution and strategic political value have generated specific materio-economic flows and political struggles and forms surrounding its extraction (Mitchell, 2009). However, the spatial fixity of oil and its centrality to state projects does offer some transferable insights. By and large, however, the political ecology of oil extraction differs markedly in process and form to that of most other forms of extractive mining.
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Bridge draws attention to how mineral extraction's specific physical geography and materiality produces a distinct social and economic geography. Ben Fine too produced a lone, but standout, article which explores the particular economic geography of mining with a view to paving the way for a "specific theory of mining" (Fine, 1994 p.279). Fine's work draws attention to the areas in which mining constitutes a unique economic activity, highlighting how it is "spatially fixed by nature" (unlike the vast majority of economic activity), frequently demonstrates tendencies to vertical and horizontal integration leading to monopolies and cartels, must compete with other land uses, and often relies on increasing state intervention as specific mining projects or regions develop (Ballard and Banks, 2003, Fine, 1994 p. 281). While not addressing them at length in his paper, Fine also highlights the importance of a guaranteed supply of labour and the need to include technological change, marketing and finance in any final theory of mining.

The spatial fixity of mineral resources and the highly-capitalised nature of large-scale mineral extraction is a central concern in this research. Fixity generates a number of important problems which mining must overcome in order for extraction to be successful, and shapes the relationship with the state. It is unfortunate, then, that the small number of political ecology-influenced studies of mineral extraction in Africa focus on small-scale, low-capital, largely artisanal and surprisingly mobile forms of mining with ambiguous relationships to the state which offer few parallels to the Northern Rhodesian Copperbelt. Much of this work is on small-scale mineral extraction and conflict covering a number of areas and minerals including artisanal gold mining in Ghana (Hilson, 2007, Hilson and Potter, 2005, Hilson and Yakovleva, 2007), rutile in Sierra Leone (Akiwumi, 2009), sapphires in Madagascar (Duffy, 2005) and diamond mining in conflict zones (Hilson and Maconachie, 2009b, Le Billon, 2001a, 2001b, 2008) but also explores risk and the gold industry in Tanzania (Emel and Huber, 2008) and policies for using mining to enhance development (Hilson and Maconachie, 2009a, 2009b, Hilson and Murck, 2000, Hilson and Nayee, 2002, Maconachie, 2009). One further issue with political ecology studies of mining is a marked lack of interest in the importance of drivers internal to the mining industry in shaping extractive activities. Both Bebbington, and Ballard and Banks, call for greater attention to the 'black box' of corporate decision making to address "imbalances in interpretation" in political ecology analyses where the "piously marginal" are given a thorough and sympathetic assessment of motivations and actions while capitalist
enterprises’ motivations are read off from the consequences of their actions (Ballard and Banks, 2003, Bebbington, 2010, p.230, Bhabha 1998 cited in Massey, 2000 p.285). Attention to the mining history literature discussed above which focuses on these drivers is one way of countering this ‘imbalance’ in this thesis. To develop a theoretical framework for the political ecology of mining then, it is necessary to draw upon a number of studies which might not identify themselves as political ecology but which engage relevant concerns and questions.

The remaining sections of this introduction synthesise a wider range of materials to explore the complexity of relations, struggles and actions required to produce natural resources and maintain extractive economies – what this thesis terms the challenges of producing an extractive space. A number of aspects are drawn out in this discussion: the historical roots of contemporary extractive capitalism; the multiple economic, political and environmental crises extractive capitalism creates; and the environmental and political struggles these crises bring about. In this final discussion of environmental struggle, three conceptions (or theoretical archetypes) of politics in political ecology studies are highlighted: the state and dispossession, networks of environmental governance, and environmental governmentality. In each of these, underlying metaphors of power are noted: ‘power over’, ‘associative power’ and ‘decentred flows of power’ respectively. The aim here is to link political ecology to a more explicit theorisation of the multiple modalities of power and rule involved in changing regimes of access to and control over resources. Understanding this link helps embed contemporary political ecology theory in the historical specificity of colonial Zambia and the ‘thin white line’. The following section then presents a research agenda and questions.

**The historical roots of contemporary extractive capitalism**

Marxist analyses of the political economy of the environment have done much to demonstrate the historical parallels of contemporary processes of natural resource extraction and its "profound geographical restlessness" (Moore, 2007 p.130). For Bunker and Ciccentell, globalisation should be understood as a 400 year process propelled by the competitive drive of nations to achieve global trade dominance through securing favoured access to specific natural resources (Bunker and Ciccentell, 2005). As proximate sources of natural resources become depleted, restless flows and dynamics of capital follow the
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Spatial distribution of these necessary inputs, driving the commodity frontier to ever more distant corners of the globe. In order to overcome the 'diseconomies of space' this generates and produce greater quantities of primary commodities in the face of competition, economies of scale and transportation must be realised (Barham et al., 1995, Bunker, 1985, Bunker and Ciccantell, 2005, Moore, 2003, 2007). Realising these economies of scale depends on a series of technological, institutional and financial innovations. To be successful, these innovations have first to conform to material and geographical laws governing the natural resources desired and, second, to respond to potential changes in behaviour by competitors (Bunker and Ciccantell, 2005). The use of new technologies itself requires the use of new materials – frequently those which best resist heat and pressure or contain energy – which draws new and ever greater amounts of materials into the system. Each would-be hegemonic power needs to overcome ever-greater material, technological and institutional complexity in order to secure the raw materials necessary for its dominance. Successive iterations of these "systemic cycles of accumulation" have produced the globalised world in which we live (Bunker and Ciccantell, 2005 p.13). The increasing intensification of global material flows and connections then, is not a recent or unique phenomenon; rather, it is merely one of many step-changes in an expansive intensifying process of material and energetic circulation which stretches back centuries and continues to this day. Spurred by advances in speciality steels, chemistry and electricity, the 'second industrial revolution' of the late nineteenth-century was one of these step-changes. Here, the colonial project of the late nineteenth-century had natural resource extraction at its heart. The extension of political control over new areas was fuelled by the desire to gain access to and control over new sources of natural resources (Bunker and Ciccantell, 2005). The acquisition and control of natural resources bound together the imperial projects of European states and shaped the processes and outcomes of colonialism. As Beinart and Hughes argue, "commodity frontiers and commodity chains gave the [British] Empire its character and unity" (Beinart and Hughes, 2007 p.2). Further studies point to the enduring legacy of this historical expansion with many of the roots of contemporary environmental practices being seen in colonialism (Hornborg, 2007, Moore, 2003). This link between colonialism and capitalist natural resource extraction forms a central theme of the current thesis.
A further link can be found in work by David Harvey on ‘accumulation by dispossession’ (Harvey, 2003). Harvey’s work builds on Marx’s conception of ‘primitive accumulation’ as a necessary pre-stage for capitalism - that capitalism requires for its functioning the creation of a landless working class, a proletariat. This proletariat is produced through dispossessing people of their land and other productive assets forcing them to sell their wage labour. Harvey argues that this is not a ‘pre’ stage of capitalism, rather, that it is an ongoing process produced by capitalism’s tendency for crisis - specifically, the crisis of “over-accumulation” (Harvey, 2003 p.139). Here, finance capital builds up with few productive outlets and declining rates of profit, a “spatio-temporal fix” is then required which either sinks capital into new areas (in this case, the African interior) or into long-term projects which will see a return in the future (Harvey, 2003 p.139). Colonialism and the expansion of capitalism into new realms is therefore not necessarily produced by competitive drives between nations for dominance (as argued by Bunker and Ciccantell above), rather, it is the outcome of nations using the range of forms of power at their disposal to avert crises in domestic capitalism.\(^{12}\) The concept of accumulation by dispossession points to the ways in which capitalism consistently requires something outside of itself for its own reproduction (Glassman, 2006). Particularly, capitalism requires the widening of markets or the periodic injection of devalued assets (e.g. natural resources) which it can turn to productive (profit-making) use. Colonial penetration into Africa served to produce both. There is a tendency, however, in Marxist studies of the political economy of the environment to treat the expansion of capitalism and the politics of the penetration of capitalist relations into new regions – in particular the complex multifaceted role of the state in this process – are never fully explored as the discussion retains an abstract character (Ashman and Callinicos, 2006).\(^{13}\) Conversely, many political ecology analyses have unpacked these, in reality awkward, processes of capitalist transition in great detail (Peet and Watts, 2004, Robbins, 2004, Watts and Peet, 2004). One key obstacle to this capitalist transition is its tendency for crisis and how these crises produce political struggle.

\(^{12}\) See footnote 40 on page 62.

\(^{13}\) These criticisms are further explored in the discussion of top-down conceptions of power deployed in analyses of states and dispossession below (Castree, 2006).
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Environmental crises

The concept of 'crisis' looms large in much political ecology research. Capitalism and capitalist natural resource extraction demonstrates a marked tendency to produce economic, political and environmental crises. For Immanuel Wallerstein (2007), these crises emerge from attempts to reduce costs at two key 'bioeconomic moments' in the production process: the moment of extraction and the moment of elimination of waste from the production process. The downward pressure on production costs leads to a pressure to reduce labour costs, either through mechanisation or lower wages. It also leads to the 'underproduction of nature' (linked to 'nature as time' discussed above) or degradation of the resource, generating a progressively rising unit cost of extraction. For Bunker, this makes extractive economies "highly unstable", often requiring capitalisation of the resource to maintain economically competitive extraction (Bunker, 2007 p.242, Prudham, 2005). In the case of mining, the relation between ore grade and production costs leads to the more accessible (closer to the surface) and higher quality ore being extracted first, generating increasingly higher unit cost of extraction as production continues (Bridge, 2000). While mechanisation is one of the main ways of bringing costs down, in African settings a central technique for keeping production costs low has been to maintain extremely low wages – effectively externalising the cost of reproduction of labour through setting wages so low that Africans had to maintain farming to survive (Glassman, 2006, Perrings, 1979, Van Onselen, 1976).

Reducing costs at the second 'bioeconomic moment' – disposing of waste at minimal expense – leads to the externalisation of a number of the 'environmental costs' of natural resource extraction and primary commodity production (Prudham, 2005, Wallerstein, 2007). This is a particularly challenging problem for mineral extraction which relies on "segregative processes that necessarily generate large and complex waste streams" in the form of high volumes of tailings and slags which require large areas of land, chemical residues from mineral treatment and noxious fumes from smelting (Bridge, 2000 p.248). Managing the social and environmental consequences of these waste streams has frequently been one of the most politically contentious aspects of mining (Martinez-Alier, 2003). Access to water and water pollution have been particularly contentious issues here as mineral processing requires large amounts of water and some of the largest volume waste streams from mining are waterborne (Bridge, 2000). As these 'externalities' mount,
capitalist extraction undermines the conditions of its own reproduction and generates a series of economic and environmental crises which have political and social consequences. Resolving these environmental crises generated by economic processes then becomes the stuff of politics. The tendencies of extraction to generate both state dependence on natural resource rents and also crisis tendencies which the state then struggles to contain, has led to what Auty terms the 'resource curse' as natural resource extraction can retard broader development within a territory (Auty, 1993, 2001, Ballard and Banks, 2003). This tendency for crisis generated by the growing penetration and intensification of capitalist relations around resource extraction forms an important backdrop to many political ecology analyses (Forsyth, 2004, Heynen et al., 2007b, Low and Gleeson, 1998a, 1998b, Peet and Watts, 2004, Robbins, 2004, Roberts and Emel, 1992, Sayre, 1999, Stonich and Bailey, 2000, Watts and Peet, 2004).

The conflicts which arise around struggles to externalise and reduce the costs of production and waste have been at the centre of the majority of political ecology analyses of mining (Akiwumi, 2009, Ballard and Banks, 2003, Bebbington, 2009, Bebbington and Batterbury, 2001, Bebbington et al., 2010, Bebbington and Bury, 2009, Bebbington et al., 2008a, Bebbington and Williams, 2008, Low and Gleeson, 1998a, 1998b, Martinez-Alier, 2003). The 'political ecology of mining' research to date takes the form of somewhat empirically and theoretically disconnected clusters looking at mining and conflict in Africa, Latin American mining and development, south Asian mining and environmental justice. In Africa, the focus of political ecological research has been on dispersed small-scale alluvial mining of highly-valuable diamonds or gold. Research has highlighted mining’s role in fuelling conflicts – either civil armed conflicts (Le Billon, 2001a, 2001b, 2008) or inter- and intra community conflicts (Hilson, 2007, Hilson and Potter, 2005, Hilson and Yakovleva, 2007). In the majority of these settings, the state plays an ambiguous role. It is not the dominant regulatory structure that we see in other areas, rather, its authority is tenuous and it acts as one of a number of competing interests with mining activities often beyond its control either through armed resistance or through informal and extralegal mining (Hilson, 2007, Hilson and Maconachie, 2009b, Le Billon, 2001b, 2008, Maconachie and Binns, 2007).
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In Latin America, Jeffrey Bury has produced a range of studies of the impacts of gold mining on local communities in Peru in the neoliberal period (Bury, 2004, 2005, 2007, 2008). These draw on the work of Anthony Bebbington who has been a particularly prolific researcher into the same region, recently spearheading attempts to provide an overview of the relationship between mining and development (Bebbington, 2003, 2009, Bebbington and Batterbury, 2001, Bebbington et al., 2010, Bebbington and Bury, 2009, Bebbington et al., 2008a, Bebbington et al., 2008b, Bebbington and Williams, 2008). For these Latin American studies the consequences of mining for development, the impacts of neoliberal globalisation (in the form of increased mining activity) on local communities and their livelihoods and the role of civil society in mediating political ecology struggles form central concerns.

In south Asia, Ballard and Banks, bemoaning the lack of research and theorisation of the sector, offer an overview and attempt to synthesise research on mining company - local community conflicts in south Asia into an 'anthropology of mining'. This reads much like a 'political ecology of mining' and emphasises the "exceptional complexity of the relationships that coalesce around mining projects" (Ballard and Banks, 2003 p.287). Their research highlights the joined up nature of environmental and political conflicts, the marginalisation of the rural poor in favour of urban elites, the range of actors and scales involved in these struggles and how mining often reconfigures state-society relations and is central in state ambitions for development and growth (Ballard and Banks, 2003, Banks, 2002, 2009). This theme of mining and state/community struggles is echoed in Leah Horowitz's ethnographic work on local community responses to a large nickel mine in New Caledonia (Horowitz, 2004, Horowitz, 2008a, 2008b, 2009, 2010). Low and Gleeson, also looking at south Asian mining, explore the case of the OK Tedi mine in Papua New Guinea (Low and Gleeson, 1998b). Here, they take an environmental justice perspective to this mine's shocking environmental impacts on the surrounding area and communities, so resisted by local groups that it spawned an independence movement (Filer and Macintyre, 2006, Macintyre and Foale, 2004). These different approaches reflect the historical and material conditions of mining in the different regions – African history of alluvial mining and comparatively recent arrival of large-scale mining, the long-term presence of large-scale base metal mining in Latin America and the presence of large-scale projects in indigenous areas in south-east Asia. The most influential researcher
adopting an environmental justice approach to mining is Joan Martinez-Alier. Martinez-Alier, in one key chapter, offers a historical survey of the manifold ways in which mineral extraction has produced a range of environmental injustices around the world (Martinez-Alier, 2003). In this, Martinez-Alier argues that these struggles are best understood as "ecological distribution conflicts" in which the costs of production are burdened upon local communities while the benefits of production are experienced in urban centres of consumption (Hornborg et al., 2007, Martinez-Alier, 2003 p.222, Martinez-Alier, 2007).

**Power, environmental struggle and the state**

'Ecological distribution conflicts', or struggles over the uneven distribution of the benefits and negatives of natural resource extraction, are a key theme of many political ecology analyses (Martinez-Alier, 2003, Peluso and Watts, 2001b, Watts and Peet, 2004). This centrality of struggle means that power – or more specifically inequalities of power – is fundamental to understanding the political ecology of natural resource extraction. There are few attempts to specifically unpack the concept of power in political ecology research and no attempts to systematically explore how it has been deployed in these studies. There are perhaps good reasons for this. As Low warns us, power "is both one of the most readily digested concepts in the world ... yet curiously difficult to define when we actually focus on it" (Low, 2005 p.83). If, as political ecology analyses argue, the relationships which mediate control over and access to resources are key to understanding capitalism and complex forms of capitalist transition, then literature which sheds light on the ways in which colonial rule was established and maintained with the barest of force in Northern Rhodesia is clearly of relevance. What follows then, is an attempt to understand the political ecology of environmental struggle by focussing on the conceptions of power which underpin them.¹⁴ Three forms of politics are discussed: (1) the state as an active or complicit agent of dispossession, (2) networks of environmental governance and (3) governmentality and environmental subjectivities. These concerns reflect the diverse theoretical heritage of political ecology from Marxist political economy of the

¹⁴ There are a number of useful surveys which explore the different theorisations of power over time by Lukes (2005), Hindess (1996) and, with a more geographical slant, Allen (2003) and Painter (2008). This research defines power simply as the exercise of influence over other people’s actions. Influence takes a range of forms, from coercion to negotiation (Allen, 2003). Implicit in this is the exercise of influence over other people's thoughts and beliefs. The influence of these without open knowledge (mystifications, false consciousness) is excluded from the current definition due to the methodological and ethical challenges it brings (Lukes, 2005).
environment and the anthropological roots of cultural ecology and are not necessarily mutually exclusive. Each form relies on a distinct spatial imaginary and each can be seen to have specific spatial expressions. All three have much to offer the current study. Naturally, this is not a definitive taxonomy of all research under the political ecology umbrella. Rather it is an attempt to bring together theoretical critiques of power with a recognition of the diversity of political forms, practice and political theories which occupy political ecology. It obscures some differences and illuminates others in the hope of producing a useful common understanding of the ways in which political ecology implicitly draws on a range of theories of power and rule. Drawing attention to the political archetypes at work within political ecology theory allows us to gain clarity on the multiple modalities of power required to establish and maintain regimes of access to and control over natural resources. Awareness of this multiplicity of modalities helps bridge diverse historical literatures on the colonial project (e.g. Marxist and liberal historical accounts are not necessarily mutually incompatible) and embed their insights within a political ecology of natural resource extraction in colonial Zambia.

The state and dispossession

When the state appears in political ecology analyses it often has one of two roles: as active or complicit agent of dispossession, or mediator of environmental struggles through its regulatory role in economic and social life (taken up in the next section). The first, the state's role in the processes of market integration – drawing new spaces, elements of nature and people into capitalist economic relations – is of central interest in the neoliberal period. Initially, much capitalist transition was seen to be the result of reduced state intervention around natural resources – a case of widespread deregulation in favour of international capital (Bridge, 2004). However it has become clear that this is as much a process of re-regulation as de-regulation, where certain areas become the focus of increased government activity while others have been largely abandoned to private actors by a 'rolled back' state (Castree, 1995, Heynen et al., 2007a, 2007b, Peluso, 2007).

Numerous studies draw attention to how the arrival of capitalist transition is augured by the processes of dispossession and 'primitive accumulation' as "dispossession is the necessary precursor to capitalist accumulation" (Mansfield, 2007 p.398, Peet and Watts, 2004, Stonich and Bailey, 2000, Watts, 2004, Watts and Peet, 2004). The privatisation of 'the commons' is a prevalent theme here, where resources and elements of nature which were once assumed to be communally or locally owned are declared to be state property.
and then sold to private firms (Bridge, 2007, Emel et al., 1992, McCarthy and Prudham, 2004, Robbins, 2004). As capitalist firms then occupy these lands, they effectively 'dispossess' local communities of their recently held resources. A socio-spatial re-organisation both precedes and follows the introduction of natural resource extraction (Bridge, 2002). Jeffrey Bury documents such a process in the Cajamarca region of Peru where the entry of a large mining company into the region transformed land-tenure patterns not only through the mining company buying land, but also through the institutions of enclosure or 'reparcellization' which grew up around these transfers (Bury, 2005). The resultant changes in land-tenure and prices transformed livelihoods in the surrounding communities. Similar stories of enclosure, dispossession and the "re-making of nature-society relations as property" are documented across a range of political ecology analyses as these changing property relations are seen as a key part of processes of environmental change, marginalisation and the production of vulnerability and poverty in the global south (Bridge, 2007, Bury, 2005, Heynen et al., 2007a, 2007b, Heynen and Robbins, 2005, Mansfield, 2007 p.403, Peluso and Watts, 2001a, Robbins, 2004, Sayre, 1999, Stonich and Bailey, 2000).

With the focus often on the dynamics of local communities, the state often looms monolithically large in the background of these studies and rarely makes it to the foreground of analysis where its intricacies, contradictions and convolutions might be recognised (McCarthy, 2007). Distinguished by its scale and large resources, the state is seen as a coherent and often effective agent of domination and dispossession. For many analyses closest to the Marxist end of the political ecology spectrum, power is implicitly understood as a capability held by certain groups and institutions and not others and directly related to resources (Bunker and Ciccantell, 2005, Moore, 2003). The metaphor here is that of wealth, where power is a commodity that can be possessed, amassed or passed around (Foucault, 2003b). Power is vested in institutions and their amassed resources, and broadcast from these centres to the surrounding area or population (Bryant, 1997, Peluso, 1994). In these studies, a negative conception of power is posited where power works through obstructing, preventing and removing options and remains more or less a synonym for domination (Lukes, 2005, Sharp et al., 2000). Power is 'power over' people where the free will of individuals is subordinated to that of the dominant power and is counter-posed to resistance (Hindess, 1996, Pile and Keith, 1997, Sharp et al.,
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The focus for research then often becomes one of two things: how domination is secured and maintained and how domination is challenged and subverted (Bryant, 1997, Peluso, 1994, Scott, 1985). While this notion of power has much to offer in terms of understanding large-scale power inequalities, it remains simplistic. Its binarising approach reduces power to a zero-sum game of 'haves' and 'have-nots' and, through conflating power and resources, can lead to a quantitative and deterministic understanding of power relations (Allen, 2003, Painter, 2008). More recent political ecology research often works hard to break down these block labels and unpack the complex discursive struggles which underpin the politics of environmental governance (Watts, 2004). The state is not a coherent single 'block' but is instead comprised of multiple institutions and 'state projects' operating at a range of scales (Jessop, 1990). As a result, different elements of the state often have conflicting aims producing complex struggles (Ballard and Banks, 2003, Li, 2007, Tsing, 2005, Watts, 2004). Most often however, the state and the mining companies are subject to much less detailed analysis of the complexity of decision-making and interests than affected communities in environmental struggles (Bebbington, 2010).

Networks of environmental governance

The institutional forms through which environmental struggles are mediated have received much attention in political ecology research. There is a recognition in a range of studies that the institutions which mediate and regulate environmental change are multiple, overlapping and multi-scalar, and include both state and non-state actors forming complex networks of environmental governance. One body of work examines the rise of transnational environmental governance and seeks to understand the growing role of international networks of expertise, authority, finance and co-ordination – often of both state and non-state actors – in creating new global regimes for regulating socio-environmental relationships (Betsill and Bulkeley, 2004, Bulkeley, 2005, Duffy, 2005, 2006, Paterson et al., 2003). Others have looked at how environmental justice outcomes become contested through the regulatory frameworks of the state and include a range of groups and interests (Krueger, 2002, Prudham, 2005). Much interest, however, has focussed on examining social movements and local, national and international NGOs, as these have been central in aiding the marginalised poor to contest the impositions of transnational firms (Ballard and Banks, 2003, Banks, 2002, Bebbington et al., 2010, Bebbington et al., 2008a, Bebbington et al., 2008b, Forsyth, 2004, Low and Gleeson,
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1998a, 1998b, Tsing, 2005). Anna Tsing's approach to understanding mining in the context of globalisation and 'global connection' in ways which link the metropolitan core with the resource periphery is a good example of this (2005). Almost all of these examine struggles which involve poor and marginal groups working together and making international links to resist environmental changes detrimental to them and their livelihoods (Ballard and Banks, 2003, Banks, 2002, Bebbington et al., 2010, Bebbington et al., 2008a, Bebbington et al., 2008b, Li, 2007, Low and Gleeson, 1998a, 1998b, Tsing, 2005).

Central to this research is an understanding that the simultaneously discursive and material nature of the environment means that "political ecological conflicts are thus as much struggles over meaning as they are battles over material practices" (Bryant and Bailey, 1997). Inherent in representations of nature and natural resources are understandings about how nature should be used and what forms of interaction with it are acceptable (Gregory, 2001). Drawing on Foucauldian (taken up in the following section) and anthropological notions of discourse, truth claims, identity and positionality, a number of political ecology analyses explore environmental conflict as struggles over meaning attributed to specific elements of nature (Agrawal, 2005, Krueger, 2002, Li, 2007, Tsing, 2005, Watts and Peet, 2004). Here, representations are understood to be "the inexorable intertwining of the subjective and objective", dynamic, contested and produced through struggle (Li, 2007, Prudham, 2005 p.19, Watts and Peet, 2004). In the case of mining, Rob Krueger explores how changing discourses of the environment within the same regulatory framework produced very different regulatory outcomes for the Montana gold mining industry (Krueger, 2002). Here, Krueger marks a shift from a technical, engineering understanding of the environment to an ecological one in the regulatory process. This "cultural shift in the construction of nature had material implications" for mining activity by increasing the cost of extraction and reducing the possibility for externalising costs (as discussed above) (Krueger, 2002 p.880). With the shift to an ‘ecological’ understanding of nature, the meaning of the 'environment' in the regulatory process changed. The struggles over the meaning of a specific element of nature then, is a struggle over who has access to it and for what purposes. In the global South, this material struggle over access to and control over aspects of nature is often simultaneously a discursive debate couched in the language of 'development' (Ballard and
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Banks, 2003, Robbins, 2004, Watts and Peet, 2004). This detailed attention to the ways in which environmental changes are contested within many political ecology analyses highlights the mechanisms through which social and environmental injustices are produced and how capitalist relations and processes – such as marketization and privatization – are always incomplete, contested, liable to rupture and therefore need to be maintained (Li, 2004, Mansfield, 2007, McCarthy and Prudham, 2004, Tsing, 2005). The metaphors of power here vary, but there is often an implicit recognition that power is not necessarily a top-down affair. Instead, there are echoes of Hannah Arendt’s conception of ‘associative power’, where power "corresponds to the human ability not just to act, but to act in concert" and (cited in Allen, 2003 p.53) and is "intrinsic to all social interaction; it is the medium by which events are transformed, regardless of whether or not such an outcome serves one particular set of interests over another" (Allen, 2003 p.43, Mann, 1986). While the scope for domination remains, this is much more of a horizontal conception and many of these analyses locate the functioning of power to produce certain outcomes in networks and acts of coordination. Importantly, power here rests on the use of resources and is therefore distinct from resources themselves (Allen, 2003). If power is a quality of all social relationships, then the question becomes less one of who has power or where does it lie and more one of how power is organised. As a consequence, these studies turn their attention to the networks through which power is organised.

Governmentality and environmental subjectivities

A third conceptualisation of politics in political ecology explicitly (or implicitly) draws on the work of Michel Foucault. Foucault treated power as heterogeneous and immanent to all social relations, understanding it as "something that circulates" acting both on subjects and through them (2003b, p.29). For Foucault

"All forms of power are heterogeneous, we cannot therefore speak of power, if we want to do an analysis of power, but we must speak of powers and try to localize them in their historical and geographical specificity" (Foucault, 2007a, p.156).

He attempts to do just this in a number of studies exploring the changes in states and institutions in Europe since the Enlightenment period (Foucault, 1991a, 2003a, 2003b). Foucault’s work was a direct critique of state-centred conceptions of power as a centralised capacity of homogenous domination; instead power worked to both enable and constrain through the dispersed total "structure of actions" bearing on the action of
free individuals (Foucault, 1982 p.789). This work raised a series of themes which have been taken up in political ecology: the links between power, knowledge and statecraft to produce specific governmental spaces, targets and subjectivities (governmentality); and how dispersed complex alignments of institutions, processes and forces work to produce self-regulating subjects ( dispositifs and disciplinary techniques of power). Many of these studies share Foucault’s historical interest and have sought to unpick how dispersed techniques of power feed into broader patterns of domination (Agrawal, 2005, Allen, 2003, Braun, 2000, Craib, 2004, Foucault, 2003a, 2003b, 2007b, Li, 2007, Mitchell, 1990, 2002, Scott, 1995).

A range of studies point to the relationship between knowledge and power in relation to environmental struggles. This agenda can be seen in the discussions of the simultaneously material and discursive nature of environmental struggles in the previous section. Differing discourses of natural resources and the natural environment represent different conceptions of what is valuable and what constitutes legitimate engagement with nature (Escobar, 1998, 1999). The very identification of an aspect of the natural environment as a natural resource has been problematised as both constructing a new field for intervention and marginalising previous understandings of the natural environment (Berkes, 1999, Guha and Martinez-Alier, 1997, Howitt, 2001, Martinez-Alier, 2003, Peluso and Watts, 2001a, 2001b, Prudham, 2005). A number of these studies point to the important role of knowledge in producing a space which can be managed and thus governed and intervened in (Craib, 2004, Drayton, 2000, Escolar, 2003, Mitchell, 2002, Scott, 1985). Scott’s work on ‘seeing like a state’ here, is taken up in Chapters Five and Six (Scott, 1998). Networks of knowledge and expertise are a key link between the extractive periphery and the metropolitan core in both colonial times and the present day (Bridge and Wood, 2005, Drayton, 2000, Mitchell, 2002). Anna Tsing draws attention to this in her research into an oft-ignored aspect of natural resource extraction in political ecology: the moment of raising capital for prospect development. Her research into the Bre-X scandal highlights to the speculative nature of mining investment and thus the

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15 There is a chronology to the engagement within political ecology of Foucault’s ideas as not all of Foucault’s work was translated at the same time. Following the 1991 publication of The Foucault Effect a series of political ecology studies took up governmentality and incorporated ideas of discourse, while more recent translations of Foucault’s lectures have seen renewed interest as ideas only signalled in the 1991 translation receive greater elaboration (Burchell et al., 1991, Foucault, 2007b, 2008, Nally, 2008).
central role of scientific expertise and the 'conjuring' of a specific geographical imaginary of the resource periphery in order to generate investment; a process she terms 'spectacular accumulation' (Tsing, 2000). Addressing similar concerns of how the geological periphery comes to be a site for investment and intervention is Bruce Braun's investigation into the geological mapping of western Canada and the production of a geographical imaginary which re-visioned Canada as including a new axis of 'vertical territory' (Braun, 2000). Braun argues that:

"Geology did not simply exist 'in' a given territory. Rather, as a set of rules governing what was visible in nature, geology brought a 'territory' with its 'qualities' into being, and thus opened a space – simultaneously epistemological and geographical – that could be incorporated into forms of political rationality." (2000 p.28)

Braun's linking of geology, empire and governmentality opens a fertile avenue of enquiry on the role of geological mapping in the production of state space and how the production of geological knowledge generates new legal regimes, state structures and forms of subjectivity taken up in later chapters (Braun, 2000).

The role of claims to nature as natural resources (and with this expertise and dominion over them) in the development of the colonial state has been explored in a number political ecology studies (Bryant, 1997, Bryant and Bailey, 1997, Craib, 2004, Li, 2007, Peluso, 1994, Peluso and Vandergeest, 2001). Nancy Peluso and Peter Vandergeest have developed a body of work on colonial forestry which examines the ways in which the state used the concept of natural resources to claim control over large areas of forest which they term 'political forest' (Peluso and Vandergeest, 2001, Vandergeest and Peluso, 2006a, 2006b). This work draws on conceptions of governmentality (rather than the Marxist conceptions of the state and politics in Peluso’s earlier work) to understand how the colonial state used scientific knowledge production and legal and institutional regimes to both transform land use and extend political control over colonial subjects (Peluso and Vandergeest, 2001, Vandergeest and Peluso, 2006a, 2006b). This is part of a body of work on ‘colonial governmentality’ which explores the use of decentralised technologies of governance to rework socio-ecological relations to the change the ‘conditions of life’ and extend the power of the colonial state through the production of new behaviours of self-regulation (Agrawal, 2005, Li, 2007, Scott, 1995). Cole Harris provides an
interesting exploration of dispossession, natural resources and governmental techniques in nineteenth-century North Western Canada (Harris, 2004). For Harris, the dispossession which enabled natural resource extraction was not so much a process of cultural hegemony or the pure application of force. Rather, it was a surprisingly complex combination of interventions between state and private actors. Harris argues that capitalist expansion, violence and discursive labels needed to be combined with "disciplinary technologies of … maps, numbers, [and] law" in order to manage and sustain colonial geographies of dispossession (2004 p.165). This interest in the multiple modalities of power and rule required to produce and maintain regimes of access to and control over natural resources is paralleled in this research.

Foucault's theories are not without their limitations. With such a broad conception of power, it is difficult to draw the lines as to what does and does not constitute power or see how it might be avoided or contested. If power is everywhere, then it may as well be nowhere (Allen, 2003). While Foucault's work is often highly spatial and several analyses argue that ‘space’ is central to the working of power, the question of mediation often remains obscure. Often, Foucauldian studies fudge the question of how rationalities and power relations traverse space. While these may be clearer in the context of specific institutions such as the clinic or prison, when broadened to society-wide process this becomes rather more problematic (Allen, 2003). This is doubly important when exporting ideas from Foucault's Euro-centric studies to the colonial hinterland where the sheer absence of state infrastructure, its 'sponginess', is one of its defining characteristics (Clapham, 2001). The capacity for rulers to produce the outcomes they desire is taken for granted in some analyses which privilege examining the 'programmers view' over material interventions by the state (Huxley, 2006, Rose et al., 2006). The attendance to the complexity of political struggle in political ecology tends to mollify this tendency, but sometimes the discursive aspects of the struggle can take analytical precedence of its material aspects. Following Harris, a judicious use of Foucauldian ideas of power can usefully supplement those of more top-down or collaborative models rather than supplant them.

One body of theory which brings together these different modalities with a sense of their contingency is John Allen's (2003, 2004). Rather neatly side-stepping the debate as to
which conception of power is 'correct', Allen argues that these different modalities of power work in different ways, having different, but recognisable, characteristics (Allen, 2003). This work derives from work in human geography on space. This body of work has developed a notion of space that is not separate from social processes, but constituted by them:

"Processes do not occur in space but define their own spatial frame. The concept of space is embedded in or internal to the process" (Harvey, 2006 p.123).

A highly politicised notion of space has developed in human geography. It has come to be seen as "the concretization of social relations" (Mitchell, 1992 p.154), the arena of power relations and the "very stuff of power" (Thrift, 2000 p.274). For Allen, "power is inherently spatial, and, conversely, spatiality is imbued with power" (Allen, 2003 p.3). Central to the different modalities of power have distinct spatialities. For ‘gentle’ non-deterministic modes of persuasion such as 'seduction' distance is of little consequence, while the modalities of 'authority' or coercion rely heavily on proximity and palpable presence to generate their effects. Power remains a social effect, indissoluble from its outcomes, but the engagement with mediation places space in the centre-ground to understanding how different modalities of power work to produce the effects they do (Allen, 2003). This thesis draws on Allen's work to illuminate the understandings of power already used in political ecology research and engage fully with the multiple

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16 Allen lists these modalities as authority, domination, inducement, coercion, manipulation, seduction, negotiation and persuasion (2003).

17 Space is a central ontological concept for human geographers and has been much debated, theorised and analysed within the subject. In early human geographical and philosophical analyses, space was a container, a grid, a flat unproblematic and stable geometrically-defined area inherited from maths and geometry on which social action occurred (Harvey, 2006, Lefebvre, 1991). Counter to these notions of space as a container, came a wave of analyses which problematised this conception; space was not purely a given, a blank canvas upon which social action was painted, it was constitutive of and constituted by social processes and inseparable from the concept of time (Harvey, 2006). Henri Lefebvre, in a pivotal theoretical work, argued that socio-political contradictions are realised spatially (Lefebvre, 1991). The very landscape and spatial patterning of society reflected the social relations which came to produce it. For political geographers, these insights led to space becoming a key concept in understanding power and politics in society. Accordingly, the axis of analysis has shifted as "the question 'what is space?' is … replaced by the question 'how is it different human practices create and make use of different conceptualisations of space?'" (Harvey, 2006 p.126).

18 Implicit in this conception of space as produced by social relations is the idea that nature is too. This 'production of nature' argument comes from Neil Smith’s work Uneven Development (2008). Through changing our relationships with nature, producing new ways of understanding and interacting with it, and through the physical transformations human labour and actions engender in the natural world, we effectively ‘produce’ nature. The natural world is not separate from the social world, instead, they constitute each other (Castree, 2001).
modalities of power required to produce and maintain regimes of access to and control over natural resources.

**Research agenda**

This study sets out to understand the production of extractive economies through examining the early 20th century Northern Rhodesian Copperbelt. In this examination, a critique of existing accounts of the rise of European-controlled mining in colonial southern Africa is made. This thesis highlights the complexities of the struggle to produce both extractive capitalism and stable colonial rule and how the production of an extractive space on the Copperbelt had long-term consequences for the territory's development. To do this, this research draws upon the tools of political ecology and work on rule and power. As illustrated in the previous section, political ecology provides a useful conceptual and methodological toolkit for understanding the political and economic origins of environmental and social change, one that highlights forms of access to and control over resources and the politics of knowledge production. It points to how natural resources are appraisals of the natural environment, the historical restlessness of the commodity frontier, the tendencies of capitalist natural resource extraction to produce a range of crises which then produce struggles, and how these struggles are mediated through a range of political forms and forms of politics. Centrally, this is a concern with the ways in which capitalism, nature and politics interact, and specifically to how regimes of access to and control over resources are produced and contested. The production of an extractive economy on the Northern Rhodesian Copperbelt was a process fraught with contradictions and which generated widespread social disruption and tension. Many of these were fielded by colonial administrators. By engaging with work on power and rule, this research examines the ways in which techniques and technologies of rule underpinned the extension and entrenchment of extractive capitalist relations in Northern Rhodesia.

The aim here then, is to engage in a 'spatially curious' examination of power and the political ecology of extraction on the Zambian Copperbelt. The space of the Northern Rhodesian Copperbelt was produced through changing understandings, behaviour and the physical materiality of the area. All these transformations were required in order to integrate the Copperbelt into global markets and enable the flow of materials and wealth
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out of colonial Zambia. The concept of an 'extractive space' allows engagement with the physical problematics of natural resource extraction – the diseconomies of space, the materiality of nature – but also its political dimensions, the ways in which natural resource extraction relied on changing regimes of control over and access to resources. Changing these regimes required not only the imposition of military dominance, but also the erection of an entire institutional infrastructure of rights and ownership – concepts which did not necessarily map well onto existing African political institutions and ideas. For the Copperbelt to become an extractive space then, understandings of specific aspects of nature, patterns of behaviour and material infrastructures had to change. The space had to be reworked in order to facilitate certain flows of materials, finance and people and inhibit others. Ideas of power, rule and space offer a useful theoretical toolbox for engaging the multiplicity of changes required for mining to be successful in the African interior.

Specifically, this research aims to:

• Describe how the Zambian Copperbelt was produced as a space for natural resource extraction and integrated into global commodity markets in the early colonial period

• Understand how extractive capitalism and colonial rule were both produced through changing socio-ecological relations on the Zambian Copperbelt

• Explore the ways in which the imperatives and contradictions of mineral extraction shaped rule in colonial Zambia and vice-versa

• Examine how the regimes of access to and control over resources established on the Zambian Copperbelt in colonial period generated and maintained relations of inequality

• Analyse how these regimes of access and control and changed socio-ecological relations helped produce the conditions for ongoing inequalities in Zambia

In working towards these aims, this thesis poses the following research questions:

• How was the Zambian Copperbelt produced as a space for natural resource extraction and export to global commodity markets in the early colonial period?
• In what ways did 'European' actors intervene in socio-environmental relationships in colonial Zambia to produce new regimes of access to and control over resources on the Copperbelt?
• How did the political economic imperatives of extraction and the political imperatives of colonial rule interact to produce the inequitable political ecology of extraction of the Northern Rhodesian Copperbelt?

The research: issues of conceptualisation and method

The methodological challenges thrown down by 'orthodox' political ecology are formidable. In seeking to provide a rich picture of environmental transition from multiple perspectives with a focus on detail and contingency and with a clear awareness of the systemic properties of capitalism, political ecology research seems to demand the nuance of ethnographic study, the rigour of natural science research, theoretical depth and a surfeit of time. While this research engages with some of these challenges, it consciously sidesteps others. In particular this thesis takes up the agenda of Paulson et. al. that research seeking to understand environmental change in any 'holistic' sense must engage with multiple sites, scales and actors and "identify and study multiple spheres and social axes of power and difference" (Paulson et al., 2003 p.210). The aim here is to "encompass phenomena manifest in one or more specific geographical locales … [and] identify relations and influences between these spaces" (ibid.).

The methodological challenges of studying history too are important here. History can only be studied in relation to the present; it may be a 'different country', but its representation does not exist independent of understandings shaped by the contemporary period (Vitalis, 2006). As Henderson argues (paraphrasing Carr, 1964),

"The study of history involves a constant dialogue between past and present, in which the questions we ask about the past are dictated by what we know about the present, and are therefore constantly changing" (1975 p.2)

The aim of research, therefore, is to understand the 'constellation' formed between the historical periods studied and the present, and in so doing, shed light on both (Benjamin, 1992). There is a tension here between using theory with a strong Marxist foundation with its implicit teleologies and theoretical desire to explain outcomes as 'necessary', and historical sensitivity to the contingency of historical outcomes. Political ecology, with its
emphasise on struggle, contest and the 'incompleteness' of all forms of domination, is well equipped to manage this tension. Importantly, the goal is not to build up a single coherent narrative which leads smoothly from the Copperbelt's inception to date. This would be disingenuous and perpetuate an image of the "homogenous course of history" which privileges the voice of the victor (Benjamin, 1992 p.254). Rather, the aim is to look not only for the continuities and repetitions from historical periods in the present, but for disjunctures, moments of struggle and ruptures in the smooth process of history – moments which cast both the present and 'messianic time’ in a different light.

The research for this thesis was carried out between 2006-9 in archives in both the UK and Zambia. This included multiple visits to the UK National Archives at Kew and the Institute of Materials, Minerals and Mining in London and single visits to Rhodes House, Oxford and the archival collections of the British Library of Political and Economic Science at the London School of Economics and Political Science. In Zambia, research was concentrated on the National Archives in Lusaka with one brief visit paid to the archives of ZCCM Investment Holdings (ZCCM-IH) in Ndola. A range of archival sources were sought out to give multiple perspectives on the subject matter. The archives are dominated by sanitised governmental accounts, but internal communications and memoirs (e.g. Harding, 1933, Stephenson, 1937) often provided a different lens into the activities on the ground, giving greater granularity and opening the possibility for a richer analysis of the competing perspectives at work. The mining industry press (such as Mining World, the Mining Journal and the South African Engineering and Mining Journal) and subsequent retrospectives (in the financial and mining press and also some

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19 Walter Benjamin contends that history needs to be studied critically, questioning 'messianic' conceptions which see all previous generations as leading to the present one, as if our coming was expected. The historian, he argues "stops telling the sequence of events like the beads of a rosary. Instead, he grasps the constellation which his own era has formed with the earlier one. Thus he establishes a conception of the present as the 'time of now' which is shot through with chips of messianic time" (Benjamin, 1992 p.255).

20 60 interviews were also conducted during this research. In the final thesis the data collected in these only provide context or corroborate what is written elsewhere. Therefore the methodology of interviews is not explored in depth here. Those interview data is a hangover from the original research design which intended to compare the Copperbelt in the colonial and contemporary periods, the recent post-privatisation era seeing a boom which was reminiscent of the early mining boom on the Zambian Copperbelt. After the data collection phase, it became clear that the comparative approach would obstruct the level of analytical depth and it was simply too cumbersome and ambitious to include within a single PhD thesis. The comparative approach was then dropped and a historical focus adopted.

21 The brief single visit was due to the archives being closed to the public by the ZCCM-IH board for the majority of the six months research period in Zambia.
historical journals like the Northern Rhodesian Journal) were extensively surveyed to gain insight into the commercial and technical drivers and dynamics of mining in colonial Zambia. In all of these, thematic areas of nature (forestry, game, conservation, hydrology, geography, climate, disease), mining (labour, government regulation and revenue collected and generated), rule (colonial administration, 'direct' and 'indirect' rule (native courts and Native Reserves) police and district offices and tours) and the production of space (roads, railways, boundaries and communication) were of central interest. Geographically, the focus of research was always on the Copperbelt with a slight emphasis placed on the development of Roan Antelope, as this was the first large-scale copper sulphide mine to reach production in the early 1930s.

In reading the sources, while the discursive framing of issues and texts was of concern, focus was placed on actions taken and problems actors encountered. The argument here is that insight into struggles to control and define an area can be gained through viewing the actions of colonial actors as responses to problems, and asking: 'what were the questions that these actions sought to answer?' Similar research into the records held on Nigeria provided a wealth of information which not only documents official accounts of the experience of establishing rule, but gives insights into the struggles, contingency and fallibility of this process (Bridge and Frederiksen, forthcoming [2011]). Experience here demonstrates that, while some interpretation is needed, an "empiricism of the surface" gives a remarkably clear picture of the values and aims of imperial rule, the tools and mechanisms used and the problems encountered (Rose, 1999 p.57). The administrative diligence of the British-trained bureaucrat in documenting both success and failure means that, despite no doubt plenty of editing, much valuable and insightful information remains. This is not to say documenting colonial environmental struggle is always straightforward, far from it. Both British officials and Africans had reasons to minimise

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22 In elaborating a research agenda for investigating governmentality and the genealogy of governance, Nikolas Rose advocates an abductive approach which analyses texts on their own terms rather than engaging in deep reflexive analysis: "On the basis of a certain symptomology, then, genealogies of government seek to reconstruct the problematizations to which programmes, strategies, tactics posed themselves as a solution. If policies, arguments, analyses and prescriptions purport to provide answers, they do so only in relation to a set of questions. Their very existence is dependent upon the existence of such questions. If, for example imprisonments, marketization, community care are seen as answers, to what are they answers? And, in reconstructing the problematizations which accord them intelligibility as answers, these grounds become visible, their limits and presuppositions are opened for interrogation in new ways" (Blaikie, 2000, Rose, 1999 p.58).
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the documentation of any struggle taking place. As Scott reminds us, the subordinate often aim to mitigate the impositions of those in authority in ways which do not draw attention and "leave few traces in the wake of its passage … [which] eliminates much of the documentary evidence that might convince social scientists and historians that real politics is taking place" (Scott cited in Bryant, 1997 p.v, Scott, 1985). Rather, with careful and sensitive reading and a focus on first-hand and less 'edited' accounts, much useful information may be gleaned from the archival record, even if it appears of marginal significance to the original authors.

Archival research by its very nature is laborious and its dividends uneven. For African archives this is perhaps even truer than those in the UK. The years have not been kind on African archives. Both the National Archives of Zambia and the ZCCM-IH Archives have suffered numerous losses over the years. Numerous sources used by earlier scholars – Gann, Macpherson, Meebelo and Hall – no longer exist or have been lost. Ironically for this research, documents pertaining to the Copperbelt are perhaps among the worst affected. The ZCCM-IH Archive has been subject to neglect and multiple burglaries in the post-privatisation period.23 In the National Archives in Lusaka, (perhaps reflecting the regions' backwater status until the late 1920s) key collections relating to Ndola and the Copperbelt, such as correspondence too and from the District Office before the 1920s, quarterly reports and district tour reports24 have all gone missing and the Ndola District Notebook is very patchy prior to the 1930s.25 This has necessitated a greater reliance on the secondary literature for historical research conducted in decades past for quotes and historical details than was originally anticipated. This includes the few historians who have attempted to use oral testimony (Chipungu, 1992c, Macpherson, 1981, Meebelo, 1971).

23 The head archivist at the ZCCM-IH archives spoke with anguish in his voice as he recounted stories of seeing stolen archival documents being used to wrap food on the Ndola market.

24 This specific absence is particularly disappointing as these are often seen as a key source for more ‘unfiltered’ accounts of the difficulties of colonial rule. Any future research trips to the National Archives of Zambia will include further efforts to locate them as archives often include duplication. One UK source where such ‘unfiltered’ accounts (among others) may be duplicated is the Gell Papers at the Derbyshire Record Office which include the papers of former BSAC director, chairman and president Philip Lyttleton Gell. These came to my attention at a late stage in the research process and were thus not consulted in the production of this thesis.

25 To the extent that it includes the note of one reviewer in the 1930s who wrote "this is incomparably the worst d.n.b ever seen!" (NAZ KSN 2/1 Ndola District Notebook p.2).
Introduction

The archive, naturally, is not a power-neutral space. The archival record is clearly a biased one, privileging the voice of male Europeans to the exclusion of Africans and women. There is no final answer to the absence of a range of voices in the archive. In the absence of African voices from the archives three approaches are taken – an emphasis on sources which use oral history (named above), an emphasis on sources which include African voices (e.g. meeting minutes and testimony to inquiries) and an emphasis on contemporary colonial sources which actively sought to represent African interests (e.g. missionaries). In all three of these the African voice is mediated. However, in the absence of a range of contemporary colonial African accounts, this – along with a focus on the problems and ruptures of the colonial project – will have to suffice. The second and perhaps more intractable bias is that of gender. The early colonial project was largely a men-only affair with the tropical climate considered particularly unsuitable for women (Geary, 1965). The archival record reflects the patriarchy which the British sought to impose, with British officials largely uninterested in recording the activities of interests of women in colonial Zambia. This gender bias is also partly a result of the industry being studied, as Ballard and Banks argue "mining is an exceptionally masculinised industry in terms of the composition of its workforces, [and] its cultures of production" (Ballard and Banks, 2003 p.302). While these limitations are important to the nature of any conclusions drawn, they primarily reflect the sources upon which this research is forced to rely.

The thesis structure

A broadly chronological structure is followed in the thesis, with a focus on 1899-1907 and 1923-35 – reflecting two periods which witnessed change in both the structures and patterns of rule and intensified activity of mining companies in Northern Rhodesia. Each chapter takes the opportunity to introduce theoretical concerns which were particularly elucidated in the period covered, even though the processes described are not limited to the period covered in the chapter. For example, Chapter Five explores the ways in which the Zambian subsurface came to be known drawing on ideas around colonial science and the legibility of nature. These themes are arguably equally applicable to Chapter Three which covers the early mining industry in Northern Rhodesia, but are well elucidated in the massive prospecting efforts of the 1920s described in Chapter Five. The aim here is to balance readability, comprehensibility and theoretical insight by organising the chapters
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into a loosely chronological story without front-loading too much theory. Chapters Five to Seven are longer and more in-depth than the earlier chapters as it is here that the majority of the theoretical and empirical contribution of this thesis lies. The chapters are as follows:

Chapter Two provides the historical setting for the subsequent chapters. The expansion of British rule into Northern Rhodesia is placed in the context of the 'scramble for Africa' and an increasingly powerful and global mining industry. It gives an overview of the arrival of British colonialism in Northern Rhodesia, a process of conquest that had important legacies for the nature of colonial rule that was to follow. Arguing that the early British rule was characterized by a paucity of resources, reliance on violence and a focus on developing mining, this chapter introduces a number of themes taken up throughout the thesis. The chapter concludes by unpacking an early declaration of British rule on the Copperbelt.

Chapter Three examines the early mining industry in Northern Rhodesia. Here mining activity in Northern Rhodesia is seen as the product of a series of global mining booms of the time. These booms signalled the expansion of mining worldwide and the increasing penetration of the 'race for resources' into the African interior. The chapter documents the earliest mines in Northern Rhodesia, the majority of which ultimately failed. With the extent of deposits unknown, crude technologies, few transportation links and unreliable labour supplies, these mines faced an uphill battle to profitability. This was a battle which most of them lost despite access to rich mineral reserves. This chapter argues that these obstacles ultimately represented a failure to create an extractive space for mining and signal the obstacles which future successful mining would need to overcome. Two of these obstacles – accurate assessment of mineral reserves and stable labour supplies – are covered in Chapters Five and Six.

Chapter Four explores early colonial rule in Northern Rhodesia. It documents the attempts by the BSAC administration to produce an effective extractive space through generating a supply of cheap African labour for European enterprises. Two main techniques were used: the imposition of a poll tax (called the 'hut tax') and a clamp down on African-controlled forms of economic activity. Both of these were backed by the use
of coercive force. Both initiatives were blunt instruments for generating the desired labour flows and instead produced widespread political turmoil as Africans resisted the impositions. The second half of the chapter explores the limits of colonial power in early Northern Rhodesia. These limits in resources and a reliance on African political structures, when combined with a reliance on coercive force, fatally undermined the BSAC’s efforts. Economic development remained an elusive prospect as the BSAC failed to provide either the conditions for a successful extractive capitalist economy or stable colonial rule. This chapter concludes by arguing that early colonial rule was deeply dysfunctional and disruptive through its reliance on crude tools to resolve complex problems and left a difficult legacy for later decades.

Chapter Five explores the development of the mining industry in the 1920s. This period saw the rise of the Copperbelt as a global centre of copper production. The latter half of the 1920s saw a construction and labour boom begin to transform the region with a number of large new mines being built. This boom was the outcome of massive prospecting efforts on the Northern Rhodesian Copperbelt which demonstrated the presence of large quantities of commercially-attractive copper ores. The chapter explores the prospecting efforts as part of the spread of networks of colonial science which worked to both draw new spaces and natures into global circuits of capital and extend the reach of colonial rule. The methods and tools of these exploration geologists and scientists enabled the Northern Rhodesian subsurface to be ‘seen’ in new ways as prospecting operations revealed previously unseen copper sulphide ores. The chapter details the challenges of two specific efforts at rendering the Northern Rhodesian underground legible and visible so that investment and extraction could take place. Understanding these challenges demonstrates why the arrival of large-scale mining on the Northern Rhodesian Copperbelt occurred decades after it did just to the north in the Congo. The chapter finishes by exploring how scientific geological knowledges were translated into the language of investors in the global mining press and the construction boom spurred by mine development in the late 1920s and early 1930s.
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Chapter Six explores the first decade of Colonial Office rule following the Devonshire Agreement in 1923. It examines the process of creating stable colonial rule in rural Northern Rhodesia and the generation of a steady flow of labour for the copper mines. To do this, the concept of 'colonial governmentality' is developed and applied to the Northern Rhodesian case. Two policies are explored – Indirect Rule and the creation of 'Native Authorities', and the constitution of 'Native Reserves' on which these new political forms were based. These governmental technologies sought to re-work the political landscape and align relations between 'men and things' in ways which furthered the aims of both extractive capitalism and colonial rule. They also sought to modernise and improve the wellbeing of Africans. However, rather than improving rural life in Northern Rhodesia, they undermined the wellbeing of Africans and entrenched rural poverty. While this is often seen as their original aim, this chapter argues that the limitations of statecraft and state capacity in and of themselves can explain these outcomes, and that these same limitations gave rise to later political instability on the Copperbelt.

Chapter Seven seeks to understand the relationship between the mining industry and the colonial state in Northern Rhodesia. To do this, it begins by developing an understanding of the colonial state before revisiting the role of the mining industry in territorialising British rule in the earliest days of the colonial enterprise. The chapter then goes on to explore the ways in which the colonial state sought, often ineffectually, to regulate the mining industry. When the Colonial Office attempted to reform mining regulation to increase its influence over the industry's activities and access a greater proportion of mineral revenues it repeatedly failed. This failure is traced to a combination of limited state capacity, the dependence of the colonial state on the mining industry and the growing political strength of white miners on the Copperbelt. The chapter argues that this failure, and the growing power of white supremacist policies advocated by white settlers, shaped the development of racial inequality in Northern Rhodesia. The result was the continued flow of minerals and mineral rents from the country and the inhibition of opportunities for African advancement either through education or employment. The chapter concludes by arguing that the co-constitutive nature of colonial rule and the

26 The Devonshire Agreement transferred administrative authority from the BSAC to the Colonial Office. It was signed as signed on October 1st 1923 with the actual transfer of power taking place on April 1st 1924.
mining industry was central to producing, entrenching and maintaining patterns of inequality which had long-term consequences for the development of Zambia.

*Chapter Eight* concludes the thesis. It revisits the questions originally posed above and illustrates how these have been answered in the chapters. The chapter then answers the research questions directly, drawing out themes presented across the chapters in this thesis. A step back is then taken to note the contributions made by the thesis to political ecology research, work on the development of the Copperbelt and the literature on power and rule. The following section briefly explores some of the contemporary parallels of processes and relations described in the thesis, before a moving to a closing word on the origins of injustice and inequality in colonial Zambia.
Chapter Two: The Scramble for Rhodesia

Introduction

“Tell them, tell these great ones of the Lala nation that we come from the
Great White Queen. We are fresh from conquering the Agoni.27 We have
three things to say. First, in this country there shall be no more war.
Secondly, in this country there shall be no more witchcraft. Thirdly, in this
country there shall be no more slavery. In regard to all other things, men shall
do as they have done, and as their fathers have done before them”
(Stephenson, 1937 p.62-3)

Thus was the arrival of British rule announced in 1901 on the Northern Rhodesian
Copperbelt. These words are recorded in the memoirs of one of the early pioneers of
British rule in Northern Rhodesia,28 John ‘Chirapula’ Stephenson.29 Stephenson was
accompanying Francis Jones who addressed the assembled African leaders through his
translator after a 2-month caravan journey with 120 porters from Fort Jameson, 400 miles
away (Stephenson, 1937).30 Stephenson and Jones’s arrival was part of a decades-long
process of claiming the African interior for the European powers; a piece in the pan-
European ‘scramble for Africa’ opening a vast territory for influence and investment.
Jones’ proclamation to the gathered leaders was, however, deeply misleading, most
pointedly on the future nature of British rule. In this country Africans would no longer do
as they had done and as their fathers had done before them. Within a generation, the
conditions of life would change dramatically. In this country mining would rule.

27 Ngoni
28 This thesis largely relies on the term ‘Northern Rhodesia’ to describe the territory of colonial Zambia
before 1964. This is done for reasons of simplicity and clarity (the territory held a few names and
administrative forms prior to amalgamation in 1911 – See footnotes 39 and 70) despite the colonial
baggage the term holds.
29 Stephenson is a colourful character of Zambian history with a long and diverse career. His many
contributions to Zambian history – including an autobiography, a biography, multiple papers on tribes on
the Copperbelt and a self-published weekly (then quarterly) gazette are taken up by Wright (1972).
30 The length of time taken is never clearly indicated as Stephenson prefers amusing anecdotes to factual
details but Denny puts the journey as from July to September (Denny, 1957).
Chapter Two

This chapter tells the story of how mining interests came to expand British rule into Northern Rhodesia. This expansion of rule was a key early step in the development of a mining industry in Northern Rhodesia. In claiming and securing sovereignty over the area, the British South Africa Company (BSAC), operating under a Royal Charter for the British government, created a space into which European capital could flow and take root. This chapter begins with Cecil Rhodes, the BSAC and a rapidly expanding global mining industry as the wider context of British colonial expansion into Africa. The chapter then explores the treaties collected and the process of military conquest which immediately followed the awarding of the Royal Charter to the BSAC. These treaties were aimed at securing domestic-political and international-legal control over the territory. The chapter finishes with a brief description of the extension of a network of administrative stations into Northern Rhodesia before ending by unpacking the problematic colonial project announced in Jones’ proclamation. This process of treaty collection and military conquest was an important early step in the process of generating a new regime of access to and control over natural resources in Northern Rhodesia. First, however, this chapter begins with Cecil Rhodes’ dreams of mineral wealth.

The mining industry, the BSAC and creation of Northern Rhodesia

The impetus for British expansion north of the Zambezi came from the heart of the mining industry. Cecil Rhodes was at the forefront of a number of mining groups in southern Africa interested in reputed mineral wealth north of the Limpopo (Hall, 1965).31 The narrative of King Solomon's mines and reports of early nineteenth-century explorers – Thomas Bain and Carl Mauch in particular – suggested the prevalence of vast mineral wealth north of the Limpopo (Gann, 1969, Krishnamurthy, 1972, Van Onselen, 1976).

These accounts convinced Rhodes and others that a ‘second Rand’ lay in the area. Rhodes

31 Cecil Rhodes is central to much writing on empire and his motives and quality of character have been subject to great debate (Butler, 1977). A leading mining financier and politician in South Africa, his vision of “a magnificent African empire which one day would stretch from Cape to Cairo” held charismatic power for many (see Figure 2) (Gann, 1969 p.57). Equally, his “refusal, or inability, to separate political from business activity” was highly divisive when he was alive and his involvement in the controversial Jameson Raid was bitterly condemned (Butler, 1977 p.275). For Lewis Gann he was “the greatest of all Victorian empire builders” (Gann, 1969 p.56). To others he is a small-minded, unscrupulous and petty "capitalist who utilized British imperialism for the benefit of private fortune" (Phimister, 1974b p.75).
worked to gather competing interests to advance a unified offer to claim and administrate the
territory for the British Crown. The BSAC would forestall other European claims to
southern central Africa, and establish a railway and telegraph northwards to the Zambezi
River (Gann, 1969). This offer, and a dynamic political situation in the region, rapidly
changed British policy in the area from "prevarication and temporisation" to forestall
other claims to the area, to active expansionism (Meebelo, 1971 p.16).\footnote{In 1886 Portugal declared sovereignity over coast-to-coast territory between what is now Angola and Mozambique publishing a map showing the extent of the claims (NA CO 700 Rhodesia and Central Africa, Carta da Africa Meridional Portugueza 1886) and pointing to diaries of Portuguese explorers centuries earlier (Hall, 1965). Further possible threats of Belgian, German, Portuguese and Transvaal encroachment also loomed (Rotberg, 1965b).}

Under the motto of “Justice, Commerce, Freedom” (see Figure 2 below) the BSAC was given the Royal
Charter to rule territories on behalf on the British Crown in October 1889 with a capital of
£1 million (Grot彼得 et al., 1998). The original charter awarded was (deliberately) quite
vague about the area to be covered,\footnote{There existed a private understanding that this wording left the option open for further expansion of the territory northwards which swiftly followed and expanded the territory to cover what is now Zambia (Hall, 1965).} defining it only as “the region of South Africa lying
immediately to the north of British Bechuanaland,\footnote{Botswana} and to the north and west of the
South African Republic, and to the west of the Portuguese Dominions\footnote{Mozambique}” (Gann, 1969
p.58). Having won the concession, the first order of business for the BSAC was rapidly
demonstrating ‘effective’ occupation.

The BSAC Charter is emblematic of the large-scale change in the relationship between
Africa and Europe in the late nineteenth-century. In the 25 years following the 1884-5
Berlin Conference, 10 million square miles of territory and 110 million people were
brought under European rule (Pakenham, 1991). Colonialism was becoming more
proactive and interventionist as increasingly competitive European powers shifted from a
‘client-state approach’ to one involving direct administration by colonial officials or
Chartered Companies (Gann, 1969). African exports such as ivory and rubber were
increasing in value on global markets in the late nineteenth-century, and new technologies
of larger and faster steam ships,\footnote{Ocean freight rates more than halved between 1870 and 1909 (Schmitz, 1979).} quinine\footnote{The advent of germ theory of disease transmission and mass-produced and distributed quinine saw the death rates of British troops in tropical Africa fall by 99\% between the middle and the end of the nineteenth-century. Prior to the introduction of quinine and identification of the mosquito vector, military
reach of European markets (Martin, 1983). Despite this growing interest and European penetration into the African inland, central southern Africa was never a priority on the British colonial agenda. As late as 1888 ‘Northern Zambesia’ was seen as "pestilential and useless to empire" (Meebelo, 1971 p.16). There were strong pressures for a modest approach to colonial expansion in the UK. Many argued that colonial expansion should not further burden the British Treasury; the colonies must pay for themselves (Berger, 1974). The dubious financial gains to be made in central southern Africa had to be balanced against the desire to preclude the advancement of other powers in the area. This balance was shifted by the BSAC offer of extension of control at no expense to the British taxpayer.

The BSAC charter is also emblematic of an industry in ascendance. The mining industry of the late nineteenth-century was experiencing a rapid rise in importance, both politically and financially. The speculation-ridden London share market triggered a series of mining booms of growing intensity in the late nineteenth-century (Ashmead, 1909, McCarty, 1961-2). These booms – in India (Mysore 1880-1), South Africa (Transvaal 1881, 1889, 1895), Western Australia (Coolgardie 1894-6) Canada (British Columbia 1896) and others – channelled around £1 billion into 9000 newly registered companies between 1880 and 1904 (Ashmead, 1909, Bridge and Frederiksen, forthcoming [2011], McCarty, 1961-2). The growing financial muscle of the industry translated into increasing political influence, as finance was one of the few sectors of the British economy booming at the time. Gold and diamond booms in South Africa in the decades leading up to the Charter had catapulted a young Cecil Rhodes to both wealth and political power (Ashmead, 1909, McCarty, 1961-2).

...occupation of the African interior could annually cost the lives of 25% of the stationed forces, mainly from disease. This dropped to around 2% by the early twentieth-century (Curtin, 1990).

As Gann points out, “the nomenclature of Northern Rhodesia is somewhat confused” (Gann, 1969 p.80 f.n.). Initially called ‘the British sphere north of the Zambesi’ until this was replaced by ‘Northern Zambesia’ or ‘Northern Zambezia’ as a region of a broader ‘Rhodesia’ (Gann, 1969 p.80 f.n). This confusion persisted until in 1897 ‘Northern Rhodesia’ was agreed by the BSAC and Foreign Office as a collective name for the two regions of North-Western Rhodesia and North-Eastern Rhodesia which were amalgamated in 1911 (Gann, 1969).

As one politician of the time quipped, much of Britain’s power rested on “its Navy and its credit” (Lord Selborne cited in Cain and Hopkins, 1980 p.5). Despite being the pre-eminent global power of the time, all was not well in the British economy. A commitment to free trade had taken its toll on domestic industry and the sector was in decline. New markets for British produce were coveted to avert further contraction (Cain and Hopkins, 1980). The decline of investment opportunities in increasingly saturated European markets made expansion into Africa an important avenue for future growth (Cain and Hopkins, 1980, Gann, 1969). The industrial sector in UK politics in the 1880s moved to "decisive support for the acquisition of new markets in Asia and Africa" (Cain and Hopkins, 1980 p.485).
Butler, 1977, Newbury, 2009). He was not alone. Having made fortunes in the rise of gold mining, a number of mining financiers were keen to secure privileged access to the next frontier boom (Hall, 1965). Booms in the periphery, however, were generating new regional centres of mining finance – such as South Africa (Katzenellenbogen, 1990). With a global mining industry keen to develop new areas and growing financial and political strength of the mining interests in South Africa, Rhodes was at the confluence of two powerful forces pushing for British imperial expansion into the African interior. So central is Rhodes and South African interests to the extension of British power into central Africa at this point that Martin goes as far as to describe the London government as “little more than a bystander” in the process (Martin, 1983 p.9).

![BSAC brochure map](image)

**Figure 2: BSAC brochure map**

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41 Source: (The British South Africa Company, 1936), the darker shaded areas are red in the original.
Chapter Two

The specificities of mining are important in understanding this drive into uncharted lands, namely, the importance of controlling new supplies, gaining monopolistic access, and the comparatively thin informational basis upon which investment was often made. As far as geological processes do not keep pace with rates of extraction, mines are a wasting asset – depletion of the resource remains inevitable (Turrell and Van Helten, 1987). Mining from the surface down means that frequently production costs rise as mining work advances (Bridge, 2000, Bunker, 2007, Turrell and Van Helten, 1987). These two factors make new sources of supply a continual threat to producers, either by precluding access to future resources or by introducing cheaper supplies of minerals. Finding and securing access to new sources of supply before others is therefore crucial to mining companies’ future success (Fine, 1994). In many of the speculative booms of the late nineteenth-century, being among the first to a new field was the key to financial success. As far as mineral resources cannot be moved, the economic activity of mining is spatially fixed (Fine, 1994). This means that commercial success depends on securing exclusive access to a piece of land – a monopoly over a specific mineral body – before others do the same and bar future profitability. The mining booms of the late nineteenth-century took the form of claims rushes as groups sought to gain exclusive access to parcels of land and the minerals which they may contain. The development of the mining industry, then, is characterized by this tension between mobility and fixity, the expansive search for new sources to replace depleting assets and the stable exclusive access that capitalised mineral extraction requires (Bridge, forthcoming [2011]). Compared to other sectors where assets were visible and tangible, beginning mining was something of a gamble. With the subsurface hidden from view, it was very difficult to predict the extent of deposits with confidence. Exploration geology was in its infancy at this stage; most discoveries were through spotting surface outcrops and digging to see if the deposit continued at depth (Braun, 2000, Brooks, 1944a). Many booms were begun on the basis of surface mineral samples (or even just accounts thereof) rather than geological maps or drilling cores proving deposits at depth. This nascent science, the speculative nature of mining finance and the importance of being the first to secure rights to mineral rich territory meant that the reports of a number of travellers were considered sufficient basis to float a £1 million enterprise. It also made staking a claim to the territory before others imperative. Claims rushes, however, depend on the absence of competing claims – such as from local peoples or other European powers.
Exploration and treaties

Upon winning the Charter, the first order of business for the BSAC was to claim the land and its peoples in the name of the British Crown. The largest threat to this claim was competing European powers and forestalling their advance meant demonstrating ‘effective’ occupation of Northern and Southern Rhodesia agreed by the people who lived there. To this end, concluding treaties pledging exclusive allegiance to the British and granting commercial access was of paramount importance for the BSAC. The first focus for Rhodes and the BSAC was the mineral riches which reputedly lay south of the Zambezi and to the north in Katanga (southern Congo). Northern Rhodesia, at this stage, was more of an afterthought – of importance primarily because it lay between these two mineral fields. The immediate target was Bulawayo in Southern Rhodesia, the capital of the powerful Ndebele nation and, it was hoped, the centre of a new gold rush. After the arrival of the ‘pioneer column’ in Southern Rhodesia in 1890, parties were dispatched to Northern Rhodesia to secure treaties with local leaders. Strengthening British claims further north was still important and Rhodes harboured hopes of staking a British claim to Katanga, despite the British government’s recognition of Belgian sovereignty over the area (Gann, 1969). Rhodes dispatched multiple parties into the territory of Northern Rhodesia to gather treaties. These treaties aimed to forestall competing imperial ambitions in the region, and create a stable claim to access land and minerals upon which commercial activity could develop.

The treaties were largely commercial in character with much of the treaty making concluded on the basis of mutual misunderstanding and misleading. While there was an "unquenchable thirst for European goods” offered by the treaty makers, it seems unlikely that African leaders realised, or took seriously the notion that, they were signing away

42 This was a consequence of the Berlin Treaty which held that occupation had to be ‘effective’ in order to be internationally legitimate (Gann, 1969). This included the need for documentary evidence – treaties with indigenous leaders – to back up claims. The Berlin Conference of 1884-5 mainly focussed on the Congo Basin but also contained clauses on a commitment to freedom of religion and suppression of the slave trade, and included a provision that occupying power had an obligation “watch over the preservation of the native tribes and to care for the improvement of their material and moral well-being” (The Berlin Conference, 2003 p.31).
43 Though it was important to forestall other claims as the possibility of undiscovered minerals or other natural resources remained.
44 Samples brought back in 1884 by Paul Reichard had proved the presence of copper deposits – a mineral currently enjoying very high international prices – see Figure 4 on page 90 (Gann, 1955, Hall, 1965).
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land and sub-soil rights in perpetuity (Krishnamurthy, 1972, Meebelo, 1971 p.30). In most cases this lay beyond their remit (Rotberg, 1971). Indeed, when a local trader George Middleton explained the full contents of his treaty with the BSAC to Lewanika, the Lozi leader – perhaps the most significant treaty concluded at this point – he quickly sought to withdraw from the treaty claiming that he had been mislead about its contents (Hall, 1965, Meebelo, 1971). For African leaders, these treaties included clauses to recognise the British flag and place themselves ‘irrevocably’ and exclusively under the protection the British and grant all mineral and commercial rights to the BSAC (Faber, 1971, Krishnamurthy, 1972). For the BSAC they included clauses to provide public works and utilities, take action to enact and protect the rights they had been granted, a payment on signing the treaty, an annual payment or percentage of mineral and commercial royalties thereafter and an offer of military protection. In many cases the promises made by the British were hollow and, beyond the goods given in exchange for the treaty, they had very little immediate relevance for Africans; with no military forces to hand, promises to stop slave raids and offer protection from enemies “meant nothing at the time” (Gann, 1969 p.63).

The process of treaty collection was near farcical. Aiming to sign treaties which would trump Belgian claims to the Katanga coppers, Rhodes secretly dispatched British administrator Alfred Sharpe and explorer Joseph Thomson in 1890 (Gann, 1969). Their mission was to conclude treaties with leaders in the area with the ultimate aim of securing a treaty with Msiri of the Katanga region. In this era of fierce international diplomatic and commercial competition, the missions of Sharpe and Thomson were so secret that they were a surprise to each other when they met on the steamer on Lake Nyassa (Rotberg, 1965).

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45 Lewanika, fearing the newly armed Ndebele to the south and, encouraged by a local French missionary Francois Coillard, had petitioned Queen Victoria for protection (Hall, 1965, Meebelo, 1971). After protracted negotiations with Frank Lochner, in which Lochner went to some lengths to appear as if he was an emissary of Queen Victoria, a treaty was signed offering £2000 a year in return for British allegiance and protection and exclusive mineral and trading rights (Meebelo, 1971, Rotberg, 1965b). This treaty was key to stabilising BSAC claims to the area and the minerals of the Copperbelt.

46 RH MSS. Brit. Emp. s.412 Papers of the Central Mining and Investment Corporation Limited 1/1 Certificate of Claim 25/9/1893

47 This was to be paid in cash or goods to the equivalent value and averaged around £25 (RH MSS. Brit. Emp. s.412 Papers of the Central Mining and Investment Corporation Limited 1/1 Certificate of Claim 25/9/1893). When the Certificate of Claims was issued in September 1893 this was standardised to 1% of royalties per annum (RH MSS. Brit. Emp. s.412 Papers of the Central Mining and Investment Corporation Limited 1/1 Commutation of 1% Royalty, letters). After these initial payments on signing the treaties, the annual sums were almost never paid.
1971). Confused as to why their missions had been duplicated, they agreed to take separate routes to the territory of Msiri so as to have the best chance of success and gather more treaties (Rotberg, 1971, p.277). Sharpe took the more northerly route where he gathered six treaties but failed to sign agreements with the two more powerful groups in the area, the Ngoni and the Bemba (Macpherson, 1981). Of the latter, he acquired the signature of Nsama, leader of a nearby group – the Tabwa – falsely claiming him to be the Bemba paramount Chief (Hall, 1965). Nsama, despite having accepted British ‘protection’, was killed the year after signing this by a nearby Swahili group (Langworthy, 1972). Thomson took the southerly route concluding 14 treaties along the way to Msiri, but failing to make it all the way as his expedition was beset by difficulties, most notably a smallpox outbreak (Thomson, 1893).48 His expedition thus left a trail of disease behind it with many villages refusing entry to the party and a third of the 145 porters dying from the disease (Rotberg, 1971).49 Thomson then made a brief dash to Msiri before cutting his expedition short when he contracted what appears to be bilharzias, being carried the latter half of the expedition in a hammock (Faber, 1971, Rotberg, 1971).50 Sharpe failed to reach agreement with Msiri after numerous visits and Thomson’s rushed treaty never gained widespread recognition (Faber, 1971, Thomson, 1893).51 Instead, the Belgian flag was raised over Katanga after a Belgian expedition headed by the British Captain Stairs killed Msiri in 1891 (Hall, 1965). The result of this process, unsurprisingly, was a somewhat shaky legal basis for British annexation of the territory.

With both Thomson and Sharpe “amazingly unaware of the peoples and places through which [they] travelled”, the resulting treaties were equally farcical (Rotberg, 1971, p.279). The claims in the treaties bore little relation to the political landscape in which they were concluded. The agents of the BSAC for their part “imagined … there was a patchwork of stationary kingdoms spread about the region, each with a Chief powerful enough to conclude binding agreements over his country” (Gann, 1969 p.62). Rather than an area in which cultural identity was flexible, groups were intermixed, fissile, mobile,
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and based as much on kinship as geographical location (Lonsdale, 1977, Meebelo, 1971). The result was a “ludicrous confusion” of treaties with numerous places and peoples who appeared to have been entirely fictional, the result of poor translation or pure ignorance (Hall, 1965 p.84, Krishnamurthy, 1972, Rotberg, 1971). In other cases, names of signatories were not known and openly admitted as such on the treaties. Thomson had taken it upon himself to amend the wording of the treaties as he travelled to the detriment of their legal clarity (Rotberg, 1971). Thus, “even by the loose standards of African treaty-making, these documents left much to be desired” (Rotberg, 1971, p.283), with Stephenson later describing the treaties as “not worth the paper they were written on” (Krishnamurthy, 1972, Stephenson, 1937 p.26). In private, members of the BSAC and Foreign Office were well aware of the dubious nature of the treaties signed (Krishnamurthy, 1972). Wilson Fox later wrote to the then administrator of North-Eastern Rhodesia in 1904 that, “in North-Eastern Rhodesia we are founded upon a very large number of contracts made with personages whose existence's today are somewhat mythical” (Fox to Codrington cited in Hall, 1965 p.85).

Instead, as Gann argues, “the real significance of the documents lay in the field of financial and international, not tribal politics” (Gann, 1969 p.63). Ignoring doubts about the legality, authenticity and validity of the treaties signed, and under pressure from Cecil Rhodes, Harry Johnston issued a Certificate of Claims officially recognising the treaties in 1893 (Krishnamurthy, 1972, Rotberg, 1971). He even stretched them further – to cover an area greater than that claimed in the original treaties and affirming that they all included mineral rights (which they did not), all without actually having the authority to

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52 Over decades and centuries groups had moved about, split and merged to create a diffuse and inter-linked array of settlements in "which segments of descent groups were threaded between a number of settlements, providing a dominant clan, or group of clans, in one area juniors or clients in another" (Lonsdale, 1977 p.847).

53 This may not be entirely down to the agents of the BSAC as Africans were likely equally willing to mislead the strangers or overstate their rank and claims in the hope of extracting more from the European agents (Meebelo, 1971).

54 RH MSS. Brit. Emp. s.412 Papers of the Central Mining and Investment Corporation Limited 1/1 Certificate of Claim 25/9/1893

55 Harry Johnston was a British traveller and colonial administrator who acted as British Consul in Mozambique from 1899-95 where he signed numerous treaties with local leaders in Malawi and then administered North-Eastern Rhodesia on behalf of the BSAC and Malawi (Gann, 1969, Grotpeter et al., 1998).

56 RH MSS. Brit. Emp. s.412 Papers of the Central Mining and Investment Corporation Limited 1/1 Certificate of Claim 25/9/1893
do so over this territory (Krishnamurthy, 1972, Rothenberg, 1971). This was of little consequence at the time as their intended audience was international and contemporary. What was needed was a strengthened claim by the British for the areas on central southern Africa and these flimsy treaties made this practically irrefutable. This legal security allowed for the extension and deepening of British engagement in the area with the establishment of formal administration (also not covered in the treaties signed).

Perhaps ironically, none of these treaties covered the areas to be mined in coming years of the Copperbelt and the Broken Hill mine near Kabwe (Gann, 1969, Krishnamurthy, 1972). From the treaties gathered, Thomson concluded that inalienable rights to the majority of what became North-Eastern Rhodesia had been secured. The area covered by Thomson’s treaties, however, was somewhat unclear. As a White Paper later investigating the issue in 1964 pointed out out of the treaties:

“There is … a striking range in the degree of geographical indication which is attempted. In eight of the fourteen treaties the area is designated no more precisely than by the name of the tribe or sub-tribe over which the signing chief purports to rule. There are three instances in which rivers and watersheds are also mentioned and there are a further three in which reference is made to points of longitude and latitude” (cited in Faber, 1971, p.136).

Due to the threat of mutiny from his small-pox ridden carriers, Thomson had only briefly travelled through the Copperbelt area in a last ditch attempt to get a treaty with Msiri – signing no agreements along the way – before turning back (Faber, 1971). Aware of this geographical hole in the treaties, in 1905 BSAC officials re-drew the boundary between North-Eastern Rhodesia and North-Western Rhodesia to include the Copperbelt within the boundaries of Lewanika’s territory (Hall, 1965, Slinn, 1971). Stephenson, one of the first BSAC officials on the Copperbelt, recounts that no mention of any treaty was ever made at any period in the early establishment of British rule in the area (Faber, 1971, Stephenson, 1937, Wright, 1972). Despite the ‘extended Lewanika territory’ claim being

57 In a number of technical and legal respects, this Certificate of Claim was a complete sham. For example, it could only be validated by approval from the Foreign Office which was not given (Krishnamurthy, 1972).

58 Though they did cover the area of the first boom in Northern Rhodesia near Mumbwa discussed in the next chapter.
widely seen as false and being repeatedly contested over the years, the BSAC managed to hold on to mineral rights until the eve of independence (Slinn, 1971).

Conquest

BSAC presence in the African interior was not universally welcomed. The majority of the more powerful groups in the region refused to sign treaties; and for those engaged in slavery and other forms of raiding, the British were a threat to their way of life. The BSAC, keen to begin commercial activity in the area, required political stability and military dominance. From the signing of the Royal Charter to Stephenson and Jones’s arrival on the Copperbelt, the British engaged in a systematic process of extending rule through securing military dominance. At first this process faltered as colonisation proved costly, with the Ndebele resisting military subjugation in Southern Rhodesia and promises to extend the telegraph and railway networks northwards soaking up precious capital (Meebelo, 1971). Furthermore, the hoped for ‘second Rand’, intended to fund colonial expansion, failed to rapidly materialise (Van Onselen, 1976). The British in Northern Rhodesia were not well resourced, they were, however, comparatively well organised. Despite overwhelmingly superior military technology, with British resources stretched thin “there were … some African societies or peoples whom early colonial administrators could not easily afford to fight” (Ranger, 1969 p.297). With a shortage of financial resources with which to fund sustained presence or decisive military numbers, the advance of the imperial frontier was "a piecemeal process" with British forces forced to pick and choose their battles (Meebelo, 1971 p.19, Ranger, 1969).

The beginnings of BSAC administration in Northern Rhodesia were hardly auspicious. The first administrative station in the territory, established in 1891, lasted one year and consisted of a single man, Captain Richard Crawshay, equipped with “a Union Jack, the friendship of Chief Puta of the Bwile, and little else” (Gann, 1969, Hall, 1965 p.88). The second, a year later, lasted only a short time before its two intrepid administrators succumbed to blackwater fever and died (Gann, 1969). In the same year Fort Roseberry was established by Sharpe further south near the border with Nyasaland and marked on

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59 The British forces had breech-loading rifles (which could be reloaded from a prone position and misfired infrequently), portable small-scale artillery, and the Maxim Gun (capable of firing 9 rounds a second). Against these were ranged spears, bows and arrows and muskets which had a range of 80 metres, took over a minute to reload and misfired 30% of the time (Iliffe, 1995).
maps released at the time. However, its presence was entirely fictitious as the BSAC revealed in 1896 and had been conjured solely to impress upon Belgium the weight of the British presence in the area (Hall, 1965). From 1893, the presence in North-Eastern Rhodesia became a little more substantial with Hugh Marshall establishing a base on the Tanganyika plateau (again, the far north) equipped with a contingent of 5 soldiers in addition to the requisite collection of revenue and postage stamps (Gann, 1969). In the years that followed, the British presence slowly increased, and with it the military resources at the administrators disposal.

For political and ecological reasons, the process of conquest in Northern Rhodesia met with less resistance than in many other parts of Africa. Initially, Europeans did not appear as enemies of the Africans in the territory – largely as a result of missionary and early trader experiences and many Africans thinking the pale newcomers to be a weaker race (Meebelo, 1971, Rotberg, 1965b). Changes in the political landscape in the region had seen the rise of a number of ‘conquest states’, such as the Bemba and Ngoni (Isaacman and Isaacman, 1977 p.35). The activities of these expansionist states generated political fragmentation and weakened the capacity to resist of many groups and “affected the scale and number of polities within this region, and on balance facilitated the European expansion” (Isaacman and Isaacman, 1977 p.39). Secondly, ecological factors played a role. The final decades of the nineteenth-century saw a series of environmental disasters sweep Northern Rhodesia. The 1890s saw the arrival of flesh-burrowing ‘sand jiggers’, periods of drought, swarms of locusts destroy crops and a rinderpest epizootic decimating

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60 Aside from a growing “nineteenth-century European commercial penetration of central Africa” which is discussed later, there are two key regional factors at work here: (1) The rise of slavery – as Manning argues, "by the nineteenth-century, much of the continent was militarized; great kingdoms and powerful warlords rose and fell, their fate linked to fluctuations in the slave trade." (Manning, 1990 p.147). Indeed, outside of the relative peace and prosperity of the Lozi (Barotse) kingdom in the south, the destabilising influence of slavery produced widespread “social and political disorder” in Zambia (Langworthy, 1972 p.118). In pre-colonial times, the Bemba had enjoyed ascendancy, raiding neighbouring villages for slaves and ivory. Having intensified since the middle of the nineteenth-century, slaving had a profoundly destabilising effect on the pre-Northern Rhodesia. (2) Recent changes in military technology in the region. Further south, the early nineteenth-century a powerful Zulu kingdom had risen based on advances in military tactics (Vail, 1983). This ascendancy created waves across southern Africa as groups fled the Zulus taking with them the military organisation and tactics they copied from their opponents. These groups (including the Ndebele and Ngoni) raided as they moved in the following decades, precipitating a general militarisation of the region and increased insecurity. Sharpe and Thomson travelled through a landscape of fortified villages and – with the exception of the Ngoni, Lozi and Bemba – retreating boundaries as groups gathered for protection (Langworthy, 1972). Africans remember the times with trepidation as venturing too far from the village was a dangerous act and they feared to stay alone or too long in their fields for fear of capture by slavers (Vail, 1983).
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herds and game (Grey, 1901, Grotpeter et al., 1998, Mack, 1970, Vail, 1983).\textsuperscript{61} All this combined to leave the people of Northern Rhodesia very susceptible to the smallpox epidemic and famines which hit the area in the 1890s (Vail, 1983).\textsuperscript{62} Weakened politically and ecologically, the BSAC arrived to find conditions largely favourable to the imposition of British rule. For smaller African groups, Pax Britannica was a welcome change (Meebelo, 1971). New patrons in the area were welcome, as in Kenya "it was more apparent to them [the British] than it was to Africans that they had also come as conquerors" (Lonsdale and Berman, 1979 p.496).

There was no single universal response to British colonialism. Instead, a range of dynamic and changing factors shaped how diverse groups responded to the arrival of BSAC rule including the nature and prosperity of their economic life, their relations with other groups and their previous experience of alien influences\textsuperscript{63} (Lonsdale, 1977, Meebelo, 1971). For many smaller and weaker groups, the demonstration of force could be enough to encourage African leaders to acquiesce and negotiate.\textsuperscript{64} The arrival of a new power in the region also opened up a new avenue for potential advancement and an opportunity to disrupt previous patron-client relationships. In North-Eastern Rhodesia in particular, raiding by the Bemba and Ngoni led many smaller groups into the arms of the British.\textsuperscript{65} For the two strongest groups in North-Eastern Rhodesia – the Ngoni and the Bemba – British rule was less readily accepted. For a state largely dependent on ivory and slaves, the encroachment of British influence was a grave threat for the Bemba. While avoiding direct conflict for as long as possible, Bemba leaders banned Europeans from establishing themselves on their lands. This changed when the British seized the

\textsuperscript{61} NA CO 799/11 Northern Rhodesia Annual Departmental Reports 1932, Native Affairs

\textsuperscript{62} This was compounded by raiding which increased population density when groups gathered together for protection. Apart from easing the spread of disease, these increased densities placed greater pressure on the lands immediately surrounding settlements for agriculture. The fertility of these intensely farmed soils declined, lowering yields and weakening those who lived off them (Vail, 1983).

\textsuperscript{63} This thesis only offers a broad-brush outline of the varying encounters between British colonial expansion and groups within Northern Rhodesia. For more detailed accounts of individual groups engagement with colonial forces see Fields (1982), Macpherson (1981), Meebelo (1971) and Siegel, (1989).

\textsuperscript{64} Meebelo recounts the story of Sikazwe welcoming the arrival for the new resident Marshall with a show of force by his warriors. Marshall responded by having his police stage a mock battle. The demonstration of British firepower quickly eroded Sikazwe’s military bluster (Meebelo, 1971).

\textsuperscript{65} Meebelo argues that, "the apparent readiness with which other tribes acquiesced to European rule was thus a revulsion against the Bemba" (Meebelo, 1971 p.28). A situation which parallels elsewhere in Africa where the closest, earliest allies of British were those "under grave external threat" (Lonsdale, 1977 p.860).
opportunity provided by Paramount Chitimkulu’s death in 1899 to attack the remaining Bemba leaders who refused to acquiesce. The defeat of the Bemba came about not so much as a result of decisive military superiority of the British – the British had avoided direct confrontation with this powerful group as much as the Bemba had avoided direct confrontation with the British\textsuperscript{66} – rather that the different Bemba leaders “failed to maintain any sort of cohesion in the face of advancing Europeans” in 1899, or aid their Swahili allies years earlier when it might have been decisive (Gann, 1969 p.83). Final defeat came when British administrators gathered three separate militia detachments from across the territory into a single force and systematically attacked the strongholds of the scattered remaining Bemba groups that refused to recognise British supremacy (Meebelo, 1971).

For the Ngoni, the assertion of British rule was perhaps more brutal. Despite pleas for no direct conflict, an expressed willingness to take the British flag and an attempt to flee across the border to Nyasaland, Mpezeni of the Ngoni was intentionally drawn into conflict with the BSAC (Hall, 1965). While the Ngoni across the border in Nyasaland managed to accept British rule without bloodshed, those in Charterland faced a violent transition to British rule.\textsuperscript{67} Using the pretext of a prospecting party claiming it was in peril, the BSAC despatched a military force to attack the Ngoni in 1899. By the time the BSAC attacked, Mpezeni was all but isolated in the region and responded to the line advancing on his capital with force. The BSAC party was vastly outnumbered, but Ngoni’s military tactics – previously so effective against African opponents – made them easy targets for the BSAC’s modern weaponry and the result was a rout (Gann, 1969).\textsuperscript{68} The believed presence of gold-bearing minerals and the absence of missionaries to act as intermediaries spelled doom for Mpezeni’s kingdom as the BSAC refused to tolerate alternative strong political structures in Northern Rhodesia (Gann, 1969). The defeat of

\textsuperscript{66} Ranger cites one administrator who, in 1897, advised caution in approaching and not inciting the Bemba as the BSAC “can’t afford to fight the whole Awemba nation” (Forbes cited in Ranger, 1969 p.297).

\textsuperscript{67} In the mid-1880s Mpezeni developed a friendship with the trader Carl Weisse and granted him an extensive concession within his territory. Weisse sold this concession on in 1895 to the North Charterland Company whom he had convinced that the territory contained gold (Grotzetter et al., 1998). The North Charterland Company were looking for quick results and announced a £15,000 reward for the prospector who discovered the first payable gold deposit in the concession, antagonising the Ngoni (Hall, 1965).

\textsuperscript{68} The campaign was a profitable one for the BSAC as thousands of Ngoni cattle were captured following their defeat. Gann claims that the majority of these were subsequently returned while Hall points to a census of cattle in 1898 and 1900 showing a 10,000 drop in herd size (Gann, 1969, Hall, 1965).
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Mpezeni, after the conquest of the Bemba, signalled the beginning of a new era of British rule in the region. The BSAC then began the process of colonial administration, establishing a network of administrative stations across the territory.

Pax Britannica – early British rule in Northern Rhodesia

The first two decades of Chartered rule in Northern Rhodesia saw a slowly increasing density of administrative presence as a network of roads and lonely administrative and police stations extended across the country. With one eye on demonstrating effective occupation, and with few obvious locations along navigable waterways, the majority of early administrative centres were built on international borders (Fetter, 1983). From these early outposts, a network of Bomas\textsuperscript{69} was extended inland.\textsuperscript{70} Caravans with administrators, a small troop of native police and up to 100 porters would be formed and sent out to allotted areas where they would construct a rudimentary station of a few huts (Gann, 1969, Stephenson, 1937). These stations usually had two European personnel, a District Officer who would often double as the magistrate and a Native Commissioner who would double as an assistant magistrate. Once the BSAC flag was raised, the new District Officer would receive a deputation of local leaders and declare Company rule.

British intervention amongst the newly conquered territories was initially modest. The same financial constraints which slowed the imposition of military force in Northern Rhodesia curtailed the expansion of administrative offices and the military and financial resources the new administrators’ disposal. With a massive territory to cover, and a largely dispersed population, geography posed a serious obstacle to the extension of

\textsuperscript{69} The common (East) African term in the colonial period for government offices or centres (Grotpeter et al., 1998).

\textsuperscript{70} In 1894 ‘Northern Zambesia’ split into North-Western Rhodesia and North-Eastern Rhodesia to ease administration of the area. The geography of the country meant that access to North-Western Rhodesia was easiest from the south and North-Eastern Rhodesia easiest from the east (Gann, 1969). At the same time North-Eastern Rhodesia was officially separated from Nyasaland in 1894 with the latter becoming a Colonial Office protectorate and the entire area being run by Harry Johnston. Johnston received an annual £10,000 subsidy from the BSAC to administrate North-Eastern Rhodesia and maintain a police force (Gann, 1969). In 1899 Robert Codrington took over for the BSAC with 16 administrative stations established in the period up to 1900 (Fetter, 1983). In North-Western Rhodesia, the demands for establishing a network of administrative stations were limited as the BSAC chose, for reasons of economy, to “perpetuate the myth that the Lozi were in fact masters of all North-Western Rhodesia” (a myth repeatedly deployed in years to come) (Fetter, 1983 p.85). The BSAC’s administrator Robert Coryndon arrived in 1897 and established two governmental stations by 1900 – the headquarters at Kalomo near the border with Southern Rhodesia, and another at Mongu near the summer and winter capitals of the Lozi (Fetter, 1983).
power.\textsuperscript{71} Gann argues that the lack of military backing meant early administrators “had to use a great deal of circumspection and rely on the help of local Chiefs” (Gann, 1969 p.98). A sentiment echoed by Hudson who saw their role as to “to remove gradually the more uncivilised parts of their customary administration.”\textsuperscript{72} To begin with, intervention was limited to the area immediately adjacent to the Boma and then extended to surrounding areas. This was often done through a series of series of district tours which could range in frequency from every few months to every two years (Rotberg, 1965b). Retaining much of the character of conquest, early British ‘administration’ in Northern Rhodesia was largely one "of successive military expeditions" from lonely outposts dotted across the vast bush (Rotberg, 1965b, p.20).

This early model of administration was “to be of a negative rather than positive kind”; a government which curtailed undesirable practices such as the slavery and ivory trade and imposed the rule of law, rather than one which intervened directly to promote certain forms of behaviour (Gann, 1969 p.67). BSAC officials were well aware that they had no mandate to intervene in the affairs of Africans; their original treaties covered no such rights, being largely commercial in intent.\textsuperscript{73} It was this liberal negative model of government that Jones declared on the Copperbelt in 1904. His proclamation set out early terms and targets of intervention for the BSAC and is worth examining in detail for it is revealing in both what it does and does not say:

“We come from the Great White Queen. We are fresh from conquering the Agoni.”

The British had arrived as conquerors and had defeated the previous regional military power. The implication for others who sought to resist was clear.

“First, in this country there shall be no more war.”

For many Africans, the establishment of Pax Britannica is remembered fondly as it brought with it greater safety and the end of raiding and "endemic feuds among the Chiefs" (Macpherson, 1981, Meebelo, 1971 p.46). The British were also demanding a

\textsuperscript{71} By way of illustration, the population of Northern Rhodesia was roughly equal to that of bordering Malawi but its area was over 6 times larger and the average district had \(\frac{1}{3}\) of the population: 10,000, to Malawi’s 35,000 (Fetter, 1983).

\textsuperscript{72} RH Mss Afr. S.2111 Hudson Interview with Kirk-Greene 1961 p.6

\textsuperscript{73} NA FO 881/7046 AFRICA: Memo. Northern Rhodesia. Administration (Mr. H. Farnall) 1898
monopoly over the legitimate use of force. The state-making agenda here is clear. Seeking to maintain and entrench their military dominance, the British worked to gain unchallenged control over military resources controlling gunpowder and guns\textsuperscript{74} and forcibly suppressing intertribal conflict (Gann, 1969). In these actions, and a growing control over international borders, the BSAC secured a monopoly over treaty making and dominated external relations of the tribes (Lonsdale, 1977); political life for Africans in Northern Rhodesia came to take place within the container of British rule. A key aim of this military dominance was also to ensure the safety of European peoples and property – the foundation of commercial activity.

\textit{“Secondly, in this country there shall be no more witchcraft.”} This was also likely a welcome notion for those who heard it (Meebelo, 1971). However, what was equally being demanded was a new rationality and ‘civilisation’. A new moral and legal basis for the ordering of social life was being telegraphed. ‘Witchcraft’ was in many ways a threat to British rule, being seen as violent and ‘anti-rational’ and retaining a powerful moral – and indeed political – force. It was also almost entirely outside of the control of Europeans and was an early target for legislation (Grotpeter et al., 1998). While decried as insidious ‘mental slavery’, alternative forms of religious expression remained key ways in which Africans symbolically and materially contested the loss of control that British colonialism brought (Fields, 1985, Melland, 1932, Schumaker, 2008).

\textit{“Thirdly, in this country there shall be no more slavery.”} This was frequently unpopular as African leaders were often sustained through the unwaged labour of villagers. Abolition of slavery was a key moral lodestone for British imperialism, its benevolent nature demonstrated through its clamping down on slavery. It was also a feature of international treaties and an obligation for colonial powers (The Berlin Conference, 2003). However, this can also be seen as a restructuring of labour and property relations – the thin end of the wedge of constraining certain forms of economic practice and notions of property. Slavery was but one form of property and economic relation which BSAC rule targeted for control and suppression. The rules of what does

\textsuperscript{74} Curbs on guns and gunpowder were obligations for colonial powers under the Brussels treaty (Gann, 1969, The Berlin Conference, 2003).
and does not constitute legitimate forms of property and economic practice were to be comprehensively re-ordered in the coming decades.

“In regard to all other things, men shall do as they have done, and as their fathers have done before them.”

This final sentence is equally revealing of the project of colonialism and its problematic nature. All the demands were couched in largely negative terms, despite being highly proactive and potentially disruptive aims. All this dynamic change should take place within an overall framework of preservation, of social stability. Any incompatibility of these goals of restructuring property and economic relations and spreading new forms of rationality, and goals of social preservation remained unacknowledged and unspoken. This fundamental contradiction between dynamic change and social stability came to be a defining feature of British colonialism in Northern Rhodesia.

Jones’ statement then, rather neatly encapsulates the three prongs of colonial intrusion into Northern Rhodesia: politics (the recognition of British supremacy and the legitimate use of force in this instance), rationality and discourse (at this stage, the abolition of witchcraft, but soon a much larger project of encouraging rational action) and economic practice (a restructuring of economic relations and property practices along capitalist lines). These three prongs are, naturally, highly inter-linked and all three constitute the driving forces in shaping changing regimes of access to and control over natural resources. The next two chapters explore their penetration into Northern Rhodesia all within the framework of ‘preservation’.

Jones’ statement is, perhaps unsurprisingly for a new ruler announcing the terms of their rule to a conquered peoples, also duplicitous. The BSAC was under instructions from the Colonial Office to not interfere too directly in African life and thus emphasised the continuity of ways of life for Africans under British rule. The ‘preservation’ of Africans and their way of life was a universal obligation on European colonial powers enshrined in the Berlin treaty and later amendments in Brussels (The Berlin Conference, 2003). However, as British military dominance grew, so did colonial demands on Africans and so did expectations of compliance with these demands. British control over Northern Rhodesia was not a single event with a clear definite ending point, it was a process which
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continued and changed over time; colonisation was not a moment but a movement (Lonsdale, 1977). The three demands of no war, no witchcraft and no slavery were quickly amended to include the payment of an annual hut tax. The imposition of this tax was pivotal in changing the relationship between the British administrators and their African subjects and saw the creation of a coercive state in Northern Rhodesia. As Africans were reluctant to become economic subjects, the BSAC used violence to spur them into the cash economy. Chapter Four explores this process.

Conclusion

This chapter has explored the arrival of British colonialism in what became Northern Rhodesia. It has charted the centrality of the politically and financially ascendant mining industry in facilitating and then carrying out this annexation. The extension of control over land has been placed in the context of mining’s paradoxically fixed and mobile character. Early conquest was a two-stage process, first requiring international political recognition of ‘effective’ occupation and notional local consent and then the imposition of military dominance. The treaties collected to demonstrate consent were hollow and ‘effective occupation’ very loosely interpreted. The audiences for both of these were international. The imposition of military dominance proved more challenging than had been originally anticipated. Modestly resourced BSAC administrators were frequently forced to rely on coordinated tactical battles to extend their authority over a number of years. As military dominance grew, so too did the agenda of rule and scope of intervention. Early colonial government however, focussed on gaining basic military security in the territory to pave the way for commercial investment. The chapter concluded by exploring this early colonial project through the words of Francis Jones. Here, the articulated desire for laissez-faire rule is counterposed to the highly proactive and potentially disruptive aims of British colonialism in Northern Rhodesia. The legacy of this period of conquest – the thin presence of British rule and its reliance on violence – is taken up in the following chapters as it had important consequences for the development of capitalist enterprise and mineral extraction in later decades.

Dreams of mineral wealth had driven European colonial expansion to the deepest African interior. During the first 10 years of the Royal Charter, British presence in Northern Rhodesia moved from shaky beginnings as just another power in Northern Rhodesia to be
the power in the country. Northern Rhodesia entered the twentieth-century clearly under
the military control of the British. Formal control was established and had been
internationally recognised. The territory saw the frail shoots of a nascent colonial state
with a handful of administrative stations. With this nascent administration, the
relationship between Northern Rhodesia and its peoples and Europe changed
dramatically. The stage was set for an ongoing colonial project of deriving wealth from
the Northern Rhodesian landscape. The BSAC annexation of Northern Rhodesia had
opened a vast new territory for European investment. Their military dominance provided
political and physical security for investment. The success of the Charter endeavour lay in
inserting Africans and African natures into global commodity markets. A project which
was perhaps more complex and challenging than Rhodes and his allies imagined at the
time.
Chapter Three: Creating an extractive economy

Introduction

Northern Rhodesia entered the twentieth-century with the military might of British imperialist forces dominant and a smattering of European officials. The assumption of military control was the thin end of the wedge; the first step in an ongoing process of conquest whose "scope … widened and deepened over time" (Lonsdale, 1977 p.855). Military supremacy paved the way for deeper and more onerous forms of intervention as "economic penetration became possible for the first time on a large scale" (Gann, 1969 p.92). After the missionaries, administrators and militias, mineral prospectors were some of the first Europeans to arrive in Northern Rhodesia. As soon as the pioneer column arrived in Southern Rhodesia, prospectors began to explore the region for mineral wealth. The forefront of a massive land-grab, these 'adventurers' were the cutting edge of European capitalist penetration into central southern Africa. They brought with them dreams of fortune, the demands of European commodity markets, and a set of economic and material practices which would transform socio-environmental relations in Northern Rhodesia. Backed by the military dominance of BSAC forces, these early entrepreneurs failed more than they succeeded. In the ruins of their efforts, however, they laid the foundations of future success.

The economic success of the BSAC's project rested on generating a space for capitalist economic activity. This was a space in which surplus would accrue to European-owned export-oriented enterprise, and the BSAC would thus generate an income from rents, tariffs, export duties and shares in the newly floated enterprises. The heart of this enterprise lay in mineral extraction for export to newly hungry European commodity markets. Settler agriculture was also encouraged, developing crops for export (such as rubber and cotton) and food to supply the mining industry and the new settler population. What was required here was the influx of capital investment and the creation of a new economic infrastructure geared towards export to both boost production within the region
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and cheaply transport it to consumer markets. Initially this meant the development of mines and railways.

This chapter explores early attempts to create a successful extractive economy in Northern Rhodesia. It begins by setting this effort in a regional context and outlining the main advances in mineral extraction in this period. Much as there was advancement, there was perhaps more failure, and the next section explores the main obstacles to commercial success for the mining industry in Northern Rhodesia at this time. The final sections evaluate the success in creating a regional extractive economy and argues that efforts in this period, while commercially disappointing, were important in territorialising state power and shaping future regimes of control over, and access to, resources.

The BSAC and the race for resources

The BSAC was first and foremost a company; a profit seeking enterprise whose aim in securing the Royal Charter was to make a financial return from colonial administration. Internally at least, BSAC officials were fairly blunt about this, as the then director Wilson Fox wrote in 1910:

"The problem of Northern Rhodesia is not a colonization problem. It is … the problem of how best to develop a great estate on scientific lines so that it may be made to yield the maximum profit to its owner" (cited in Slinn, 1971 p.371).

Central to this aim was the exploitation of the natural resources of Northern Rhodesia, primarily in the form of mining and settler agriculture and secondly by taxing the local populace. In claiming central southern Africa for British rule, the BSAC did not seek to be miners or farmers themselves, they sought to preside over mining and agriculture. They sought to benefit through taxing exports and by taking part ownership of all enterprises developed.\(^75\) In taking this approach the BSAC aimed to secure access to many of the gains of mining and agriculture with few of the risks. The key task of the BSAC therefore lay in creating an environment in which mining and settler agriculture for export could take off. In order for BSAC rule to be successful and profitable, they had

\[^75\] A clause in all prospecting licenses was that the BSAC should have initially 50% (though later 30%) of the shares of mines which were subsequently floated (Gann, 1969, Van Onselen, 1976).
to produce an internationally-competitive extractive region effectively linked to global markets.

The BSAC here is the proximate agent of a centuries-long global process of intensifying resource extraction and consumption detailed by environmental historians Stephen Bunker and Paul Ciccantell in their 2005 book *Globalization and the Race for Resources* described in Chapter One. To recap, the expansion of the commodity frontier generates 'diseconomies of space' and a step-change in realising greater economies of scale in extraction and transport is thus required. Realising these economies of scale depends on (1) technological innovation in order to cheapen extraction and transport, (2) institutional innovation in order to co-ordinate and manage ever more geographically spread and complex operations, and also (3) financial innovation in order to channel capital to these activities and manage the associated risk (Bunker and Ciccantell, 2005). Bunker and Ciccantell's broad characterisation of globalisation and resource consumption is necessarily somewhat abstracted from detailed empirics. Their analysis more or less assumes that mines simply appear on demand. A central contention of this thesis is that this is not so, that mining – and extraction more broadly – requires a range of efforts in order to be successful. In Northern Rhodesia, the production of an extractive space was far from straightforward. It was, in fact, an uphill battle which saw a great deal of individual failure before it saw broad success. Key tensions, as outlined by Bunker and Ciccantell, had to be resolved in order for the region to be a success. First, the BSAC moved to resolve the tension created by the increasingly distant location of the material inputs to production and the ever-increasing volume of materials required. In order for new extractive regions to be successful then, they must provide greater volumes at cheaper prices using more effective technologies of transport and organisation than those of other extractive regions. In order for Charterland copper to compete with that mined in Cornwall or Montana, the price of extraction had to be far below that of England or of the USA to make up for the disparity of transportation costs. This was a fundamental challenge that the BSAC sought to overcome as it extended British-mandated rule and a railway into the heart of Africa. In overcoming this largely technical problem, however, it exposed a far more intractable one – securing a steady supply of cheap labour for European enterprise.
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The BSAC and other companies at the time regarded south central Africa as a region, rather than discrete countries, and both political and business strategies of the time reflect this. The BSAC sought to develop an extractive regional economic system tied to mining industries in Congo and South Africa. For this reason, understanding Northern Rhodesia's position within this regional political economy is central to understanding its early development. Its early mining industry was inextricably tied to that of Southern Rhodesia – prospectors who arrived in Bulawayo in the mid 1890s ventured further north towards the end of the decade. The many prospecting parties which scoured Northern Rhodesia for outcrops and indigenous mine workings set off from Bulawayo. The state policies and investment flows which shaped mining in Northern Rhodesia cut their teeth in the Southern Rhodesian gold boom. In many important regards, Northern Rhodesian mining began in Southern Rhodesia. The story of the mining industry in Northern Rhodesia therefore, begins in Southern Rhodesia with the gold boom of the late 1890s.

The Southern Rhodesian mining boom and spectacular accumulation

The race for resources in central southern Africa accelerated with the extension of Charter Rule into the area. Bunker and Ciccantell's trinity of innovations in transportation and extraction, institutional and co-ordination, and financial and risk management technologies can all be observed in the mining industry of the late nineteenth-century driving the commodity frontier into the African interior. First, the technological innovations of steam power and the mechanisation of mining and improvements in chemical ore processing allowed new ores to be extracted and drove increased output while reducing costs. At the same time, recent advances in steam shipping and the extension of railways dramatically cut transport costs and times from the commodity periphery to European markets (Iliffe, 1995, Letcher, 1932, Martin, 1983). For Southern Rhodesia, the arrival of the railway in Bulawayo in 1897 markedly reduced the costs of inputs and exports. Second, while the 'one company – one mine' structure of the industry remained at this stage, institutional co-ordination was changing (Chapman, 1985a). Financial networks centred on well-connected elites and, more importantly, management and consulting agencies, began to co-ordinate and manage groups of firms in distant regions in new ways through an ever-expanding network of telegraph wires (Cain and
Producing an extractive economy

Hopkins, 1987, Michie, 1981, Turrell and Van Helten, 1986). Well-connected financiers such as Edmund Davis and the Anglo-American consulting firm, both with interests in Southern Rhodesia, were central in co-ordinating the development the mining industry in Northern Rhodesia (Bancroft, 1961, Gann, 1969, Katzenellenbogen, 1974, Rhodesian Anglo American Limited, 1929). Third, the introduction of Joint Stock and limited liability Companies between 1856-62 had introduced a new technology of financing and risk management which enabled finances to be drawn from a wider variety of sources and distributed risk far more widely for overseas enterprise (Chapman, 1985a, 1988). This change was particularly important for the mining industry as it helped manage the risks inherent in mineral extraction; as Whitehead et al. argue, "the unpredictability of geological nature in terms of relative abundance, quality and structural stability made limited liability a crucial precursor to sustained economic investment" (Whitehead et al., 2006 p.56). This legislation also spurred the rise of exploration syndicates to prospect for new deposits around the world (Chapman, 1988). All of the companies floated in the Southern Rhodesian boom were joint stock companies. These innovations drove (not only) the mining industry into central southern Africa and all helped make African mining an attractive investment proposition.

Early mining in central southern Africa was as much a reflection of the tendencies of the broader mining industry at the time as it was of a wider global race for resources. The last two decades of the nineteenth-century were a unique time in mining finance. In this period mining was a ramshackle industry experiencing explosive growth and afflicted by market manipulation and share speculation (Harvey and Press, 1990, Turrell and Van Helten, 1986, Van Helten, 1990). Fortunes were made as markets were manipulated; dubious and entirely false claims were floated as well informed groups wrung massive profits from speculative bubbles they themselves had produced (Phimister, 2000, Van Helten, 1990). For a few decades at the end of the nineteenth-century, a well-oiled machinery developed in London which promoted mineral prospects to a new share-dealing public (Burt, 1972, Phimister, 2000). This was also an industry fixated on gold. Frenzied pursuit of this increasingly valuable mineral drove mining booms in the late 1880s and 1890s (Van Helten, 1990). Booms described at the time as "beyond measure unprecedented" in South Africa and Western Australia in 1895 first put Charterland on the mining map (Ashmead, 1896 p.45). Over 300 companies were registered in this year.
for mining in Southern Africa of which 100 were to explore prospects in The Rhodesias (Ashmead, 1909). While much of the money raised in floating these companies never left London, these waves of capital and interest carried prospectors and equipment to first Southern and then Northern Rhodesia in search the gold fields of a 'second Rand' (Van Onselen, 1976).

For a few heady years then, Southern Rhodesian gold was hot property. Speculation ran rampant and the BSAC fanned the flames reporting "every day – new finds" to the London Stock Exchange (LSE) at the height of the boom (Van Onselen, 1976 p.14). Initially at least, the BSAC’s interest lay in encouraging as much mining as possible. It earned fees from purveying mining licenses which included conditions giving the BSAC shares in every mine which was floated. While the boom succeeded in bringing capital and resources to the newly opened up territory, it was exceedingly inefficient. In these speculative bubbles, claims to land in an area were the key to future wealth. This was partly due to the relationship between different forms of claims – prospecting and mining. The key to wringing profits from speculative bubbles was controlling the shift from prospecting to mining claims. If deposits were found, a single prospecting claim in a mineralised area could easily give rise to dozens of smaller companies floated on a 'one mine – one company' basis. A large part of the capital raised (often over half) would be used to pay the 'vendors' of the mining licenses for the claim (Ashmead, 1909). The 'vendors' of these claims, who control this shift from prospecting to mining, stood to gain the most in these speculative bubbles.

The Southern Rhodesian boom was an example of what Anna Tsing calls 'spectacular accumulation', or accumulation through spectacle (Tsing, 2000). In this 'economy of appearances' imagined wealth provides the fuel for investment (Tsing, 2000). Mining was a largely speculative industry as, in the absence of reputable science on which to base

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76 Prospecting licenses cover large areas for short periods of time. They include the rights to test for the presence of minerals and the viability of extracting and processing them, but preclude commercial extraction. If deposits are found then prospecting rights offer the option of pegging more delimited mining claims. Mining claims, are much more delimited and usually have terms which stretch to decades and include rights to timber and water and thus, to an extent, the right to pollute. A great deal of discussion goes into finding the right balance of years for a mining license, they must be long enough to allow for returns of large capital investments but not so long as to discourage immediate development (NAZ B1/61/1 Mining (Amendment) Proclamation Correspondence 1915; NAZ RC/707 Mining Proposed Amendment of Proclamation 1920-25).
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investments, trustworthy personages and reputable financiers became measures of reliability. For a time, investment "was more a matter of faith than the calculation of returns on a range of alternative investments" (Michie, 1981 p.157). A 'magical vision' is required here which envisions an 'empty' frontier, where nature is "made into loot, free for all" and resources are 'discovered' not stolen (Bridge and McManus, 2000, Tsing, 2000 p.132). A great deal of discursive effort is expended here to transform imagined wealth on the fringes of the known world into a tangible, believable investment vehicle. Popular narratives provide scaffolding for this image making: the lonely prospector, the wild frontier and – often for gold mining in Africa – Solomon's Ophir.77 Mining in particular requires and opens the door for this kind of work. The subsurface is by definition hidden from view, its riches cannot be directly seen and must be imagined. The very nature of a concealed underground lends itself to speculation and fantastical thinking.

The Southern Rhodesian bubble burst when it emerged that ore bodies were small and discontinuous. There was no 'second Rand' to be found (Van Onselen, 1976). By 1903, shares of these overcapitalised mines slumped on the London Stock Exchange (LSE) and most companies in Southern Rhodesia were working at a loss. Across the board, Southern Rhodesian gold mines were being undercut by mines on the South African Rand whose large continuous ore bodies enabled them to realise economies of scale (Van Onselen, 1976). Much of this was foreseeable. As the race for resources pushes the commodity frontier into ever more peripheral and harsher environments the risks to extraction increase. With minimal infrastructure – security, transportation, disease, and water supply all threaten the potential for commercial success (Bunker and Ciccantell, 2005, Turrell and Van Helten, 1987). In Southern Rhodesia, beyond the poor quality of the ores, the lack of machinery, cost of inputs such as labour and fuel and lack of a skilled and stable workforce all served to undermine the profitability of Southern Rhodesian mining concerns (Van Onselen, 1976). The money in this boom was not made in Southern Rhodesia, but in the streets surrounding the LSE. The race for resources in central southern Africa was partly derailed by spectacular accumulation and the harsh realities of frontier mining.

77 In the biblical stories, Solomon's gold came from a place called Ophir
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Early mining in Northern Rhodesia

The early optimism of the Southern Rhodesian boom shone too on Northern Rhodesia. Between 1895 and 1905, 30 special prospecting licenses were issued by the BSAC for prospecting in Northern Rhodesia (Bancroft, 1961). Many of these licenses included the possibility to claim farmlands and peg up to 1000 reef claims as, with rising copper prices, "a buoyant feeling prevailed that an Eldorado was about to be disclosed" (Bancroft, 1961 p.56). 1899 was also a high-water mark for copper prices and spurred a great deal of interest in copper deposits Northern Rhodesia was believed to harbour (see Figure 3 and Figure 4 below). Rumour and thin information drove this wave of prospecting as much as in Southern Rhodesia with groups specifically targeting areas mentioned in Livingstone's diaries as rumoured to contain minerals. One group, Rhodesia Concessions ltd., spent 3 years and £30,000 searching the Muchinga mountains for the reputed gold, one geologist spent 1898-9 walking several thousand miles across the Northern Rhodesian bush, to no avail (Bancroft, 1961). Despite the hunt for gold, only one profitable gold mine was floated in this period, the Sasare Mine (Bancroft, 1961).

As early prospectors traversed Northern Rhodesia around the turn of the century looking for mineral deposits, one of the first areas of interest was the 'Hook of the Kafue' pegged by prospectors working for the Bechuanaland Exploration Company in 1895 (Gann, 1969). The first party was led by Frank Lewis who too was following Dr. Livingstone’s notes on the presence of the copper in the area (Roan Consolidated Mines, 1978). In 1899, Frank Lewis and Orlando Baraganwath returned to the area to establish around 20 mines (Bancroft, 1961). Unusually for the time, these mines were amalgamated into a single concern and floated as the Northern Copper Company in 1895 (Guernsey, 1953-4). Behind this company and the Bechuanaland Exploration Company lay well-connected mining financiers like Edmund Davis who remained an influential figure in colonial Northern Rhodesian mining in the coming decades (Roan Consolidated Mines, 1978). At the time, this was the biggest mining concern in the country and the

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78 Interestingly, this group counted author H. Rider Haggard among its directors. Haggard's novel King Solomon's Mines, with its visions of vast gold wealth discovered in the African interior, was influential in stimulating interest in the area to begin with (Roan Consolidated Mines, 1978).

79 LSE Selection Trust Papers G/20 W Selkirk visit to Northern Rhodesia 1897-98

80 An area to the north west of Mumbwa and 200 miles west of Lusaka, much to the south of the current Copperbelt – see Figure 1.

81 NA BT 31/6115/43311 No. of Company: 43311; Northern Copper (B.S.A.) Co. Ltd.
amalgamated claims were referred to as the ‘Big Concession’ (Bancroft, 1961). Though now all but forgotten, the Hook of Kafue boom represented the first large-scale investment in mining in Northern Rhodesia and caused waves amongst those living in the area (Macpherson, 1981). Through a bewildering array of sub-companies, agents of Davis' Bechuanaland Exploration Company were central in discovering many of the important mineral outcrops of the time (Coleman, 1971). This included Roan Antelope, Bwana Mkubwa and Rietbok on the Copperbelt and, the only mineral formation of the time to be discovered without the assistance of Africans: Broken Hill\(^2\) near Kabwe with large deposits of lead and zinc ore (Gann, 1969).

![Northern Rhodesian mineral production by value 1906-19\(^3\)](image)

**Figure 3: Northern Rhodesian mineral production by value 1906-19\(^3\)**

As these mines were being founded in the Hook of the Kafue, George Grey\(^4\) of Tanganyika Concessions was leading a party further north to peg the Kansanshi Copper

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\(^2\) Its name coming from its resemblance to the famous Australian mine of the same name

\(^3\) Source: NA CO 799/15 Northern Rhodesia Annual Departmental Reports 1936; NA CO 799/17 Northern Rhodesia Annual Departmental Reports 1938

\(^4\) A renowned veteran of the Ndebele and Shona wars (leading a detachment called ‘Greys Scouts’), Grey was highly respected in the region for his fearless attitude and efforts to begin mining and combat slave trading (Gielgud, 1956). He was also famous for his epic solo bicycle rides including, in 1899, riding 860 miles to the Bulawayo telegraph to inform his superiors of prospecting successes “armed with just a jar of beef spread, some chocolate bars, and his razors” (Grotpeter et al., 1998 p.127).
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Mine at the western edge of what became the Copperbelt, and conducted clandestine trips into Katanga to prospect where numerous copper outcrops had been documented in 1892 (Katzenellenbogen, 1974). Two years later in 1901, Grey returned with two groups – one to begin operations in Kansanshi, the second to prospect further, this time with official consent, across the border in the Katanga region (Bancroft, 1961). Equipped with a doctor, accountant, miners, geologists and supplies for two years, Grey’s second trip marked the establishment of a broader mining industry in Northern Rhodesia. Roads between Kansanshi and Mumbwa were cut and equipment and ores were transported between the sites. Grey also set about establishing a network of trading stations to secure a food supply for the mines and drove slavers from the region (Gann, 1969, Roan Consolidated Mines, 1978). Development began in 1901 and by 1913 Kansanshi was employing over 800 workers and had produced nearly 3000 tons of copper (Drysdall, 1972, Gann, 1969). Mining was beginning to have an impact in Northern Rhodesia.

Figure 4: Copper prices on the LME 1885-1940

Early economic expansion in Northern Rhodesia

In the first few years of the twentieth-century then, Northern Rhodesia was witnessing a modest economic boom. The arrival of the British had the effect of stimulating a sluggish

85 Source: (Schmitz, 1979)
producing an extractive economy

An influx of missionaries, traders, military and administrators and general traffic passing through the area following the establishment of Pax Britannica, increased demand for food and other commodities. British rule brought with it a hut tax too which served to stimulate the regional economy still further. Settlers were slow to arrive and agricultural production for the growing population fell to Africans. The new demand saw food prices rise as the mines in Katanga gathered pace, the growing labour force generated a high demand for food and agricultural products in the region (Perrings, 1979). Despite encouragement for white settlers to set up farms to supply the mines the majority of supplies were provided by Africans and at a good price, an experience echoed in Southern Rhodesia (Phimister, 1974a, Van Onselen, 1976). The recent cessation of large-scale inter-tribal conflict and raiding had removed many previous obstacles to agricultural production. Increased security had enabled Africans to disperse from their concentrations in fortified towns to smaller villages and expand their use of a wider area of more fertile soils (Berry, 1992, Macpherson, 1981, Meebelo, 1971). African industry too found opportunities in the early years of British rule with Lozi iron working providing tools for local industry when imported tools were very expensive (Gann, 1969).

Following the insecurity of previous decades, the early years of Pax Britannica provided welcome stimulus for the economy of Northern Rhodesia.

Beyond mining, the early days of BSAC rule saw a great deal of experimentation in attempts to derive a profit from the Northern Rhodesian countryside. This was part of a continent-wide push to develop export-oriented forms of agriculture, providing metropolitan markets with primary commodities like rubber, palm oil, tobacco and groundnuts (Berman and Lonsdale, 1992a, Birmingham and Martin, 1983, Freund, 1998). Settler farms were encouraged with vast tracts of land available for purchase for small sums. Many of these early farmers were amateurs with little capital who struggled in the strange new conditions (Gann, 1969). Other large plots were bought up by speculative enterprises or developed by mining houses who sought to manage the risks of frontier mining through diversification. In one example, the North Charterland Company bought large tracts of land in North-Eastern Rhodesia with the hope of exploiting it for a variety

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86 NAZ KSN 2/1 Ndola District Notebook
87 NAZ A3/33/4 Northern copper company, A report by Mr Bentley 1910
of purposes but ended rather disappointed. Over most of the country, cattle ranching proved impossible in the face of the ubiquitous tsetse fly which decimated herds in a matter of months (Gann, 1969). Local timber was found wanting and broadly declared as 'poor quality' as it could not be adapted for building purposes. Experimentation with different breeds of cotton, tobacco and rubber too proved frustrating for the London owners as none took hold in ways which they found acceptable. Decades later, modest cotton exports were noted and tobacco proved relatively successful, but with ongoing problems with transporting goods to distant markets, the majority of settler agriculture relied on the nearer mining companies to purchase their products. However, mining too was struggling to take off in Northern Rhodesia with a range of technical and social difficulties plaguing their operations.

The failure of early mining in Northern Rhodesia

Almost all of the mines in Northern Rhodesia registered and producing in this early period had failed by the beginning of the First World War. The deposits at Katanga proved to be by far the most important deposits found at this time with large extensive mineralisation of copper oxides. While copper oxides were found on the Copperbelt at Kansanshi, Roan Antelope and Bwana Mkubwa, they paled in comparison to those found on the Congo side which averaged 15% and reached 25% copper content. By comparison, in Northern Rhodesia the ore averaged 3-5% copper content – the same concentrations were being used to pave roads north of the border (Gann, 1969). This did not stop repeated attempts to turn Bwana Mkubwa and Roan Antelope near Ndola into successful mines. In 1910 Bwana Mkubwa, after the arrival of the railway, was employing 17 Europeans and 400 Africans before closing again in 1912 (Rhodesian Anglo American Limited, 1929). The sporadic development and repeated attempts to make it turn a profit earned Bwana Mkubwa the nickname 'the mine that refuses to die' (Musonda, 1974).

89 NAZ KSN 2/2 Ndola District Notebook Volume 2
90 NAZ A1/4/2/10 North Charterland Exploration co. ltd. Volumes 1 & 2; NAZ A3/33/4 Northern copper company, A report by Mr Bentley 1910; NAZ NE A1/4/3/5 Mining claims and prospects north of the Zambezi 1902-8
91 NAZ NW A5/1/5 North-Western Rhodesia Mines and Lands Department Annual Reports; NA CO 799/2 Northern Rhodesia annual departmental reports 1925-6
92 NAZ A3/33/4 Northern copper company, A report by Mr Bentley 1910
Kansanshi closed in 1914 having produced 3000 tons of very expensive copper (Drys dall, 1972). In the Hook of the Kafue, only the Sable Antelope Mine, with its rich 8-12% copper ores, survived until 1920 (Gann, 1969, Murray-Hughes, 1923). The rest of the motley collection of silver, lead and copper mines of the 'Big Concession' lasted no more than a few years with most closing when copper prices slumped in 1907 (Gann, 1969).

The African interior proved a difficult place for mining to take hold and posed numerous challenges. Malaria and a range of tropical diseases plagued early miners and many were taken ill with considerable effort expended to maintain the health of Europeans (Watson, 1953). Around the mines, surface water was drained and vegetation cleared to reduce malaria and tsetse fly. Zambia is a wet country, sitting on 35% of southern Africa’s ground water resources (Government of Zambia, 2006). The rocks mined had highly active water tables and large amounts of pumping were required to ensure the mines did not flood. The mines of the Hook "suffered from water and foul air seeping through the limestone formation" (Gann, 1969 p.123). Water frequently overwhelmed pumping equipment limiting the depth to which mines could effectively operate. The Silver King mine was regularly forced to shut when the rainy season flooded its workings. These mines all but ground to a halt in the 5-month rainy season – charcoal production (and therefore smelting) stopped, transportation became impossible and Africans returned to their villages to tend their farms (Murray-Hughes, 1923). Struggling to understand a new geology and hydrology (and often with little training), early miners found maintaining a steady flow of minerals a difficult, sometimes impossible, task. Beyond the hydrological challenges, these early mines failed for a combination of reasons: the limits of prospecting technology, the limits of mining and ore processing technology, struggles with transportation and difficulties with securing both skilled and manual labour. Some of these problems were resolved quickly, others took extensive time and effort to overcome.

Mineral prospecting was in its infancy at this stage (Bancroft, 1961, Wilson, 1992). Geology was only recently recognised as a science and the skills of those who could accurately value minerals deposits were rare and much sought after. The prospecting
techniques used in Charterland, like much of the prospecting of the time, involved paying locals to reveal the locations of ancient workings and then claiming them. Building on the remnants of indigenous copper mining, European miners sought to bring new methods to develop workings often long-abandoned by Africans. Kansanshi, Bwana Mkubwa, Katanga and almost all of the outcrops worked in the 'Big Concession' were ancient workings largely abandoned (Bancroft, 1961). Alternatively, minerals were discovered by examining surface evidence, either exposed rock surface on outcrops, and hills or in streams and riverbeds. Bancroft pointedly describes TG Davey's find at Broken Hill as "the only authentic discovery of a major mineral deposit" in the country at the time, as Davey discovered a deposit not previously worked by Africans (Bancroft, 1961 p.70).

When an outcrop was discovered, samples could be tested to reveal the mineral content and pits and trenches dug to demonstrate the extent of the band along or near the surface. However, beyond the surface or near-surface exposure, how far the ores extended at depth was unknown. Outcrops could either be the tip of the iceberg or flotsam. Like in the Southern Rhodesian boom, this limited understanding led to 90% of those mines registered in the 'Big Concession' failing within a few years of operations beginning when it was discovered that only two of the claims held deposits which continued at depth. It was later advances in prospecting technology which helped discover the ores which came to form the basis of sustained copper production in Northern Rhodesia.

Turning nature into marketable commodities proved difficult. The materiality of the ores in Northern Rhodesia was poorly understood and challenged contemporary mineral processing technologies. In Broken Hill, difficulties separating lead from zinc in the ore processing stage led to extraction only where there was a clear cleavage between the metals and ensured the mine struggled to produce lead in its first decade of operation (Gann, 1969). Difficulties in separating rich mineral deposits from the surrounding rock hamstrung copper mining too. This is symptomatic of a broader shift within the mining industry – the shift from mining narrow veins of heavily mineralised ore to larger bands of more diffusely mineralised rocks. Increasingly in the mining industry however, larger, more diffuse, less mineralised ores were being extracted (Schmitz, 1997). In

Both have their challenges. For vein-mining ore qualities are highly uneven and mineralisation concentrations can shift abruptly. What is mined then, is highly delimited and subject to sudden change – when the limits of the vein are reached, the mine abruptly becomes unprofitable. For more diffuse ores, concentration technology is required.

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general, mineral concentrations of over 30% are required for smelting to be effective and profitable. To this end, most ores go through a concentration process prior to smelting. Advances in concentrating processes meant that lower concentrations of minerals could be extracted and the concentrations increased on the surface prior to smelting – called 'the Porphyry revolution' (Schmitz, 1986). Concentration technology was transforming the industry at this time and new processes enabling the successful handling of diffuse ores could mean the difference between success and failure. Despite mining narrow veins of highly concentrated minerals, this was still a problem for Kansanshi and the 'Big Concession', concentrating the Northern Rhodesian copper oxides was inefficient and expensive. Floatation concentration of copper sulphides which emerged in Australia in 1910 did not work on the copper oxides being mined at the time in Northern Rhodesia (Barger and Schurr, 1944). Bwana Mkubwa was re-launched in 1922 seeking to remedy precisely this problem. The founder believed that their new ammonia-based 'Perkins process' would enable copper oxides to be cheaply and efficiently concentrated. The process was a resounding failure and did not concentrate ores well enough to make them profitable. Mining at Broken Hill was struggling with similar problems with ore handling which were not fully resolved until the 1920s (Gann, 1969, Speak, 1919). The recalcitrant materiality of the rocks mined left early copper mining between a rock and hard place.

A clear demonstration of the diseconomies of space enforced by extraction in the periphery, problems with transportation crippled early mining in Northern Rhodesia. Firstly, reaching the mining areas themselves took a very long time. Roads were few and far between and did not lead directly to mining areas, bridges were almost non-existent and there were few navigable waterways (Fetter, 1983). Cutting roads was often one of the first tasks of mining companies when outcrops were being developed. In the first decades of British rule, almost all transport north of the Zambezi was by porters as the

97 Concentration was usually achieved though using the different densities of metal bearing minerals and the surrounding rock. The extracted ore is ground up and variously 'floated' or 'spun' – the more densely mineralised ore either floating or sinking and thus being separated from the less concentrated rock (Barger and Schurr, 1944, Murray-Hughes, 1923).
98 It was not until the 1960s that the low grade copper oxides could be successfully cheaply extracted.
99 LSE Selection Trust/temp/b/20, Selection Trust History summaries 1914-59, Letter to Krogh from CG James 10/12/1948
100 LSE Selection Trust/temp/b/20, Selection Trust History summaries 1914-59, Letter to Krogh from CG James 10/12/1948.
tsetse fly killed most oxen within months of entering 'fly country' – an area which covered most of the mineralised districts including the Copperbelt and the Hook of the Kafue (Gann, 1969). This lack of roads and reliance on porters – who carried 60lb loads 15-20 miles a day – delayed transport and pushed up its costs (Pelletier, 1931). Frank Lewis' second expedition took six months to reach the Hook from Bulawayo, a journey of around 400 miles (Roan Consolidated Mines, 1978). George Grey's second expedition set out with 100 porters and 12 ox-wagons in 1901. After spending 2 weeks crossing the Zambezi by strapping wagons to dug-out canoes, and despite taking on more oxen and 200 donkeys on the far shore, so many of these animals died en route that the party arrived at Kansanshi with 1000 porters (Gann, 1969). The mortality of transport animals meant that load-sizes were limited, preventing mines from importing large equipment. For the Silver King mine, this limited the size of the boilers they could use to pump water and therefore how deep shafts could be sunk before the volumes of water overcame pumping capacity.\textsuperscript{101} Transport was a very real bottleneck for early mining in Northern Rhodesia undermining attempts to realise economies of scale. Attempts to train wild animals resistant to 'the fly' as draught animals failed and porterage remained the staple mode of transport in most of Northern Rhodesia limiting the speed of transport and load size for decades to come (Gewald, 2007).\textsuperscript{102}

Secondly, having arrived at the mining site, moving equipment and the extracted ore posed further transportation difficulties. Steam-powered traction engines were commonly used. These large and expensive machines proved to be a staple of early mining in Northern Rhodesia. With no ready supply of coal, these engines required large full-time teams to gather wood to feed the boilers, maintain a steady supply of clear water and clear a suitable path, creating a substantial financial costs to simply run the machines.\textsuperscript{103} The drivers too were a financial burden, their skills commanding £900 per year at Kansanshi, three times that of university-educated geologists with the company (Gewald, 2007).

\textsuperscript{101} NAZ A3/33/4 Northern copper company, A report by Mr Bentley 1910
\textsuperscript{102} Tapson recounts one of these efforts "someone in Fort Jameson once thought it would be a good thing to train zebra to pull the Administrator's carriage. A certain chap named Toby was given the task of training four spanking zebra which were reputed to be tame. After much trouble and patience one of the zebra bit him and nearly tore the muscle out of his arm. This was too much for Toby. He shot the lot." (Tapson, 1952 p.52).
\textsuperscript{103} Gewald cites one account which describes 1000 labourers being employed to keep 2 traction engines running on one trip in Northern Rhodesia at the time (Gewald, 2007, NAZ A3/33/4 Northern copper company – A report by Mr Bentley, 1910).
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Used in both the Hook of the Kafue and Kansanshi, reliance on these engines served to ensure that production was prohibitively expensive. Despite being an advanced technology, they could only really be used in the dry season as deliveries of ore to the railhead in Congo, 90 miles from Kansanshi, took over a month in the rainy season (Denny, 1957, Gewald, 2007). These difficulties in transportation made almost all aspects of early mining in Northern Rhodesia financially challenging. All inputs such as machinery, equipment and food were costly, either through transportation costs or isolation from markets. The metals and concentrated ores produced were thus very expensive to get to market reducing the profitability of mines.

The traction engine highlights another key issue for early mining in Northern Rhodesia – fuel. Mining relies on cheap and ready inputs of fuel. Beyond using steam power for a wide variety of functions in the mine from drilling to crushing and pumping, fuel was also required to smelt the ore. Reliance on lumber for its energy needs meant that early mining took a substantial toll on vegetation near the mining sites. While few contemporary observers thought much of it, or at least not enough to note it, Gann describes "ruthless deforestation" required to keep boilers going in these early days (Gann, 1969 p.125). Much of this issue was solved when the (Edmund Davis linked) Wankie Colliery opened in 1903 – providing a cheap, proximate and abundant supply of coal for mining and industry (see Figure 1) (Gann, 1969). The Wankie colliery only became useful to mining in Northern Rhodesia however, when it was connected by a railway.

The key to successful mining was therefore believed to lie in the arrival of the railway in Northern Rhodesia in 1904. The railway, a key promise of the BSAC in winning the Charter, wound its way north by joining mining centres from Bulawayo in 1897, to Wankie Colliery in 1903, Broken Hill in 1906 and Ndola and Katanga in 1909 (Fetter, 1983). In the Rhodesias, the railway quickly became a focus for economic development and decisively changed the economic landscape of Northern Rhodesia. Bringing cheaper inputs of machinery and coal and reducing the cost of exports, the railway offered the prospect of competitive mining to the region. The immediate impact on mining in Northern Rhodesia however, was slight. Broken Hill was considered the best prospect at the time of planning and thus the railways headed there instead of to the Hook of the

104 NAZ A3/33/4 Northern copper company, A report by Mr Bentley 1910
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Kafue. Edmund Davis had promised that the mine would need a train a day by the time the railhead reached Kabwe (Katzenellenbogen, 1974). Railwaymen, having laid 281 miles of track in 277 days, were thus disappointed to discover an uninspiring scene of economic development in January 1906:

"Apart from a few wattle and daub buildings belonging to the Mine, standing on the kopje overlooking the workings, there was only the grass buildings which served as a store for the African Trading Corporation … Apart from this there was no human habitation. The Cape-to-Cairo railway came to an end in the middle of a burnt-out vlei without even a buffer-stop at the rail terminus. Beside it stood a solitary telegraph post and in this atmosphere of desolation it languished for several years" (Varian cited in Bancroft, 1961 p.71).

Despite these modest beginnings, Broken Hill slowly took off after the arrival of the railway. Elsewhere, the effect on mining was even less impressive – Mumbwa and Kansanshi both lay many miles from the railway, too far to reduce transport costs to a competitive level. And, despite its proximity to the railhead at Ndola, Bwana Mkubwa still struggled to turn a profit due to the quality of ore being mined. As the Southern Rhodesian boom fizzled and spluttered even the arrival of the railway was not enough to make it immediately competitive. The railway was only one part of the puzzle. The fundamental problem faced the mining industry in this period, and the one which took the longest to resolve, was labour.

Initially, the problem of labour was two fold: a lack of skilled labour and a lack of manual labour. This was mining of an era where professionalism and systematic training of miners was only beginning to take hold (Reeks, 1920, Wilson, 1992). In the challenging conditions of mining in central southern Africa, technical precision and training came a lot lower down the list of desired qualities in a miner than rugged constitution, bush experience and military training. This lack of skilled labour, which also shaped early government, impacted the efficiency of operations of mines in early Northern Rhodesia. The mines in the Hook suffered from monthly stoppages when isolated miners spent their wages at the end of the end of the month on a "drunken spree which often necessitated the virtual closing of the mine for a few days" (Gann, 1969 p.123). The Silver King mine attempted, with some success, to remedy skilled labour problems – and keep labour costs low – by training and promoting Africans to skilled and semi-skilled positions (Murray-
Hughes, 1923). Successful mining enterprise in Africa rested upon a cheap and plentiful supply of African labour for manual work. The low wages paid to African workers were the bedrock of mining profitability (Moore, 1948, Perrings, 1979). This question of labour has been much studied by Marxist historians of Africa (Berger, 1974, Henderson, 1975, Macpherson, 1981, Parpart, 1983, Perrings, 1979). At first glance this may seem ideologically driven, but it mirrors a very real concern of colonial officials. Judging by the archival record, few questions preoccupied colonial administrators in Northern Rhodesia more than that of labour. It was a question which took decades to answer and looms large in the chapters which follow. Chapter Four explores how early efforts to resolve the labour issue through taxation and coercion generated widespread political instability while producing only irregular streams of labour. Chapter Six charts the changes which enabled the transition in Northern Rhodesia from constant labour shortages to an abundance of labour in the 1930s. In the first decades of the British colonial presence however, failure to maintain a steady and cheap supply of African labour was a key problem for all the mines in Northern Rhodesia. Bwana Mkubwa, Kansanshi and the mines of the ‘Big Concession’ all struggled to contain a high labour turnover and mass desertions (Bancroft, 1961, Gann, 1969). 105 Despite efforts to use taxation and coercion to encourage Africans into wage labour for the mines, the comment in one governmental report in 1908 that the labour situation was "always more or less precarious" was regularly repeated in the coming decades. 106 Even when promoting new finds on the Copperbelt in 1929, one promotional brochure conceded that:

"Labour at certain times of the year is hard to get and even harder to feed. When obtained it is inefficient generally and ignorant of mining work in particular" (Rhodesian Anglo American Limited, 1929 p.12).

It was the resolution of the labour question which provided the basis of a successful mining industry in Northern Rhodesia.

Creating an extractive space

The mining industry in Northern Rhodesia was, by the First World War, a disappointment. With base metal prices low after 1906, prospecting activity largely died

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105 NAZ A3/33/4 Northern copper company, A report by Mr Bentley 1910
106 NAZ NW A5/1/5 North-Western Rhodesia Mines and Lands Department Annual Reports 1908-11, Report for the year ending the 31st of March 1908, p.4
down and did not recover before WWI (Drysdall, 1972, Parker and Gray, 1935-6). The repeated failures in the 1910s of Bwana Mkubwa, Kansanshi and the ‘Big Concession' deterred further investment (Drysdall, 1972). The arrival of the railway had failed to enable mining to take hold. Following this early slump, the 1912 Mining Proclamation attempted to stimulate mining once more by offering £1 prospecting licenses with the possibility of prospecting anywhere in the entire territory (Coleman, 1971, Imperial Institute, 1930). With the First World War rumbling in the background, the results were negligible. Mining in Northern Rhodesia entered the 1920s in an unimpressive state: early optimism had been replaced with disappointment and the widespread belief was that the country's future lay outside of mining. While Sasare and Broken Hill continued to work producing gold and lead respectively, almost all copper had been produced at a loss and mining had failed to take off as hoped in the first three decades of colonial rule (Drysdall, 1972). Again, like in the Southern Rhodesian boom, the disconnect between imagined wealth amongst London investors and the harsh realities of frontier mining was apparent. Wilson Fox's 1910 memo cited earlier (page 82) spoke of a time when the economic future of Northern Rhodesia was being considered. The conclusion reached was that the best use of Northern Rhodesia was as a labour reserve for mines in Congo, Southern Rhodesia and South Africa:

"There is no reason … why North-East Rhodesia should not in future be of the greatest assistance to Southern Rhodesia in supplementing the constant shortage of labour there." (BSAC General Report on Rhodesia for 1907-08 cited in Henderson, 1975 p.23)

Henderson and Macpherson argue that this regional geographical imaginary of Northern Rhodesia as a labour reserve for surrounding areas was dominant from the start (Henderson, 1975, Macpherson, 1981). That, after being unable to secure access to the Katanga coppers and with attention focussed on Southern Rhodesian and South African mining, Northern Rhodesia was always intended to become a labour reserve for the surrounding mining areas. The argument here is that while a regional view of extractive enterprise always held sway (reflected in part by the planned railway and the South African roots of the BSAC) and while Southern Rhodesia and its gold had always preoccupied the BSAC's London board, Northern Rhodesia's backwater status was not a forgone conclusion. Rather, the labour reserve policy was the pragmatic response to the
low soil-fertilities and irregular ores in the territory.\textsuperscript{107} Mining performed a range of functions that were useful to the BSAC (discussed in Chapter Seven). The BSAC went to lengths to encourage mining and economic activity in Northern Rhodesia – opening three Bomas in anticipation of activity on the ‘Big Concession’. Choosing the country with the lowest population densities in the region as a labour reserve is unlikely to have been the first course of action. Despite Northern Rhodesia's failure to become an extractive space for mining and only partial success in becoming an extractive space for labour, in the midst of this apparently failed effort, the seeds of future development had been sown.

The Southern Rhodesian boom, and early speculative activity in Northern Rhodesia, shaped the development of mining in the region in a number of important ways. \textit{Firstly}, speculative booms in this period undermined mining's image with the investing public as the vast majority of the mines floated failed. As mining in Africa came to be seen as a gamble, it undermined trust in Rhodesian mining in general and made raising capital for new and unproven mines difficult (Van Onselen, 1976). Investment then became the reserve of much more specialised mining financiers rather than the wider public (Bancroft, 1961). \textit{Secondly}, it encouraged the BSAC to reduce its burden on new mining concerns and restructure its approach to mining companies, even offering small loans (Van Onselen, 1976). \textit{Thirdly}, the speculative bubble brought a wealth of prospectors, equipment and mining services to Southern Rhodesia and the railhead at Bulawayo ensuring that mining equipment and expertise was available in the region. \textit{Fourthly}, the boom encouraged BSAC officials to take the labour question seriously. Beyond the reach of purely mining, the Southern Rhodesian boom was the first flurry of activity in the creation of a regional economic system around the extraction of natural resources, setting the tone of much of what was to follow.

Decisive in creating this regional economic system was the railway to Katanga. With the failure of a ‘second Rand’ to materialise and mining in Northern Rhodesia spluttering, BSAC finances were in a dire state.\textsuperscript{108} What little revenue the BSAC did have, it was unwilling to invest in the territory. Ignoring promises made in its original treaties, the

\footnotesize{\textsuperscript{107} Slinn cites BSAC officials in 1909 discouraging the arrival of more white settlers beyond those required for mining – mining was always a key priority for the BSAC (Slinn, 1971 p.370 footnote 22).\textsuperscript{108} It was this hardship which tipped the balance in favour of extending the railway further north (Katzenellenbogen, 1974).}
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BSAC refused to pay a 1% share of the small mineral royalties to African leaders on whose lands they had been won, calling it “a most undesirable practice”. As the connection linking Katanga to Wankie was made, the railway very quickly became profitable. The railway was a rare commercial success and credited by some as keeping the company afloat in this period (Katzenellenbogen, 1974). The Wankie colliery and Katanga coppers effectively paid for the railway and subsidised agricultural and other traffic on the line (Katzenellenbogen, 1974). The railway did little to immediately spur the mining industry in Northern Rhodesia, instead shaping other markets and having a profound effect in creating a regional economy (Phimister, 1974a). While hopes of a thriving minerals sector were fading by this point, the railway meant that Northern Rhodesia was now well placed to become an exporter of labour for the region's mines. Labour from the north, then, was used to undercut local labour in the gold fields of Southern Rhodesia and in so doing, proved the basis of the industry's long-term success. The possibility of cheap agricultural produce and other supplies enabled regional competition to undercut local suppliers and reshape the regions economy (Phimister, 1974a). The arrival of the railway and its course through Northern Rhodesia shaped the spatial development of the country and influenced policies towards the local populace living near the railways route (Fetter, 1983, Gann, 1969, Phiri, 2006). Soon after the railways arrived, nearby African communities were encouraged into Native Reserves set back from the line of the railway to make room for hoped for settlers (discussed in Chapter Six) (Gann, 1969). Mining may have failed to take off as hoped, but the foundations for a regional extractive system had been laid.

Conclusion

The BSAC expended great effort encouraging investment in central southern Africa in order to develop a successful extractive economy. It established military control to provide security for investments. With the telegraph and railway, it effectively reduced the distance to commodity markets and the metropoles. The BSAC also sought to promote the mineral prospects in the area to investors. With favourable rights regimes and cheap land, the BSAC worked to encourage investors with dreams of a new frontier,

\[109\] Mss. Brit, Emp. s.412 Papers of the Central Mining and Investment Corporation Limited 1/1 Colonial Despatch 31/12/1938 From Malcolm Macdonald to Governor; Mss. Brit, Emp. s.412 Papers of the Central Mining and Investment Corporation Limited 1/1 Commutation of 1% Royalty

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... echoing – and attracting a range of individuals from – the American West (Gann, 1969, Grotterer et al., 1998). Initially, this was fairly successful. London mining investors embraced Southern Rhodesian gold. The capital that poured into these prospects, however inefficiently, laid the foundations of a mining industry in the region. With irregular deposits and rudimentary technology, many of these early efforts turned out to be experiments rather than the basis of sustained commercial extraction.

After a decade, mining in Charterland was an apparent failure. For the investing public in London, little money was made. By 1908 only 2 companies in the Southern Rhodesian gold boom had paid a dividend (Van Onselen, 1976). Mining in Northern Rhodesia, with two exceptions, failed to last more than a decade. Producing a successful extractive mining economy had eluded the BSAC; the technological difficulties of mining in an entirely new region overcame mines across Northern Rhodesia. Disease-carrying bugs decimated domesticated animal herds and invalided miners. Water overwhelmed mines and the rainy season brought work to near standstill at most mines. Africans proved very reluctant to work in the mines and when they did, often quickly left. The railway did little to immediately alleviate these problems, but it did tip the balance of economic power in the region and set a new trajectory of economic development and extraction firmly in motion. The centrality of railways to colonial penetration has been much examined and lauded in African colonial history; Lonsdale goes as far as describing quinine and the railways as "the real conquerors of tropical Africa" (Headrick, 1979, Lonsdale, 1977 p.849). Rhodes' Cape-to-Cairo vision rested on a railway line spanning the continent from north to south. And while this vision was never fully realised, the railway stitched together a new region producing a new scale and geography of economic activity in the Rhodesias. It proved to be a key intervention.

Amongst the ruins of dozens of failed mines and enterprises, the seeds of a new regime of access to and control over resources was being produced. One which relied on English common law, the military supremacy of the colonial state and the technical vision and schema of the colonial bureaucrat. As the colonial state enabled the penetration of capitalist relations, extractive enterprise provided the material basis for the colonial state. The economic dependence of the colonial state on successful capitalist enterprise shaped the goals and operations of colonial rule. The next chapter examines colonial rule in this...
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light, in particular in relation to its attempts to resolve 'the labour question' which plagued early European enterprise in Northern Rhodesia.
Chapter Four: The BSAC and ‘the rule of the feeble’

Introduction

Producing an extractive space was not only a technical and economic challenge, it was a political one too. Early BSAC rule was shaped by its primary aim of encouraging the formation of an extractive capitalist economy. The key struggle in producing an extractive space was the generation of a steady supply of cheap African labour. The BSAC's response was intentionally to disrupt African economies and forcibly introduce a cash economy and wage labour. However, the pursuit of dynamic economic change produced contradictions as the emergent state struggled to maintain political stability with limited means. The results were largely negative for Africans and frequently undermined the basis of colonial rule. Despite its many shortcomings however, BSAC rule in Northern Rhodesia, in reshaping socio-ecological relations, took important steps towards creating the conditions for the future success of mining.

This chapter explores the nature of early British rule in Northern Rhodesia beginning with the imposition of a hut tax. Where the hut tax failed to produce the desired flow of cheap African labour, a violent clamp down on African-controlled forms of economic activity followed. These clamp downs generated a great deal of turmoil and Africans, unsurprisingly, resisted the changes being wrought. The second half of this chapter explores the limits to colonial authority – limited resources, the reliance on African political structures and the limits of coercion as a technique of power – arguing that these are key to understanding why the BSAC period failed to produce a successful capitalist economy. Concluding that BSAC rule failed in its aim of profitable colonialism and substantial economic development, this chapter characterises early colonial rule as highly dysfunctional and disruptive through its crude attempts to resolve complex problems.
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The hut tax

Initially, the colonial state had modest beginnings and a limited agenda. However, it quickly became increasingly interventionist as it sought to build an extractive economy. As soon as the BSAC had assured its own military supremacy, it began a series of increasing demands of the populace which peaked in WWI. Early demands made of African leaders focussed on portage and road building, but these quickly came to include an increasing tax burden. The aim was to make a profit from colonialism and the clearest route for this was revenue derived from exports. For exports to be successful they needed to be internationally competitive. Workers had to be found and employed at wage levels which kept production costs low enough to offset international transportation costs. Africans were paid a fraction of what their European counterparts earned (Perrings, 1979). European enterprise was crying out for cheap labour and the BSAC took heed. A two-pronged approach was adopted – imposing a hut tax across the territory and curtailing those economic activities which discouraged Africans from engaging in wage labour. The hut tax aimed to serve two purposes. Primarily it raised the cost of living for Africans, encouraging them into employment as labour for European enterprise and secondly, it helped cover the cost of administration (Lonsdale and Berman, 1979).

It is no accident that early BSAC administrators were called 'collectors'. Tax collection was a "major preoccupation of the provincial administration" in its early years (Rotberg, 1965b, p.47). Between 1894 and 1902, taxation was introduced across Northern Rhodesia (Macpherson, 1981, Rotberg, 1965b). Tax rates were consciously set at levels which it was hoped would draw African labour away from villages with European employers offering "artificial rates of pay that were geared entirely to the level of the prevailing tax assessment" (Rotberg, 1965b, p.41). As initial levels of taxation failed to produce the desired effect, tax levels were quickly increased. The tax, and its imposition, formed a

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110 As revenue raised from the hut tax fell far short of covering administrative expenditure in the early years it is clear that its primary purpose was to encourage Africans in to wage labour (Meebelo, 1971, Rotberg, 1965b).

111 A 3 shilling tax was introduced to the Copperbelt area in 1901 and quickly raised to 5 sh. in 1905 and 10 sh. in 1910 (Macpherson, 1981, Siegel, 1988). Initially the tax could be paid in cash, labour or in kind as foodstuffs or other produce. In 1902 the Foreign Office banned the payment of tax by unwaged labour because of unease about how closely the outcome resembled forced or slave labour – opposition to which had been a key moral justification for the British imperial project (Rotberg, 1965b, Siegel).
central plank of the BSAC's intervention into African society in Northern Rhodesia and quickly became its most notable characteristic with the local population.

Intentionally disruptive taxation, while clearly implemented to serve immediate economic interests, was justified as part of the civilising mission of the White Man in Africa. An ongoing strand in colonial thought was the assumed mutual gain of economic development in the region. On lobbying to gain the original Charter, board members argued that the BSAC would:

"Be able peacefully and with the consent of the native races to open up, develop and colonise the territories to the north of British Bechuanaland with the best results both for British trade and commerce and for the interest of the native races" (Knutsford cited in Hall, 1965 p.58).

What is unspoken here is the imagined total confluence of European and African interests. Moral and instrumental reasons for taxation were blurred and conflated. Taxation was promoted on the moral grounds that it aimed at curing the perceived inherent deficiencies of idle Africans; for "thousands of savages living in sloth… the discipline of work for a few months of the year would be of the highest moral benefit" argued one commentator (Methodist Superintendent cited in Macpherson, 1981 p.106). In 1901 BSAC director Philip Gell contended that a moral schooling in the imperative to work was the key part of the 'white man's burden' in central Africa, a sentiment echoed in Northern Nigeria by the influential Lord Lugard (Freund, 1981, Lugard, 1965). The policy was clear: "The African should pay for the protection he received, and he should take part in the development of his country, and not 'idle' about in the villages" (Gann, 1969 p.103). Purging 'idleness' from 'the native' was a useful moral justification when idleness came to be a label applied to the majority of activities which were not waged labour (Perrings, 1979).

The gifts of imposed peace and progress must be paid for, as the then Governor of Northern Rhodesia spelled out to gathered chiefs of the Copperbelt in 1928:

"You have paid tax well. It is only right that you should pay tax. You have been given peace in the country, you are protected from the brutal mutilations of the past. Some of your elder people will realise what I mean.

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You are able to live in peace, without fear of other tribes raiding your villages, capturing your women folk, and robbing you of your food supply. Many of your people today are wearing shirts and clothing. The railways built by the White Man enable you to buy these luxuries, 20 or 30 years ago you would not have had clothes"\textsuperscript{113}

This moral benefit of taxation and the beneficence of British rule remained an ideological cornerstone of the colonial project. Yet, despite fine words, the reality of taxation was a brutal one with compliance secured through the application of coercive force. The price of Pax Britannica was coercion into market relations and forcible participation in the 'development' of Northern Rhodesia.

Africans did not rush to take up wage labour in European enterprises. The precarious nature of early mining in Africa necessitated the paying of as low wages as were possible and, combined with the arduous and dangerous nature of the task in hand, working for the mines remained the least favourable option of all for generating tax duties (Van Onselen, 1976). As described in the previous chapter, African agriculture experienced something of a boom in the early years of Pax Britannica. Many Africans were able raise the required funds through selling their agricultural produce. The reluctance of Africans to enter into wage labour frustrated colonial officials and entrepreneurs alike. So where intervention at the level of exchange failed, intervention at the level of production, disrupting indigenous industry and agriculture, was used to produce results (Lonsdale and Berman, 1979). To discourage agricultural production, the mines in Katanga signed an exclusive contract with King and Werner (a European-owned trading company) in 1909, with catastrophic consequences for locals when this coincided with a failure of the sorghum crop (Perrings, 1979). In Southern Rhodesia, the success of African agriculture in raising tax money led the mines to refuse to pay for goods with anything other than other goods, leaving wage labour as the only route to pay a cash only tax (Phimister, 1974a). In other areas, if officials had trouble raising the requisite labour, it was not beyond them to force the local trading station to close so as to remove this avenue for raising capital for the local population and oblige them to sell their labour (Luchembe, 1992). Some Bemba tribes maintained an effective trade in salt enabling them to pay their

\textsuperscript{113} NAZ KSN 1/3/1/3 Ndola Correspondence, Native Affairs general, 1926-8 – Minutes of Native Indaba held at Mkushi Boma 9/6/1928 p.5
taxes without working for Europeans. The BSAC responded by moving quickly to close the salt pans (Luchembe, 1992). The Lozi iron-working industry too was quashed (Vail, 1983). With the growth of the mines in Katanga, labour began to flow in the 'wrong direction' for British colonial officials. Seeking to stem this growing tide, and support the stuttering Southern Rhodesian gold mining industry, the tsetse fly and a trumped up sleeping sickness epidemic were used as reasons to close the border to Congo forcing labour south (Perrings, 1979). Outlawing certain forms of economic practice was not a novel facet of colonial rule, it was part of its original mandate – restricting the sales of arms and ivory and abolishing slavery. In order to ensure that taxation had the required effect, violence became a common facet of BSAC rule.

The brutality of rule

The British response to African reluctance to accept imperial demands was frequently a violent one. And thus the character of early British rule in Northern Rhodesia was often one of brutal subjugation. Two of the areas to be first visited by European mining, the Copperbelt and the Hook of the Kafue, are good examples of how rule was brutally imposed by British imperial agents. As prospectors discovered ores around the Hook and on the Copperbelt, the BSAC responded by establishing three new Bomas in the summer of 1901. The administrative and police presence was intensified to establish control in the area, end slave raiding and trading and provide security for the nascent industry (Siegel, 1988). The Bomas also worked to encourage locals into wage labour for the new enterprises in their midst.

At the Hook, Val Gielgud encountered what he saw as the "remnants of weak tribes" who, he wrote to Rhodes, were "quite the popular idea of a savage".114 The response was obvious: "before these people will quietly accept the power of the White Man they will need a practical demonstration of his power"; more specifically, military action of overwhelming force.115 This would subdue the surrounding tribes and thus forestall any chance of different groups combining forces to resist British rule.116 Gielgud repeatedly made this call for violent subjugation during his time in the area (Macpherson, 1981).

114 RH Mss Afr. S.288 C18 Rhodes Papers 15, Letter from Gielgud 10/2/1901
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Gielgud's given task in the area was to "report on local conditions and to prepare its peoples for peaceful administration" (Denny, 1957, Siegel, 1988 p.67). This he interpreted to mean imposing British rule violently and "used his 20 Ndebele Native Police to harass the slave traders, and by staging punitive raids against hostile Ila, Lenje, and Soli villages, to impress these peoples with the power and prestige of the callous Europeans in their midst" (Denny, 1957, Siegel, 1988 p.67). He did this in full knowledge of the fact that he held no official position within the BSAC administration (Denny, 1957). He saw his race as authority enough (Macpherson, 1981).

On the Copperbelt, the first British administrator at Ndola acquired a reputation for the brutal use of force – the aforementioned BSAC official John 'Chirapula' Stephenson. The local nickname 'Chirapula' roughly translates as 'the flogger' or 'he who beats hard' (Siegel, 1988, Stephenson, 1937). In his autobiography, Stephenson paints a picture of himself as being welcomed as a demigod by the Lala tribe and his 'firm but fair' approach to administration earning the respect of the locals, particularly that of their leaders (Stephenson, 1937). Stephenson also writes that he earned the nickname from a single incident where he, instead of punishing all the porters on a delayed supply caravan, argued that it was the responsibility of the headmen to ensure that the party was not lazy and that they should be punished instead. The leaders, he says, agreed. The first elder "putting aside his pipe … stood up, and simply said 'Beat me'" before he "lay down, put his head on his folded arms, and the Corporal administered justice"; a sight which moved Stephenson to tears (Stephenson, 1937 p.190). Macpherson takes issue with this account and, citing testimony of a number of leaders in the region, points out that he also had another nickname 'Selesele' which roughly translates as 'the rough despiser' or 'humiliator' (Macpherson, 1981 p.91). Even the tribal histories in the Ndola District Notebook collected decades later note the arrival of a 'harsh man' who collected hut tax. With his liberal use of a hippo-hide whip (Sjambok) to enforce demands, Chirapula Selesele was considered a "very cruel man" by those he administered (Macpherson, 1981 p.92).

The hut tax was enforced with similar violent emphasis on compliance across Northern Rhodesia. The imposition of the tax was widely resisted and evaded. This led to brutal punishments being meted out with the huts burnt and cattle taken from defaulters.

117 NAZ KSN 2/2 Ndola District Notebook Volume 2 p.310
(Harding, 1933, Siegel, 1988). Other techniques used included taking wives and holding them prisoner until taxes were paid, chain gangs, and seizing a wide variety of assets in lieu of unpaid taxes (Rotberg, 1965b). In areas of industrial expansion, the pressure to encourage Africans into the labour market was even more pronounced. Around the first mining boom in the Hook of the Kafue "a wider network of Bomas and police camps were established between the Kafue and Luangwa Rivers, where shackles, floggings, and hut and granary burnings were commonly used to punish tax defaulters" (Siegel, 1988 p.69). Apparent inability to pay was no excuse as protests from District Officers who believed the tax burden was too onerous met with little sympathy from BSAC directors (Gann, 1969, Harding, 1933, Luchembe, 1992). The violent basis of BSAC rule has lead Luchembe to argue that the colonial authorities "ruled the people through military or paramilitary detachments and these, for the greater part of this period, constituted the backbone of the emerging colonial state" (Luchembe, 1992 p33). The military approach and uncompromising methods of BSAC rule did not go unnoticed by the Colonial Office which repeatedly intervened to encourage the BSAC to scale back their more disruptive and brutal actions, souring relations between the two (Gann, 1969, Prins, 1980, Ranger, 1980).

Those entering into wage employment to raise money to pay taxes were subject to brutal conditions of employment with beatings meted out on "inexperienced labour gangs working under inefficient managements whose language they did not understand" (Gann, 1969, Lonsdale and Berman, 1979 p.500, Macpherson, 1981). This was in stark contrast to early discussions of labour conditions where emphasis was put on how all effort should be made to make labour conditions as agreeable as possible so as to encourage more Africans to take up wage labour. European enterprises sought to raise labour directly from the settlements surrounding their works. Gann describes how Kansanshi labour agents "scoured the villages for men, and sometimes secured labour by false promises or threats" (Gann, 1969 p.123). Around the ‘Big Concession’ Frank Lewis and his colleagues gained a reputation for the forcible recruitment of labour and outright theft of African assets (Macpherson, 1981). Their violent approach led to mass desertions at the Silver King and Sable Antelope mines (Macpherson, 1981). Across the territory working conditions were characterized by violence and exploitation (Hall, 1965, Macpherson, 1981).

118 RH Mss Afr. S.288 C18 Rhodes Papers 91, Letter from Smitem to board 1898
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1981). While the violence that underpinned the early colonial effort was frequently downplayed in public discourse in the UK, it was widely known in Northern Rhodesia and across the region. The white men, African elders later recollected, "came with war" (Macpherson, 1981 p.94).

Disruption and dispossession

In the early days of BSAC control, rule was both highly visible and violent – it was also deeply dysfunctional and disruptive. Initially at least, Pax Britannica was a welcome change for many Africans on the Copperbelt, who quickly moved out of their large fortified villages and spread out to smaller settlements (Berry, 1992). BSAC officials opposed this as it made administration and collection of taxation more difficult and subsequently forced Africans to gather in larger villages (Macpherson, 1981, Perrings, 1979). The population density encouraged the spread of disease (such as sleeping sickness described below) and undermined soil quality due to the increased demands being made of it (Musambachime, 1992). Hunting of game was outlawed in 1900 which deprived Africans of a key source of dietary protein (Gann, 1969). As fauna populations grew they encroached on the gardens of Africans destroying crops and spread tsetse flies and with them the sleeping sickness they carried causing epidemics in the late 1900s (Meebelo, 1971, Musambachime, 1981, 1992). In 1906 the local 'Chitemene' slash and burn approach to agriculture was seen as wasteful and was outlawed to prevent deforestation (Meebelo, 1971, Perrings, 1979). This led to disastrous consequences for Zambian agriculture of soil degeneration and declining crops rapidly gave rise to serious unrest and forced the BSAC to abandon this policy by 1909 (Musambachime, 1992). The BSAC still attempted to gather the disparate gardens closer to the village and discourage Chitemene (Berry, 1992, Musambachime, 1992).

The punishments for Africans defaulting on the rapidly increasing taxation had devastating effects on the ability of people to pay the new taxes. Forced to travel great

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119 NAZ KSN 2/1 Ndola District Notebook
120 NAZ KSN 2/1 Ndola District Notebook
121 This was the dominant form of agriculture in the northern part of the territory which relied on clearing small areas of trees, burning the wood and spreading the ash over the cleared land as a fertiliser. It is a shifting form of cultivation that requires the clearing of new areas as soil fertilities decline. While condemned by colonial administrators as wasteful, barring large cash inputs, it remains a remarkably effective way of managing the low soil fertilities in Zambia (Grotpeter et al., 1998).
distances to sell their labour in order to raise taxes, villages were depopulated of male labour.\textsuperscript{122} Depending on the forms of agriculture used, this had varying effects across the country. In the cattle rearing south this had a less marked effect as their systems were less reliant upon adult male labour (Gann, 1969). On the Copperbelt where 'Chitemene' methods were central to agriculture, skilled adult male labour was crucial in clearing the required areas for agriculture. Without this, villages suffered as soils rapidly degraded and food shortages ensued (Gann, 1969). This disruptive impact reached its apogee in the First World War when hundreds of thousands of African men were conscripted to be carriers to supply the front lines around Northern Rhodesia. Beyond the disruption caused by a massive out-flux of labour from villages, the toll on the carriers beggars belief:

"In the last half of 1917, the official death-rate in the carrier corps was 2 per cent per month, and the rate of 'wastage', which included disabilities, illness and desertion stood at 15 per cent per month. Deaths from dysentery, malaria and pneumonia were common, and carriers who attempted escape were summarily shot by their officers as examples." (Vail, 1983 p.230)

Even as the war ended, Spanish influenza, sleeping sickness and bubonic plague epidemics killed thousands of malnourished and exhausted Africans (Vail, 1983). Such was the burden imposed on Africans even before the First World War that a number of early members of the administration resigned in protest. This included 'Chirapula' Stephenson and, one-time administration head in North-Western Rhodesia, Colonel Harding. Many of the punishments meted out seemed to be self-defeating as Colonel Harding remarked in his memoirs, "I wondered why it is that, the first thing we do after subduing a native enemy is to deprive him of his means of living and his country of its most valuable product?" (Harding, 1933 p.82). As neither Harding nor Stephenson seemed inclined to show particular empathy for the suffering of Africans earlier in their career, the injustice being meted out must have been stark (Gann, 1969, Harding, 1933).

The colonial state in Africa was particularly interventionist in ways which went far beyond that expected of contemporary metropolitan states. It consistently moved to establish capitalist relations – creating markets, encouraging a cash economy and coercing labour into European enterprise (Lonsdale and Berman, 1979). When capitalist

\textsuperscript{122} Not least due to the mortality rates involved with the journey and the working conditions at their destinations (Gann, 1969, Luchembe, 1992, Perrings, 1979).
relations did not immediately take hold in Northern Rhodesia, the BSAC repeatedly and violently intervened to kick-start capitalism. The changes engendered by BSAC rule had a disastrous effect on existing socio-environmental relationships. In aiming to force Africans into the capitalist economy, many of the interventions insisted upon by BSAC directors had the effect of undermining the conditions of life in Zambia and with it, the potential for the tax revenues the company wanted to underwrite the costs of its own administration and labour for European enterprise. But this was perhaps less self-defeating than Colonel Harding believed. The forced entry of people into wage relations through disrupting previous modes of production is instantly recognisable to Marxist scholars. This is a relatively straightforward case of 'primary accumulation' or, accumulation by dispossession (Glassman, 2006, Harvey, 2003, Li, 2007, Mansfield, 2007). The BSAC state was an active factor of dispossession, forcing Africans into the cash economy in order to pay taxes. It repeatedly intervened to disrupt livelihoods and produce a steady supply of labour by forming a proletariat – or (often landless) working class – forced to survive by selling their labour. The coercive tools of the colonial state became an apparatus of accumulation (Lonsdale, 1977). Punitive raids on recalcitrant tribes became agents of redistribution as cattle and assets seized deprived Africans of their livelihoods and were sold to settlers (Hall, 1965, Macpherson, 1981). This was a form of rule directed almost exclusively towards ensuring conditions of capitalist reproduction through stimulating a cash economy and wage labour. Company rule was very close to a model of the state as the 'hand-maiden of capital', intervening largely to further the interests of international capital. However, upheaval created by the rush to turn Charterland into a successful extractive economy inevitably produced resistance.

Much of the research into African mining by Marxist scholars takes as its object of research this new working class, its formation and its struggles with European capitalists (Crisp, 1984, Parpart, 1983, Perrings, 1979, Van Onselen, 1976). However, the process of proletarianisation was far from straightforward in Northern Rhodesia. As Perrings argues, "if there is a discernible 'process' to proletarianisation [in central southern Africa] … it is often fitful, frequently abortive and almost always agonising" (Perrings, 1979 p.4). Taxation was a "blunt-edged" tool (Henderson, 1975 p.34). Producing a stable labour force through creating a section of African society that was entirely dependent on wage labour for survival was challenging; indeed, it was agonising. Much as colonial officials
imagined there was one, there was no linear relationship between taxation, wage labour and labour migration (Henderson, 1975). For Perrings, it is the low level of wages paid which ensured the partial incorporation of Africans into wage relations forcing them to maintain their subsistence agriculture in order to survive and generating the patterns of labour migrancy witnessed around mines across Sub-Saharan Africa (1979). When the rainy season began, the prime agricultural growing time, workers simply downed tools and returned to their villages (Gann, 1969, Van Onselen, 1976). The locus of explanation here, like with many Marxist analyses lies in the economic. However, this thesis argues that a range of reasons inhibited the BSAC's ability to resolve the labour question – many of them political. The following explores four of these – the colonial state's need to balance the disruptive consequences of dispossession with the threat of political upheaval, the limited means at its disposal, its reliance on African political structures and the inherent limits of relying on violence as a principal technique of power.

The limits to British rule

The demands of accumulation and those of control and stability were frequently at odds. The upheavals created by interventions aimed at aiding the extension of capitalist relations could rapidly undermine social cohesion and political stability. If pushed too far, experience showed that rebellion was likely. Many understandings of the state attribute to it the responsibility of being the 'factor of cohesion' in a given society; the state's legitimacy and authority – and thus, ultimately, broader political stability – deriving from being seen to act on behalf of the whole rather than the few (Jessop, 1990, Lonsdale and Berman, 1979). While contemporary BSAC officials argued that this was the case, few Africans saw BSAC rule as acting on behalf of anyone other than the white men (Macpherson, 1981). This lack of popular support and crude interventions in African societies made BSAC rule perilous and dysfunctional.

The looming threat of mass uprising weighed heavily on the minds of colonial administrators. Experience from across the region (and previously in East India) demonstrated that if particularly resented demands (usually those relating to taxation and labour) were imposed too harshly, violent rebellion could swiftly follow (Lonsdale and Berman, 1979, Ranger, 1969). In the first decades after the Berlin Treaty, bordering
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Tanganyika\textsuperscript{123}, Southern Rhodesia and Portuguese East Africa\textsuperscript{124} all witnessed violent rebellions by groups subject to particularly draconian impositions (Ranger, 1969). In Southern Rhodesia, the Ndebele uprising in 1896-7, coming 3 years after their supposed 'pacification', threatened the very foundation of Charter Rule both politically and financially (Hall, 1965). Arising from the particularly harsh treatment of the tribe following their subjugation, the Ndebele uprising cost the BSAC dearly financially and ended the lives of over 300 white settlers, 10\% of the settler population at the time (Gann, 1969). These uprisings gave lie to notions of African gratitude for and receptivity to British rule and provoked a great deal of soul-searching among disconcerted colonial administrators (Ranger, 1969). With a yawning chasm between what European officials believed they understood of African motives and behaviour and the material actions of Africans exposed, some of the early confidence and bluster of colonial administrators was shaken. The Acting Chief Native Commissioner in Southern Rhodesia reported on the Ndebele uprising that "this outbreak was got up as a matter of fact so quickly and in opposition to all our native lore, that we feel almost unable to venture any further opinion on natives at all" save, "that they are not for one moment to be trusted" (cited in Ranger, 1969 p.308-9). Acutely aware that they were outnumbered and in a hostile land, a note of paranoia set in for some administrators (Luchembe, 1992, Ranger, 1969). In the Mumbwa district in 1907 the head collector saw that ‘everybody was making spears’ (cited in Slinn, 1971 p. 368) and wrote to the Secretary for Native Affairs:

“\textbf{I have become convinced of an impending rising amongst the natives of the Kafue District … I believe the natives have not only plotted to refuse payment of tax this year, but they have also plotted to murder all the white population in their beds.}” (George Heaton Nicholls cited in Rotberg, 1965b, p.73)

Missionaries were evacuated, troops mobilised and the mine manager at Sable Antelope laid landmines and booby-traps in preparation for an uprising that never came (Rotberg, 1965b). The threat of mass uprising remained an important consideration for colonial authorities for decades.

\textsuperscript{123} Tanzania
\textsuperscript{124} Mozambique

116 Unearthing Rule
For the duration of Charter Rule, the colonial presence was only the thinnest veneer. Beyond a handful of District Officers, in 1912 the population of 1 million was 'contained' by an army of 775 Africans and 18 Europeans (Gann, 1969). While the numbers hide the vast asymmetry of firepower, the sheer absence of colonial presence over vast tracts of territory limited the impact that it could have. This colonial presence was a 'thin white line' in the central African bush with "large areas subject to token administration by lonely District Officers" (Clapham, 2001, Kirk-Greene, 1980). The demands of the BSAC to cover the costs of administration from a very low starting revenue base necessitated 'colonialism on the cheap' (Kilson, 1966). Experiments in Southern Rhodesia where the BSAC allowed settlers to collect taxes and administer justice on the company's behalf ended "with disastrous results" (Ranger, 1969 p.299). This experience of stretched resources was not unique to Northern Rhodesia – across central and eastern Africa "every company administration was grossly underfinanced" (Ranger, 1969 p.294). And Herbst notes that, "even at the height of colonialism governments penetrated into rural areas only in a partial and incomplete manner" (2000 p78). The 'incompleteness' of British rule in Northern Rhodesia in terms of manpower, knowledge and resources opened many opportunities for its evasion.

With the administration thinly spread across a large territory, distance from roads and Bomas was key in shaping the experience of colonial rule. Those populations distant from colonial centres and communication lines enjoyed a much greater degree of autonomy than those proximate to them (Fetter, 1983). In some cases, this went as far as entire communities forming autonomous enclaves in geographically remote areas (Isaacman and Isaacman, 1977). The application of colonial power was more broadly constrained by the geography and population density of the region. With district tours taking months in sparsely populated regions, the returns on imposing rule had to be weighed against the costs of conducting such tours. In areas with particularly forbidding geography, such as the Bangawelu swamp, problems of access severely curtailed the extension of colonial authority (Meebelo, 1971). Repeated accounts show the frustration of BSAC collectors arriving in villages only to find them largely deserted of men of tax paying age as the villagers hid in the surrounding bush (Isaacman and Isaacman, 1977, Macpherson, 1981,

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125 A number, Lewis Gann is at pains to point out, far lower than that of 4000 in neighbouring German East Africa at the time (Gann, 1969)
Meebelo, 1971, Siegel, 1989). With seven-foot grass surrounding villages in certain areas, evading the tax collectors was simply a matter of spotting their approach in time (Macpherson, 1981). It is in response to this that the seizing of wives became a common practice of tax enforcement. Populations migrated all over the region in the hope of finding less onerous forms of colonialism (Isaacman and Isaacman, 1977). As the hut tax began in Southern Rhodesia and progressed northwards, Colonel Harding became frustrated with repeatedly intercepting groups of tax evaders from the south entering Northern Rhodesia. Isaacman and Isaacman estimate that around 50,000 Africans fled to Charterland and Nyasaland from Portuguese controlled territories between 1895 and 1907 (Isaacman and Isaacman, 1977 p.51). Illness too played a role. Despite the advances of quinine, Colonel Harding reported that illness was hampering his efforts to impose colonial rule with "nearly every official has suffered from malarial or nemateurid fever." With the British forces hamstrung by limited resources, illness and a vast territory to cover, its capacity to establish and entrench capitalist relations through coercive means was limited.

The reliance on violence to enforce rule should be seen as a sign of weakness here rather than one of strength. With financial resources stretched, the BSAC could not afford to be patient in waiting for taxation and labour migrancy to be gradually assimilated and accepted; rapid results were required. Nor could the BSAC tolerate challenges to its supremacy, as had been experienced in colonial Zimbabwe from the Ndebele: these held the potential to bankrupt the BSAC administration (Ranger, 1969). As Johnston argues, "an initial weakness in military and financial power made it necessary to destroy rather than preserve" (cited in Ranger, 1969 p.299). During the conquest at least, there are plenty of examples of where the transition to British administration was largely bloodless if it was given time and there was ample opportunity for dialogue (Meebelo, 1971, Rotberg, 1965b). The very fragility of the BSAC’s rule helped create a situation in which brief bouts of violence were the norm. The early gusto with which Rhodes sent 700 men north in the pioneer column could not be maintained for long. As early as 1891 BSAC administrators were encouraged to "economise all along the line" and keep police costs to
a minimum (BSAC Administrator Currey cited in Ranger, 1969 p.294). This led the administration to rely on local (and initially poorly trained) 'native police' to back up its authority, further undermining its military strength. For de Kiewiet Hemphill, "underinvestment in decent administration… is sometimes worse than the most thoroughly arbitrary rule" (cited in Ranger, 1969 p.298); In the case of Northern Rhodesia, there is ample reason to believe that one led to the other.

Beyond the material limits a shortage of resources and geography imposed, perhaps the most central factor in shaping the impact of British colonial rule Africa was its reliance on African political institutions to mediate its demands to the broader populace. From a very early stage, the BSAC sought to co-opt African leaders to the aims of colonialism. In relying on African leaders to impose the demands of the new colonial administration, BSAC officials restructured the political landscape of Northern Rhodesia. As the Bomas spread out across Northern Rhodesia, a system of chiefs and village headmen was established through which British demands were communicated and enforced. Sometimes this followed existing patterns of political organisation. In many other situations however, allies of the British during conquest were elevated to new positions and incumbent resistant leaders deposed. These leaders were tasked with a variety of responsibilities under the 'White Chiefs' of the BSAC administration including tax collection, labour recruitment for road building and European employment, reporting crime, apprehending criminals, improving sanitation and general welfare in villages (Crowder, 1970, Rotberg, 1965b). Through co-opting African leaders to the aims of British rule, the BSAC sought to reduce the cost of administration. The consequences of this form of 'direct rule' were, however, politically disruptive and undermined the effectiveness of British rule (Rotberg, 1965b).

The fact that the majority of British rule was mediated through African leaders had important consequences for the ability of British authorities to impose their will. Africans and their rulers "exploited the need, weakness and ignorance of the colonialists" to curtail many of the intrusions of British rule (Ranger, 1969 p.301). For some African leaders, collaboration with the British enabled a strengthening of their power, particularly if they

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129 On defeating the Bemba, Codrington installed a new Paramount, explaining to the gathered village elders that he had personally appointed Kalonganofo as Chitimkulu's successor and "called on them to recognize him as such" (Rotberg, 1965b, p.47).
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were in areas subject to token administrative presence, brief wars of conquest and were politically entrenched prior to conquest. For the Lunda, these factors, and a canny engagement with British administrators, enabled Kazembe to refashion and re-centralise his government under colonialism, in many ways increasing its strength (Gordon, 2001). Hargreaves argues that most African rulers under colonialism "pursued clear purposes of their own – the maintenance of independence, the retention of power within their dominion, and the elimination of commercial rivals – and some were remarkably successful in harnessing the support of alien elements to the pursuit of these aims" (Hargreaves, 1960 p.108). For most of Northern Rhodesia, with its small, fractured polities, the scope for resistance was more limited.

African leaders proved difficult to control with many attempts at delegating rule largely failing to produce the desired effects on the Copperbelt. By the 1920s the Ndola District Officer was lamenting how many of the Chiefs and headmen "behaved badly", 130 were "not satisfactory", 131 or were spending large portions of their time drunk and appeared "to have little control over their people, the majority of villages paying practically no respect to these people". 132 Even one leader who at first seemed to fit the British image of a good African leader – Chief Nkana – described in 1922 as "a young man eager to do well" could not last a decade without disappointing the British administrators. In 1931 he was described as "not a satisfactory chief" and had his subsidy docked for "a drunken riot in a mine location". 133 In some cases, perhaps such as Nkana above, the individuals appointed were simply not up to the task, chosen more for their apparent enthusiasm for British rule than their capacity to lead or the recognition of such among Africans. The phrase 'misuse of authority' peppers reports on the actions of appointed chiefs and headmen as many apparently failed to represent British interests satisfactorily and spent large parts of their subsidies on beer. 134 In numerous other cases it seems reasonable to assume that some of the headmen's protestations about not being listened to were an attempt to negotiate with the British authorities – caught as they were between the conflicting demands of the British and the people they ruled. African leaders who refused to stand up to British

130 NAZ KSN 2/1 Ndola District Notebook p.151
131 NAZ KSN 2/1 Ndola District Notebook p.153
132 NAZ KSN 3/1/1 Ndola Reports, Annual reports 1919-23, Native affairs 1919/20 p.3
133 NAZ KSN 2/1 Ndola District Notebook p.152
134 NAZ KSN 2/1 Ndola District Notebook p.151-154
officials risked being deposed (Meebelo, 1971). This was the experience of Nkamba who was considered 'satisfactory' by British administrators. A view clearly not shared by those he ruled who attacked and drove him from their village.\textsuperscript{135} The ambiguous relationship between African leaders and British administrators is a difficult one to generalise and has been subject to much discussion (Gordon, 2001, Isaacman and Isaacman, 1977, Lonsdale, 1977, Ranger, 1969).\textsuperscript{136} One thing is clear, however: it rarely resulted in the direct transmission of British intentions to the African populace.

The BSAC's limited understanding of the populace was compounded by direct rule and further shaped the extension of its authority. The establishment of authority rests to a certain extent on producing a governable space – a space which the governors understand and thus intervene to engender the changes they wish to see (discussed in Chapter Six) (Scott, 1998). However, the BSAC's understandings of the people and society of Northern Rhodesia were based on (often racist) stereotypes and misunderstanding. \textsl{Firstly,} the BSAC misunderstood the nature of African pre-colonial polities. Assuming that they had entered the static land of tradition outside of history, the British officials attempted to maintain an illusory stability and in doing so generated political tensions (Berry, 1992, The Berlin Conference, 2003). To return to the final sentence of Jones' declaration ("In regard to all other things, men shall do as they have done, and as their fathers have done before them"); Africa was the static counterpoint to Europe's dynamism. Tribal relations were assumed to have been static for centuries rather than subject to much upheaval in the decades previous to the Berlin Treaty. As administrators attempted to chart the 'stable' relations between various groups and who was subject of which leader they ran into conflicting information (which they read as African lying) and made their own decisions as to how the lines of African authority lay (Berry, 1992).\textsuperscript{137} The model of authority imposed by the British was one based on territory (a mirror of European norms of sovereignty) where African chiefly authority was often derived from ties of kinship rather than exclusively from territorially delimited spheres of influence.

\textsuperscript{135} NAZ KSN 2/1 Ndola District Notebook p.153

\textsuperscript{136} This is further complicated by Traditional Leaders' role in independence movements where they often moved to undermine nationalist movements – much early post-independence literature thus sought to cast them as brutal despots who were largely instruments of colonial oppression (Gordon, 2001). This thesis argues that their role is much more ambiguous and clearly did not reflect a direct transmission of colonial will. Nor were they paragons of democracy, though they were often more accountable to those they ruled than British colonial officials.

\textsuperscript{137} NAZ KSN 2/1 Ndola District Notebook
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(Gordon, 2001). Pre-colonial political power was thus ordered along axes which did not map easily on to British models of authority. Stabilising this new political organisation was far from straightforward and the BSAC relied on coercive methods to maintain its rule. Methods which, by pushing the population to rebellion, could very easily undermine the conditions for continuation of BSAC rule. Secondly, by delegating the disciplining and governing of the majority of the populace they ensured that much of the information about the populace was mediated to them by interested parties who exploited this weakness to their own ends. For decades, the British authorities simply had little idea of who, and how many, they were ruling. As late as the 1920s, British officials, when asked about total populations and possible labourers in various areas of Northern Rhodesia, had to underline that many of the figures were essentially guesses.\(^{138}\) They knew how many people were paying tax, but this was far from knowing the total population with any degree of certitude. These gaps in knowledge had very real consequences for the kinds of authority the BSAC could impose and results it achieved.

BSAC rule had a corrosive effect on Northern Rhodesia 's political institutions. The rise of British rule, in most cases, saw the advent of a decline in chiefly power at both inter- and intra-tribal levels. As leaders signed up to the protection of 'The Great White Queen' they saw less need to respect previous institutions of paramountcy as Lewanika and others quickly discovered (Hall, 1965). Within the tribe, the authority of chieftaincy was undermined and the effectiveness and cohesion of these institutions threatened. Political cleavages within tribes were exacerbated as a "willingness to co-operate with imperialist forces often produced a crisis of authority" for African leaders (Isaacman and Isaacman, 1977 p.42). Where once "African leaders had raided others as allies of the British; now they coerced their own people as British subordinates" (Lonsdale, 1977 p.870). The policy of direct rule was later seen as a failure as the influential Hailey Report\(^{139}\) described its affect as:

\(^{138}\) NAZ RC/361 Conference on Native Labour by Mining Companies 1926

\(^{139}\) The 1,600 page Hailey Report ‘An African Survey’ was a watershed in Britain’s colonial policy. Published in 1938, it was wide-ranging and highly influential investigation into the relationship between Britain and ‘her’ colonies. The effect of the report was firmly to establish the idea that the aim of British colonialism was “the material betterment of backward peoples” leading to a much more welfare and development oriented form of colonial rule which took hold after the Second World War (Cell, 1989 p.505).
"To preserve the outward form of the indigenous systems, but to undermine the authority of the Chiefs both by making them dependent on the Administrative Officer and by taxation which obliged large numbers of men to leave the village for considerable periods of work" (Hailey, 1938 p.452) which led to a situation in which "the Chief had often degenerated in the eyes of his people into a kapitao\textsuperscript{140} in the employment of District Officers" (Ibid. p.454).

With the aim of keeping administrative expenditure to an absolute minimum, through a reliance on co-opting African political institutions, the BSAC managed to generate a great deal of political turmoil.

BSAC rule in Northern Rhodesia often relied on spectacular forms of violence to achieve its aims. The use of demonstrative forms of punishment such as hut burnings and punitive raids – often termed 'demonstrations' in official records – formed a central plank of the imposition of British rule. The aim was to simply terrify Africans into compliance. BSAC officials believed that, "no idea of power other than the actually visible can be comprehended by these savages" (Gielgud cited in Denny, 1957 p.337). The racist myopia which many early administrators brought to Northern Rhodesia held that the 'simple' Africans would understand nothing other than brute force. Seeing the inhabitants of Northern Rhodesia as savages legitimated their savage treatment.\textsuperscript{141} The great irony here is that the removal of brutality and 'savagery' was a key moral justification for British rule.

BSAC reliance on violence as a technique of power fundamentally undermined its ability to achieve its ambitions. The threat of violence rests upon its being believably carried out, as such, it is highly spatially and temporally constrained; put simply, it does not travel well (Allen, 2003). Relations dependent on this kind of backing were stretched to breaking point across the expansive Zambian bush. In the first few decades of colonial rule, tax and other colonial demands were avoided through simply moving beyond its immediate reach (Siegel, 1988). The widespread use of mobility (desertions, hiding in the

\textsuperscript{140} Translation of 'captain' from Portuguese meaning overseer or clerk, often used to refer to someone who acts at the behest of colonial demands (Kashoki, 1990, Thomson, 1955).

\textsuperscript{141} As John Stuart Mill had argued, "despotism is a legitimate mode of government in dealing with barbarians, provided the end be their improvement" (Mill cited in Drayton, 2000 p.227)
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bush etc.) as a response to colonial attempts to impose authority attests to the limits of colonial power. In a number of areas where violence as a technique of power is highly effective, – obstructing flows of people and things, such as slaves and ivory – BSAC rule worked well and achieved stated objectives. In other areas – such as promoting ideals of freedom, Christianity and commerce – violence was a far less effective tool. As Parpart argues, a large amount of 'complex social engineering' is needed to shift from pre-capitalist mode of production and "the needs to maintain social control for minimal cost" (1983 p.10). The crude methods of the BSAC lacked the nuance required to be truly effective in achieving its goals of rule. If profit on the part of BSAC can be seen as the measure of success, their efforts at turning Northern Rhodesia into a payable colony apparently failed. In 31 years of rule, the BSAC never paid a dividend (Gann, 1969). With access to "little capital and less skill" – and with many of its agents ideologically married to racism and numerous misunderstandings of African societies and people – the BSAC administration was shaped by its own numerous shortcomings (Gann, 1969 p.101).

The attempt to control Northern Rhodesia through predominantly violent means led to a state which was dissatisfactory for all. Rule was incomplete, highly resented, widely evaded, and fraying at the edges. Unable to foster a ‘second Rand’, the BSAC's attempts to keep administration to the bare minimum required to extract wealth had crucial consequences for the forms of control it could exert. In the absence of a successful extractive economy and a reluctance of Africans to pay taxes, rule in Northern Rhodesia was failing to provide a profit for BSAC. Violent imposition of taxes failed to answer the labour question and instead generated widespread disruption and simmering resentment (Luchembe, 1992). BSAC rule came to be seen as defective on a number of fronts. One official investigating disturbances and the growing Watchtower movement towards the end of BSAC rule saw the instability and alienation colonial rule was generating. He described the tenuous nature of British rule becoming clear during his investigations:

"As one listened to the pleas and evidence which showed that the old words, obedience to elders, headmen and Chiefs, obedience to the Boma, had lost their meaning, we realized the delicate and fragile nature of our hold over these people and at times we saw the abyss opening" (McDonnell cited in Fields, 1982 p.353).

BSAC rule fundamentally undermined the conditions of its own survival. Shaped by its ambitious aims and limited means (and even more limited understanding), a recalcitrant
geography and relying on violence and African rulers, brutal and uneven rule became the hallmark of the BSAC's administration in Northern Rhodesia. When Colonial Office rule began in 1924 it was apparent to many that things had to change.

Conclusion: 'The rule of the feeble'

Early British rule in Zambia was shaped by its means, its objectives and by the legacy of its mode of conquest. Initially aimed at simply pre-empting other European claims to the area and maintaining as limited a presence as possible; colonial rule was a 'thin white line' in the African bush. As colonial rule progressed however, so did its demands. The colonial state then intervened to impose taxation and encourage Africans into wage labour. With these increasing demands came a need for greater control. To achieve this control, the BSAC largely relied on African political structures and the use of coercive force. These, along with flawed understanding of Africans and African societies, produced a variety of negative consequences for Africans which they actively sought to resist. This resistance, combined with the limited resources available to BSAC officials, a forbidding geography and a highly dispersed population, led to an uneven and arbitrary form of rule. The legacy of conquest, both in terms of manpower and mode of intervention, is clear here – rule was violent, sporadic and carried out with constrained resources. The brutality of BSAC rule brought resistance and criticism in the UK and proved a rallying cry for those who argued against the Charter. Thompson, an ardent believer in the 'White Man's burden', described Rhodes' record as having been "written in blood" (Thomson, 1898 p.10). Writing in 1898, he argued that the BSAC rule "has caused terrible bloodshed; it has brought unrest into the whole of South Africa … and it has cruelly wronged and oppressed those natives who have been placed under its control" (ibid. p.8). The violence of the BSAC regime undermined it from the start. Rhodes' involvement in the Jameson Raid, the brutal response to the Ndebele uprising and ongoing violence all attracted criticism in Africa and the UK. It was a slow transition from a brutal politics of conquest to one which engaged more constructively with the African populace. As Lonsdale argues "colonial rule would never lose this ambiguity in the politics of conquest, this lamination of a larger order with parochial disorders" (Lonsdale, 1977 p.870).
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The BSAC was engaged in "the ambiguous project of promoting change while supervising continuity" (Lonsdale and Berman, 1979 p.490). The BSAC was caught in a balancing act: caught between the desire to engender significant changes in the socio-economic landscape and with limited means to do so; caught between the need to turn a profit through European enterprise and dislodging African labour from villages and the need to maintain control over the populace; and caught between a desire to impose its supremacy and a handful of people at its disposal. Limited in numbers, knowledge, resources and reliant on African collaborators and spectacular violence, this form of early colonial rule in southern Africa has been termed 'the rule of the feeble' by Phyllis Martin (Martin, 1983). The limited resources and approach of the BSAC could never overcome the "vast structural and practical difficulties in simultaneously pacifying, taxing and establishing a presence in a territory with a small and scattered population and poor communications" (Henderson, 1975 p.27). The result was a range of contradictions and problems which the state struggled to resolve over the coming decades.

Fundamentally, the BSAC had failed to either develop an extractive economy or a sustainable colonial state. Successful natural resource extraction in Northern Rhodesia required both capitalist economic relations and political stability. These are by no means separate, but neither was fully achieved by the BSAC. The labour question remained unresolved. Northern Rhodesia showed every sign of becoming a burdensome "Gladstonian nightmare" (Berger, 1974 p.1). Through its clumsy interventions and ambitious agenda, BSAC rule generated social, political and ecological disorder. This rule did, however, lay the basis for the further penetration of capitalist relations into Northern Rhodesia. Much as BSAC interventions disrupted socio-environmental relations in Northern Rhodesia, they also re-ordered them: progressively alienating Africans from their environment and placing control over and access to resources in the hands of Europeans. The BSAC colonial state found much of its mandate in encouraging the capitalist economy through taxation and claiming dominion over increasing swathes of the environment. The alienation and dispossession generated under BSAC rule, however unsustainable, were a key step in producing new regimes of access to and control over natural resources in Northern Rhodesia. Subsequent decades saw a change in the means and level of control through repeated interventions and shifting techniques of power

142 A colonial territory dependent on the UK for financial support.
which, eventually, created a context in which copper mining could take off rapidly. The beginnings, however, were hardly auspicious.

Before exploring how the Colonial Office changed the forms of rule at work in Northern Rhodesia and resolved the labour question, the next chapter details the rise of modern mining in Northern Rhodesia. From its inception, the development of the state in Northern Rhodesia was intricately tied to the development of extractive enterprise. Colonial rule consistently worked to alienate Africans from their natural environment and place control and access to desirable natural resources in the hands of Europeans. The mining industry came to play a key role in spurring the growth of the state both in terms of providing a fiscal resource base but also in terms territorialising British rule in Zambia.

The next three chapters cover the period from 1924-35, examining the rise of big mining on the Northern Rhodesian Copperbelt and its consequences for colonial rule, and the role of the colonial state in supporting the rise of the Copperbelt. The rise of mining in the 1920s and 1930s finally gave the Northern Rhodesian state a much needed flow of revenue through which it could engage in stabilising its rule. Until the advent of large-scale mining, Northern Rhodesia's prospects were limited. A number of obstacles remained – transport, labour, mineral processing technology and, most importantly, the absence of large ore bodies in the Northern Rhodesia. The key change within the mining industry in transforming Northern Rhodesia from the graveyard of mines to the birthplace of a global commodity hub was proving the presence of large bodies of copper ore. This was a challenging process. Rendering the 'hidden' mineral riches of the Northern Rhodesian subsurface visible and legible required the application of substantial financial, technological and human resources. The next chapter explores this process of geological exploration in the 1920s which paved the way for the rise of the Copperbelt.
Chapter Five: Seeing the Copperbelt – science and the legibility of nature

Introduction

As Northern Rhodesia exited the First World War, its future as a colony looked bleak. A sparsely populated land-locked country with few resources and little investment had poor prospects in a policy climate which demanded that the colonies pay their way. Despite the arrival of the railway, Northern Rhodesia had failed to become the intended mineral extractive space and was relegated to being a labour reserve for the more prosperous mining economies to the north and south (Henderson, 1975). BSAC interest concentrated on Southern Rhodesia where gold mining, after struggling to start, was beginning to take off; though on a modest scale in comparison to early expectations of a ‘second Rand’ (Van Onselen, 1976). The policy wind was changing in the UK. Chartered Companies were no longer in vogue and the long-standing lobby for direct Colonial Office administration of the empire was gaining traction (Gann, 1969, Hopkins, 1976, Madden, 1959). On the ground in Northern Rhodesia, the settler population was increasingly hostile to the BSAC and demanding a voice in the territory’s government (Slinn, 1971). The ongoing financial drain of administration made the BSAC only too happy to offload its burdensome responsibilities (Hall, 1965). As the 1920s began, so too did preparations for the transfer of administrative authority over Northern Rhodesia from the BSAC to the Colonial Office. This was completed in 1924 following the 1923 signing of the Devonshire Agreement.¹⁴³ In this transfer, the BSAC retained control over the mineral rights to much of Northern Rhodesia, arguing that these had always been its commercial rather than administrative property.¹⁴⁴ Copper prices were on the rise again and, in the run

¹⁴³ RH MSS. Brit. Emp. s.412 Papers of the Central Mining and Investment Corporation Limited 1/1 Devonshire Agreement 1923
¹⁴⁴ A number of the claims pre-dated, and were the basis for awarding, the Royal Charter and so were arguably independent of it (though the treaties which held sway by this time had all been collected after the Charter was awarded) (Gann, 1969, Slinn, 1971). Further, the BSAC had always been at some pains to, administratively at least, maintain a dividing line between the BSAC’s administrative and commercial functions; separate accounting books were used and records treated differently (though this was equally a response to the knowledge that records for the administrative functions were officially public records and destined for the National Archive) (Hall, 1965). Further, all prospecting licenses were worded as contracts between the BSAC and the prospector and “not dependent on the statute” (Williams cited in Slinn, 1972
up to the transfer of power, the BSAC unilaterally issued a number of very large special prospecting licenses. This policy change, while unpopular on the ground at the time, proved decisive in transforming the mining industry and gave birth to a mining boom on the Northern Rhodesian Copperbelt.

This chapter explores the development of the mining industry in the 1920s, a decade that witnessed the transformation of the Copperbelt from colonial backwater to booming global centre of commodity production – a period when the 'torch of industry in central Africa' began to blaze on the Northern Rhodesian Copperbelt (Letcher, 1932). This was no mean feat. The first half of the decade saw a prospecting operation perhaps unparalleled in size and scope in the world at the time. Capital poured into Northern Rhodesia as prospectors walked millions of miles and deployed a range of expensive and cutting-edge technologies to uncover what the Rhodesian Mining Journal described as "the world's great subterranean storehouses of wealth" (1932, p.457). As deposits were found and charted they were floated on the LSE as separate companies and development began spurring a construction and labour boom in the latter years of the decade. Production began in earnest in the mid-1930s, but the 1920s was the period in which the Northern Rhodesian Copperbelt was firmly placed on the mining map. Changing BSAC policy paved the way for large-scale prospecting operations on the Northern Rhodesian Copperbelt. These prospecting efforts demonstrated the presence of previously unseen aspects of the region's geology. Bringing new and modern prospecting techniques to the area which enabled the Northern Rhodesian subsurface to be 'seen' in new ways, these prospecting operations revealed copper sulphide ores which had been "masked by deceptively poor-looking outcrops" (Wilson, 1992 p.132). This chapter explores this process of prospecting on the Northern Rhodesian Copperbelt. Two prospecting operations are explored in detail: (1) the first concession floated as the Rhodesia Congo Border Concession (RCBC) and (2) the first attempt to use geological science to generate a complete geological map of mineral resources on the Copperbelt on the Nkana

p.28). However, the ease with which the BSAC's 'commercial' claim went unchallenged (and as Chapter Two showed, there were plenty of grounds on which to challenge the validity of BSAC's treaties giving mineral rights) aroused much suspicion in later years and was the subject of repeated investigation. Slinn argues that suspicion about the alliances between the Colonial Office and the BSAC is all smoke without fire and that "the best explanation would appear to be that the potential importance of the minerals was not appreciated, and haste to achieve a settlement and unwillingness to upset the status quo overrode any doubts there may have been" (Slinn, 1971 p.373). Struggles over mineral rights and the consequences for subsequent mining legislation, regulation and revenue flows are taken up in Chapter Seven.
Concession. Through examining the efforts of these two prospecting operations, many of the challenges of mineral discovery are revealed and explored. The chapter concludes by showing how this knowledge was translated into the language of investors in the global mining press and the construction boom spurred by mine development in the late 1920s and early 1930s. Before all this, the chapter begins by discussing the politics of knowledge creation in the colonial endeavour.

The legibility of nature

As natural resources are not natural, but represent "social appraisals" of nature, the process of producing these appraisal merits attention (Roberts and Emel, 1992 p.249, see Chapter One). Appraisals of nature as natural resources are not power- or value-neutral, they are based on specific understandings of nature which both reflect, and work to reorder, power relations and control over resources. In the colonial period, this had two facets. Firstly, through the production of these appraisals an understandable and legible environment is produced as "nature is made to appear within a space of order and organization and … made available for calculation and commodification" (Gregory, 2001 p.93). These appraisals work to render resources legible, visible and – through the imposition of 'scientific order' – calculable (able to be represented in numerically quantifiable ways which could then be used in calculations), enabling nature to be understood and represented in ways which encourage and support investment (Gregory, 2001, Scott, 1998). In order for nature to become understood as an investment prospect, the extent of the resources needs to be able to be seen or visualised, and in distant investment markets to boot; it needs to be measured in ways which enable and encourage economic evaluations (Braun, 2000). These appraisals worked to bridge the gap between distant natures and metropolitan centres of economic and political coordination. Secondly, these appraisals frame and systematize aspects of nature as resources in ways which legitimate – and often implicitly necessitate – their appropriation by conquering powers. These appraisals seek as much to produce the world they describe as they do to reflect it. They work as much to call into being an economic geology and regime of access to and control over it, as they describe the materiality of the Northern Rhodesian subsurface. Networks of colonial science in the nineteenth and early twentieth-centuries were the central medium through which these appraisals were carried out and circulated.
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The nineteenth-century saw the ascendance of a knowledge-producing institutional architecture in the UK with a global reach. Learned societies based in London such as the Royal Geographical Society (RGS), the Imperial Institute and the Royal Botanical Gardens all became hubs of international learning, gathering, coordinating and organising knowledge from around the world (Drayton, 2000, MacKenzie, 1990a, 1990b, Stafford, 1990, Worboys, 1990). These networks of colonial scientists worked to both enable and legitimate new forms of intervention by simplifying nature using rationalities which made it accessible to colonial power (Drayton, 2000, Scott, 1998). James Scott describes the process of simplifying complex realities, such as the colonial natural environment, as rendering 'legible' (Scott, 1998). Rendering legible classifies and orders the complexity and chaos of the natural environment into a 'rationalised, standardised and administratively more convenient format' (Scott, 1998 p.3). Through the knowledge produced by European scientists, colonial nature was simplified to produce both natural order and disordered nature: 'desirable' and 'undesirable' natures, 'normal' trends and processes and aberrations, and accentuate that which was important and that which could be safely ignored (Gregory, 2001, Scott, 1998). This rendering legible is a central process in the conversion of nature from the biophysical environment to an object of human action. Through simplifying and standardising, the natural world is made amenable to intervention and manipulation. The networks of colonial science flourished as the knowledge produced served both political and commercial aims, animating the civilising project of imperial power and transforming newly acquired territories into profitable annexes to empire (Drayton, 2000). Foreign unruly natures might be tamed to the path of development and their resources unlocked. Scientific descriptions, charts and formulae offered an appearance of secure understanding upon which to intervene, invest and re-order social and environmental relations (Stafford, 1990). Networks of colonial science actively conjured a space which could be known and thus acted upon confidently.

145 Gregory argues that it is this scientific way of seeing which is characteristic of colonial understandings and reorderings of nature: "The modern domination of nature depends on the successful production of a space of constructed visibility within which three objectives have to be fulfilled: 'nature' has to be held at a distance, set up as an object, and structured as a more or less systematic totality" (Gregory, 2001 p.92). The legacy of the Enlightenment here is clear (Mitchell, 1990, Scott, 1995). Humans are intrinsically separate from an external nature, not a part of it. Through the application of rationality and understanding, humans can come to know this separate nature and then act upon it. Nature is seen to possess an intrinsic (but separate from humans) unity which can be understood and represented clearly.
The knowledges produced by the vast projects of ordering and classifying nature undertaken in the colonial period not only enabled the assumption of European control in new territories, they also legitimated it. The 'constructed visibility' of distant natures was central to the colonial enterprise as it projected an apparent objectivity and placed the capacity to see the 'truth' of things firmly in the realm of European scientific knowledge (Gregory, 2001, Mitchell, 1990). The knowledges produced "fostered the impression of the colonies as primitive places inferior to Europe" (Stafford, 1990 p.84). In seeing the 'truth' of colonial natures, authority is claimed and other knowledges are implicitly dismissed as inferior. It was clear to colonial conquerors that the resources of newly annexed territories were not being – and could not be – effectively used by their current owners who possessed inferior knowledge (Scott, 1998). Drayton (2000) argues that this myth of the 'profligate native', combined with the idea that Western scientific knowledge allowed the best use of nature, helped give British imperialism its moral identity. The capacity of science to deliver progress and development was evidence of "the progressive and altruistic virtues of the conquerors" (Drayton, 2000 p.230). Evangelical and scientific aims were blurred, the knowledge of European science was seen as "capable of unlocking redemptive and regenerative forces on a vast scale" (MacKenzie, 1990b p.6). Of nowhere was this seen as more true than Africa, where the continent was to be 'delivered' "by calling forth her own resources" (Sir Thomas Fowell Buxton cited in Coupland, 1928 p.6). If the best use of resources came from knowledge, and the peoples of Africa were characterized by their ignorance, then it followed that the best use of nature came from the assumption of control by Europeans who possessed the requisite knowledge and insight. Dispossession of Africans was a precondition for progress in Northern Rhodesia. The country's development lay in placing the reigns of the Northern Rhodesian environment firmly in the hands of the European conquerors. In the case of the Northern Rhodesian Copperbelt, the science of geology was instrumental in both legitimating this dispossession and unlocking the 'redemptive forces' of territory.

As Alfred Sharpe, Joseph Thomson and George Grey presented accounts of their travels to gatherings of the RGS in London then, they conjured a new geographical imaginary in

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146 In the specific instance referred to in this quote, Africa was to be delivered from slavery. However, the redemptive power of exploiting resources to 'civilise' Africans and deliver them from all manner of evils remains to this day a powerful trope.
south central Africa of abundant resources ripe for the taking and a region in need of the British civilising influence (Grey, 1901, Sharpe, 1892, 1895, 1896). To take two examples of Joseph Thomson and George Grey, these accounts both described the human and physical geography they encountered, but also produced an account which – firmly echoing Livingstone's message of the 'two C's' of Christianity and Commerce – implicitly called for further colonial penetration into the area. Thomson filled in a "blank space" on the map "dear to the heart of the explorer" (p.97) for the RGS, describing "the magnificent possibilities" of abundant flora and fauna, "great herds of cattle" (p.114) and rivers that sweep "swiftly and majestically" through the "beautiful landscape" (Thomson, 1893 p.110). Thomson also offered powerful justifications for the British presence in central Africa, pegging his travelogue firmly to the central moral justification for colonialism – the abolition of slavery. Consistently throughout the account, Thomson counterposed the romanticised beauty, abundance and possibility of the physical landscape to the savagery meted out on the populations living on it, consistently highlighting evidence of past violence and slavery.¹⁴⁷

Grey took a more utilitarian approach, noting the agricultural ("exceedingly fine, well-watered, stock-raising and agricultural country" (p.64), hunting ("good game country" (p.77) and mining ("iron is found to exist in large quantities nearly everywhere" (p.69) potentials of the areas through which he travelled (1901). Grey (notably, only after describing the landscape and geography) then turns to the peoples, describing venal, 'treacherous' tribes which "are as savage … [and] as far removed from any form of civilization as can be found in central Africa" (p.71), ridiculing their traditions (1901). He also describes their mismanagement of the environment – either through deforestation or over-hunting game (Grey, 1901). These travelogues should be seen as early efforts in a process which was to transform regimes of access to and control over resources in the country. By describing and ordering the Northern Rhodesian landscape in terms of its economic potential and its people in terms of the savagery and backwardness, these early explorers are working to produce an understanding of the African interior as a space which invites colonial penetration on commercial and moral grounds. Their 'scientific' descriptions worked to produce a new economic and political order – an order which reflected the economic and political objectives of European colonialists. This knowledge

¹⁴⁷ Thomson mentions but plays down his role in starting a smallpox epidemic in the region.
became the basis for further colonial – economic and political – penetration into Northern Rhodesia. This chapter, however, focuses on later processes of producing knowledge about nature in Northern Rhodesia in the 1920s, specifically attempts to understand the geology of the Copperbelt.

Geology was advantageously placed at the intersection of commercial and governmental interests in the colonial period, particularly in a territory where mining was at the heart of the ambitions of the colonial state (Stafford, 1990). The exploratory nature of geological science performed multiple functions in extending claims to space and enabling the penetration of capitalist relations. Stafford argues that "geological maps symbolised regularity and improvement: they graphically charted the European conquest of the peripheral wilderness" extending the dominion of colonial power (Stafford, 1990 p.73-4). In symbolically taming the wilderness of the African interior, scientific maps of the Northern Rhodesian subsurface produced a stable and detailed understanding upon which plans for manipulating the newly visible natures could be made. Geological science appraised nature in ways which held commercial significance. The geological maps drawn up in the nineteenth century not only charted the potential contours of strata and geological formations; they charted the probability of the occurrence of specific potential mineral deposits, deposits which held economic significance. As Bruce Braun argues, geological knowledge linked nature with distant investment markets as the "geological language of probability speaks in the tongue of an economic and political language of possibility" (Braun, 2000 p.25). Through the work of prospectors and geologists, the Northern Rhodesian subsurface was produced as a 'resource' and made amenable to specific forms of analysis and understanding. Importantly here, what was produced was difference. Gone was the homogeneity of the flat, gently undulating plateau of the Copperbelt, rendered into sight is its 'inner architecture', its distinct strata, layers, contours, ruptures, continuities, folds, faults, varying mineral properties, and with this, its potential economic value (Braun, 2000, Gregory, 2001). The concentration of minerals within an ore could be calculated and then weighed against the costs of extraction and transport and the current (and future) market value of the mineral. Geology enabled the Copperbelt’s minerals to be:

“Inserted into the taxonomies of geological and mineralogical science and mapped in space … [and] located in hierarchies of cost, risk and return and
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presented to potential investors in the City of London." (Bridge, forthcoming [2011])

Through the practices of economic geology, elements of nature were able to move into the logics of capital as a commodities which could be priced and exchanged on global markets (Castree, 2003).

The process of producing 'scientific' knowledge was not always straightforward. There were good reasons why three decades of prospecting had not rendered the 'inner architecture' of the Northern Rhodesian Copperbelt visible for all. The subsurface is, by its very nature, hidden from view. Viewing it therefore, required effort and extrapolation. Generating this knowledge with the degree of accuracy and certainty required for large-scale investment in a remote tropical backwater was a challenge. As the RCBC took over rights to explore the subsurface of vast swathes of Northern Rhodesia they took on these challenges. To meet them, the RCBC brought a wealth of capital and a new, thorough, systematic approach to prospecting in Northern Rhodesia. This comprehensive approach produced a clarity and detail of knowledge backed by scientific testing which had never been brought to bear on the Northern Rhodesian Copperbelt previously. The RCBC approach proved to be remarkably successful. Within three months of beginning operations, the first presence of extensive rich copper ores – the 'river lode' near Nchanga – had been detected (Drysdall, 1972). In 'proving' the presence of rich copper ores, the RCBC opened the door for further investment. The following section explores the early years of the RCBC operation exploring the challenges they overcame to produce the forms of knowledge required to enable significant investment. The subsequent section examines the efforts of geologists to develop a definitive geological map – a master key to unlocking the geological secrets of the Northern Rhodesian subsurface. In considering these two efforts, the practical and theoretical challenges of 'knowing' the Northern Rhodesian underground – of rendering the invisible visible – are engaged (Bridge, 2007, Howitt, 2001).

A new era of prospecting

Between 1922-5 135,000 square miles of the surface of Northern Rhodesia – nearly half of the territory – came to be covered by six vast prospecting licenses; by 1940, this had increased to 203,000 square miles or some 70% of the country (See Figure 5 below)
Seeing the Copperbelt

(Drysdall, 1972). These new licenses granted exclusive access to large areas of territory for a period of five years on condition of a minimum annual investment in the area (Coleman, 1971). This was a radical departure from the previous approach adopted in 1912 of allowing anyone willing to pay for a £1 license to prospect practically anywhere in the territory and caused significant outcry amongst those currently prospecting. This approach had failed to deliver a new mining industry and it was increasingly recognised that the numerous obstacles to prospecting could only be overcome by well financed prospecting groups (Gann, 1969). Such groups required extensive exclusive prospecting rights in order make substantial investment worthwhile. The first of these new concessions was floated as the 52,000 square miles Rhodesian Congo Border Concession on February 16th 1923 for £150,000 (Coleman, 1971). With this size, a working capital of at least £45,000 and with a promise of an annual investment of at least £9000 for five years, the RCBC license ushered in a new era of mineral prospecting in Northern Rhodesia (Bridge, 2007, Coleman, 1971). The effort to unlock the secrets of the Northern Rhodesian subsurface was unprecedented. Hundreds of geologists, engineers and prospectors and thousands of Africans employed between 1923-40 laboured on one of, if not the, largest mineral prospecting effort of its kind for the time. The concessions came to total 203,000 square miles of which 156,000 square miles (54% of the entire country) was prospected in detail meaning that prospectors walked over 3,000,000 miles through the Northern Rhodesian bush looking for minerals in this period.

148 NAZ B1/61/3 Part 2, Correspondence on issuing prospecting licenses BSAC 1923-4; NAZ B1/90/1 RCBC correspondence 1922-6
149 NAZ B1/61/3 Part 2, Correspondence on issuing prospecting licenses BSAC 1923-4
150 Roughly six times the size of Wales.
151 The Rhodesian Congo Border Concession was floated by Copper Venture Ltd. and included amongst its directors Chester Beatty (mining consultant turned financier), Walter Broadridge (a UK engineer) and PK Horner (former Union Miniere mines manager) who were all linked to Edmund Davies – through the Bwana Mkubwa mining company (LSE Selection Trust papers ST/temp/B/20 Selection Trust history summaries 1914-59).
152 LSE Selection Trust papers ST/temp/B/20 Selection Trust history summaries 1914-59
153 Drysdall puts the figure at 166 geologists and 34 prospectors (1972). However, given the reliance on contractors for many of the technical aspects of prospecting such as aerial surveys, drilling and geophysical prospecting, this seems likely a substantial underestimate.
154 This figure is based on teams of two Europeans walking 12 miles each per day. These teams could prospect “between 85 and 100 square miles per month” (Rhodesian Anglo American Limited, 1929 p.30). Assuming 5 days off a month for plotting data, rest, hunting and similar this gives each team (25 days x 12 miles x 2 people) 600 miles walked per (average) 92 square miles plotted, giving 1,017,391 miles walked for the 156,000 square miles prospected in detail. This, however, ignores that most sources say each European was flanked 100 yards either side by two African assistants. It seems fair to assume that though it may not always have happened at first, this practice became fairly widespread as Africans became experienced in this kind of work (all sources apart from Raymond Brook’s accounts point to the
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(Drysdall, 1972). Besides the efforts on the Rhodesian Congo Border and Nkana concessions, the Luangwa concession spent £470,000 on prospecting 93,000 square miles of a 135,000 square mile concession between 1926-38 (Drysdall, 1972). Large-scale, modern, capital-intensive mining had arrived on the Northern Rhodesian Copperbelt.

Prospecting in Northern Rhodesia, prior to the arrival of RCBC was hampered by both physical and theoretical obstacles. The geology of the Northern Rhodesian Copperbelt was almost entirely unknown in comparison to the ores found across the border in Congo. Compared to its northern neighbour, prospecting for mineral deposits in Northern Rhodesia was an uphill struggle. Firstly, there were few outcrops. The ore was

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use of Africans to spot outcrops on traverses). This would put the figure at around 3,052,173 miles walked. This figure is still conservative as Gann puts the daily distance travelled at 20 miles and it omits the porters and gun-carriers who would have accompanied European prospectors on their traverses, the distances walked to and from the prospecting area before roads were cut and any walking involved in follow up activities to the traverses like pitting, trenching and drilling (Gann, 1969).

155 Source: (Rhodesian Anglo American Limited, 1929)
underneath laterite soils with prospectors complaining that "the country is so densely forested that prospecting is a difficult and monotonous task" (Rhodesian Anglo American Limited, 1929 p.10). In Katanga, the ore literally stood out from the landscape "in large bare kopjes or hills standing prominently above the level of the country" which "obviously attracted attention at once" (ibid.). Ore was more difficult to see in Northern Rhodesia than its northern neighbour. Secondly, what outcrops there were gave little indication of richer ores below. Where, in Congo, surface outcrops contained rich mineral deposits, in Northern Rhodesia "mineral indications on the surface of copper deposits are, almost without exception, negligible" (Rhodesian Anglo American Limited, 1929 p.12). Thirdly, it was assumed that the geology on the Northern Rhodesian Copperbelt matched that on the Congolese side where ore grades tailed off sharply at depth. Experimental shafts sunk beneath the water table in the Congo had demonstrated that "the tenor of the ore above water level was representative of the orebody as a whole" (Rhodesian Anglo American Limited, 1929 p.11). This proved to be a crucial theoretical error. In assuming, not unfairly, that the geology on the southern side of the border was largely analogous to that on the northern side, early prospectors placed themselves at a massive disadvantage. They were looking for Congolese ores in Northern Rhodesia and thus simply overlooked deposits which did not match their view of copper ores in this region. When the search took on a different focus, and used a different register, the economic landscape of Northern Rhodesia was rapidly transformed.

**The Rhodesian Congo Border Concession**

When the RCBC’s manager in Africa, Raymond Brooks, arrived on the Northern Rhodesian Copperbelt in early 1923, it was not much to look at. Accompanied by an accountant, an engineer and his wife, Brooks took up residence at the only place with accommodation in the region – the Bwana Mkubwa mine (Brooks, 1944c). This party dramatically increased the European presence in the region. At Bwana Mkubwa, Brooks was one of six Europeans; at the nearby seat of government Ndola, there were seven families of Europeans. There was one road in the area which connected Bwana Mkubwa with Ndola, cut as much so that the manager of Bwana Mkubwa could ride his motorcycle to and fro as for the transportation of ore from the troubled mine (ibid.). Brooks began organising his operations from an office in the back of a small private home (Brooks, 1944c). He was largely unsupported by the government of the time.
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Brooks’ request for assistance in cutting and clearing roads in the area met with a terse response: "Mr Brooks, I will base no part of our programme for the development of NR on the doubtful possibility of finding mineral deposits of importance" (Brooks, 1944a, p.80). Few, outside of a smattering of ever-optimistic mining investors, held much hope of finding economically significant mineral resources on the Copperbelt. That same year, 1923, Northern Rhodesia's total copper output was 6,600 tons; 30 miles away across the border in Katanga, the annual copper production was over 80,000 tons (Coleman, 1971, Schmitz, 1979).

For the most part, the RCBC relied on the same rudimentary methods used previously by prospectors which were only able to locate ore bodies with a surface expression. However, the RCBC brought a new scale to the enterprise and was "rigidly systematic" which meant little was overlooked (Drysdall, 1972 p.59). The RCBC's 'systematic approach' had two facets – systematically covering the entire concession on foot looking for evidence of mineral deposits, and systematically visiting every African settlement and offering large rewards for anyone who led them to outcrops. The archive is largely silent on which was more effective. As prospectors were employed – twenty in total – the first task lay in cutting a road to the concession acquired in Nkana, 35 miles away (Brooks, 1944c). Brooks then dispatched ten two-man teams, each with around 20 Africans as helpers, into the field every dry season who conducted traverses of specific areas looking for evidence of minerals such as soil and vegetation changes ('dambos' or 'copper clearings' where copper content in the soil stunted vegetation growth – particularly, large trees) and rock outcrops. These teams cut and then burned a base line through the bush and then burned two parallel lines 5-7 miles either side of the original line (Rhodesian Anglo American Limited, 1929). With stations marked every quarter-mile on all these lines, traverses were conducted between corresponding stations on these strips "using a prismatic compass and a wheel equipped with a bicycle cyclometer" noting any changes in vegetation, outcrops and other geographical features such as streams, taking samples where pertinent (Brooks, 1944b, p.83, Rhodesian Anglo American Limited, 1929). Walking around 12 miles each per day these teams could "thoroughly

156 This is not strictly true as many accounts, with the common penchant for 'the lonely prospector' myth, paint the prospecting process as one carried out by individuals with the dozens of Africans involved written from the process. However, from the geological reports from the RCBC prospecting parties that remain, the providence of the original find is not always clear. Raymond Brooks was at pains to point out the importance of African help in finding copper outcrops (Brooks, 1944b).
Prospect between 85 and 100 square miles per month" (Brooks, 1944a, Rhodesian Anglo American Limited, 1929 p.30). Rudimentary technology was paired with a structured approach to produce an unprecedented amount of information about the Copperbelt. ¹⁵⁷

The innovation the RCBC brought to enlisting Africans to help find outcrops was twofold – firstly they paid a great deal more than previous prospectors, and secondly they armed Africans with geological hammers. Working on the assumption that the local peoples would have seen any interesting outcrops they showed some samples of the types of rock they were looking for and then offered £5 (the equivalent of an annual salary at the time) "for disclosure of any formation in place that showed even minor evidences of copper staining or other metal content" (Brooks, 1944b, p.84). By contrast, previous prospectors had offered beads, Calico and blankets in exchange for such information (Bradley, 1952, Coleman, 1971, Gann, 1969). The hammers enabled Africans to collect samples of outcrops which their own tools could not. After three years of prospecting along these lines the RCBC made 141 new discoveries of (predominantly copper) ore occurrences (Brooks, 1944a). ¹⁵⁸

The RCBC efforts revealed an abundance of mineral outcrops with traces of copper minerals. The prospectors had no doubt they were in 'copper country' (Brooks, 1944b). These weak mineralisations indicated that they may have been close to areas with more concentrated mineralisations – levels which may have made the ore economically attractive. Pitting, trenching and drilling were then used to explore beneath the surface. As the prospecting project demonstrated the presence of copper ores, the RCBC increased its use of modern cutting-edge technologies to locate minerals. In particular, the RCBC were the first to conduct drilling on the Northern Rhodesian Copperbelt and pioneered the use of electro-prospecting and aerial surveys for prospecting in Africa (Rhodesian Mining Journal, 1932). All of these technologies however, were rarely straightforward in their operation in the bush and often unreliable in their results.

¹⁵⁷ In an interesting reflection of the 'old and new' approach used by the RCBC these teams paired a university-trained engineer with an experienced bush prospector. The latter tasked with ensuring their survival and managing relations with African assistants and local peoples while the former planned the traverses and plotted the information gathered (Brooks, 1944b).

¹⁵⁸ Many of these were very small deposits. Bancroft derisively commented later that samples of these 'occurrences' sometimes sampled whole thing (Bancroft, 1961).
Given the usefulness of variations in vegetation in indicating copper content in soils and thus the rocks underlying the soils, and the difficulty of travel in the region, aerial surveys were ordered to quickly assess vegetation over large areas. In 1926-7 the Aircraft Operating Company photographed 12,000 square miles of the Northern Rhodesian Copperbelt to look for 'copper clearings' (see Figure 6) (Rhodesian Mining Journal, 1932, Walker, 1929). This technique however, was more expensive and less effective than had been hoped. Firstly, insurance regulations required that planes flying at less than 10,000 feet should always be within 10 miles of an emergency landing ground (Bancroft, 1961). This required the clearing of landing strips at 20-mile intervals along the length of the area to be surveyed. Clearing these strips was costly and arduous as they were liable to flood in the rainy season and cleared vegetation quickly grew back. The regular appearance (and rapid reappearance) of termite and ant hills, which were resistant to dynamite blasting, made levelling the ground for the landing strips cumbersome (Bancroft, 1961, Drysdall, 1972). The cost of this meant that the RCBC directors quickly abandoned plans to photograph the entire concessions and settled for its eastern-most

Figure 6: The aerial survey team employed by RCBC

159 From (Walker, 1929 p.49)
160 Many of the earliest prospects pegged on the Copperbelt like Roan Antelope were discovered using this method.
161 While unlikely the first surveying of its type in the world, this was pioneering use of the relatively recent technology of aerial photographic surveys which were first regularly used during the First World War (Cronin, 2007). Large aerial surveys for mineral prospecting in Northern Rhodesia predated similar efforts in Canada for example (Cronin, 2007).
162 These strips were not an excessive precaution – the survey experienced two 'forced landings' in its early operations (Walker, 1929).
portion (Brooks, 1944b). Further, the resulting pictures either revealed little – during the rainy season clouds obscured the ground and during the dry season smoke from grass fires did the same – or were too general to be of use. The clearings which were found could also be caused by swampy soils and hill slopes which both inhibited tree growth (Hunter, 1946, Walker, 1929). Further, for the copper content of the underlying rock to affect vegetation, the soils needed to be relatively thin. 95% of ores in Nchanga were covered with forest and the Roan Antelope ore continued two miles beyond the dambo which had originally given prospectors clues to its presence (Walker, 1929). The leading Anglo-American geologist of the time, J. Bancroft, described their information as "misleading rather than helpful" (Bancroft, 1961 p.86).\(^{163}\) As technology and infrastructure improved, the aerial survey came to be a regular fixture of mineral prospecting in the area (Garlick, 1953-4). At this early stage, however, it was of limited use.

Pioneering use was also made of using electrical conductivity for prospecting.\(^{164}\) These geophysical methods initially seemed promising as they accurately traced the limits of some lenses of pyritic ore in the Lusemfwa district (Bancroft, 1961).\(^{165}\) This success led to a £10,000 contract being extended to Mr. Broughton Edge to prospect for minerals on the Copperbelt in 1926 (Bancroft, 1961, Coleman, 1971). However, they were of limited use in finding the sulphide-bearing shales which were the focus of investigation. The "fine-grained disseminated nature of the mineralisation" meant its electric-conductive properties were not substantially different for the surrounding rock and its distance from the surface made it more difficult to detect (Coleman, 1971, Drysdall, 1972 p.59). Geophysical prospecting was, in the end, "a complete failure" (Bancroft, 1961 p.86).

Perhaps the most significant technology the RCBC brought to bear on the Northern Rhodesian Copperbelt which had not been used previously, was drilling. As surface outcrops were an unreliable guide to what lay beneath, 'seeing' the subsurface was very important. This inability to trace ores at depth had proved a serious obstacle to the establishment of mining prior to the First World War. Without drilling, measuring the

\(^{163}\) Though the photos proved of later use for mapping the region and surveying settlements (Parsons, 1929)
\(^{164}\) The practice of using electrodes and electric current to test the varying electrical conductivity of subterranean mineral bands.
\(^{165}\) LSE Selection Trust Papers G/29 Report on W Selkirk's visit to Rhodesia 1926
extent of ore bodies at depth had only been possible through digging a shaft down to the ore – an expensive and labour intensive task (but one which had been repeatedly undertaken, if only to relatively shallow depths). With drilling, directly sampling ores deep underground was possible and gave a much clearer picture of the extent of ore beds. Drilling also made it much easier to prospect below the water table which had proved an important physical barrier previously.\textsuperscript{166}

More fundamental an obstacle however, was the belief that prospecting much below the water table was pointless anyway. Believing that the geology of the Northern Rhodesian Copperbelt would closely match that of the Congolese Copperbelt, prospectors and miners believed that all ores of worth would be found above the water table. When the Copper Venture Syndicate (CV) first took a holding in the Copperbelt, before they applied for the larger concession which was floated as the RCBC, they bought the rights to a small claim called Nkana (see Figure 5 above). This claim held some promise, with evidence of African copper mining, malachite outcrops, and some development shafts with ores assaying at 3-6\% copper that had been intermittently developed for a number of years.\textsuperscript{167} When CV took over the property, a total of 22 prospecting pits and shafts had been dug but only four of these had attempted to go beyond the waterline (usually only by a few metres) and only one had gone deeper than 100 feet.\textsuperscript{168} So deeply ingrained was the belief that there was little purpose in looking further, and so costly was it, that it was not attempted.

Drilling required substantial investment. While drilling overcame the liminal water table with comparative ease, substantial financial backing was required to carry out a drilling programme on the Copperbelt in this period. The equipment was expensive and drill operating a skilled task. Drilling cost around 30 shillings per foot and a team could drill approximately 300\textsuperscript{169} ft per month. As many of the minerals which eventually came to be mined often lay over 500 feet down, this meant that drilling a single hole to 'prove' the

\textsuperscript{166} Operating below the water table proved massively problematic for the 'Big Concession' where floodings repeatedly shut down operations (NAZ A3/33/4 Northern copper company, A report by Mr Bentley 1910).

\textsuperscript{167} Likely 3 years, but perhaps more since it was first discovered in 1905 (Drysdlall, 1972, Macmillan, 2005) LSE Selection Trust Papers G/37 Nkana Northern Rhodesia 1922

\textsuperscript{168} LSE Selection Trust Papers G/37 Nkana Northern Rhodesia 1922

\textsuperscript{169} LSE Selection Trust Papers G/29 Report on W Selkirk's visit to Rhodesia 1926
existence of ore could take 2 months and cost hundreds of pounds. Aside from the costs of buying and operating the drill, simply moving them around on the Copperbelt was problematic. For example, moving the first drill to Nchanga (which discovered the fabled 'river lode') took the combined efforts of a British engineer employed specifically for the job and 128 labourers nearly a month to drag the 5-ton drill and boiler a distance of 53 miles across 'virgin' Northern Rhodesian bush and the Kafue river (see Figure 7 and Figure 8) (Brooks, 1944c).

![Image of RCBC boiler on wagon](https://example.com/figure7.jpg)

**Figure 7: RCBC boiler on wagon**

The drill revealed two important things – the mineral content of an ore and the specific location of that ore in space. Drilling, however, is not a straightforward task and frequently proved to be a technical challenge and fallible as a way of 'knowing' the underground. Early drilling on the Northern Rhodesian Copperbelt struggled to locate samples and indicate their copper content confidently. Drilling gives the capacity to sample rock along a specific vector into the subsurface. By measuring the distance along

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170 Source: National Archives of Zambia Digitised Maps and Images Collection No.11
this vector it is possible to say where the sample was originally located. However, accurately fixing the original location of the sample was not always easy. Firstly, making the drill go in a consistently straight line is difficult when the ore being drilled through is not uniform. The differing angles of the beds and the transition from soft to hard ores can deflect the drill from its path, introducing uncertainty as to where in space the sample is from (Squirrell, 1953-4). Further, the drill vector could bypass subterranean ores. The drill sample is, by necessity, very thin along the vector. If the drill path fails to intersect the vein of ore, the area will be believed, potentially falsely, to contain no economically significant minerals.

Figure 8: Diamond drill at Nchanga

The key information which drillers were looking for was the average copper content of specific section of the subsurface. The difference between 'payable' ores and those which would be abandoned could be as little as a 1% of mineral concentration so accuracy was of paramount importance. Early drilling used churn drills which, as their name suggests,

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171 Source: National Archives of Zambia Digitised Maps and Images Collection No.32
grind up the ore at the drill point. Water is pumped down the hole and the ground up ore returns to the surface as a sludge. These drills, by not retrieving single-continuous rock samples failed to detect the presence of small concentrations of sulphides making them seem more diluted than they actually were (Parker and Gray, 1935-6). This happened at Chambishi where the use of a churn drill diluted the samples obscuring the presence of 35 million tons of rich ore (Parker and Gray, 1935-6). Drilling thus switched to diamond or shot drills which retrieve core samples in addition to sludge. These too faced potential problems. The core could break and/or slip down the barrel of the drill giving the impression that the core came from a different place than anticipated.\(^{172}\) When the core fragmented, or much of it was lost, it was easy to then over or underestimate the mineral content of the ore. The mineralised ores were particularly prone to these problems with the core often fragmenting when the sulphide vein was reached.\(^{173}\)

Drilling was on the Northern Rhodesian Copperbelt not straightforward. It proved to be a painstaking process where the drill bit inched forward four feet at a time followed by pumping water until it ran clear to make sure all the sludges had been caught and then slowly removing the core.\(^{174}\) The unreliability of the drill core made the recovery and accuracy of sludges particularly important. However, sludges too were not free from error and often gave misleading results. \textit{Firstly}, as drill holes reached depth or travelled through a fragile ore, rock and sediment from higher up the hole could cave into the drill hole diluting the sludge with sediment from a different place along the drill vector than anticipated.\(^{175}\) \textit{Secondly}, the oil used to lubricate the drill collected the copper sulphides they were seeking to measure, further changing the picture of copper content in the recovered samples.\(^{176}\) \textit{Thirdly}, if the drill path crossed a geological fault, the sludges could simply drain down the fault and never be recovered (Squirrel, 1953-4).\(^{177}\) \textit{Fourthly}, the sludges were dried in tins over open fires which if not constantly stirred could cause the copper sulphides to oxidise, tainting the sample.\(^{178}\)

\(^{172}\) ZCCM 16/2/1e PHC 26 Notes on drill sampling
\(^{173}\) ZCCM 16/2/1e PHC 26 Notes on drill sampling
\(^{174}\) ZCCM 16/2/1e PHC 26 Notes on drill sampling
\(^{175}\) ZCCM 16/2/1e PHC 26 Notes on drill sampling
\(^{176}\) ZCCM 16/2/1e PHC 26 Notes on drill sampling. Note – this is the same property of sulphides which makes the floatation method possible – see footnote 201.
\(^{177}\) ZCCM 16/2/1e PHC 26 Notes on drill sampling
\(^{178}\) ZCCM 16/2/1e PHC 26 Notes on drill sampling
These challenges meant that even after 30 years of experience of drilling in the area, core recovery was often around 33% and many holes were abandoned if it was considered 'bad drilling ground' (Squirrell, 1953-4). Drilling was problematic and "exceptional precautions" had to be taken to ensure accuracy, but it remained the most reliable indicator of subsurface geology (Hunter, 1946 p.606). As individual drill samples could be unreliable, dozens were often commissioned if the area seemed promising. Even then, drilling would only trigger further development as none of the prospecting techniques used could replace sinking a development shaft. It was only comparing what was indicated by drilling and what was found when a shaft was cut that the accuracy of drill sampling could be derived (Hunter, 1946). It was in the process of deep drilling that prospectors first encountered the extensive veins of copper sulphide ores which came to form the basis of future Copperbelt development. These sulphide ores, while still lower grade (3 – 4.5%) than those of the copper oxides across the border, were far more amenable to concentration and processing technologies and thus very commercially valuable. These finds sparked a flurry of interest in the region which brought new concessions, new capital and new prospectors and an ongoing prospecting effort. Adjacent concessions were snapped up by the groups already active in the region and, as opportunities for expansion receded, groups were forced to make the most of the concessions they had. It was in this vein of being unable to gain access to new ground and thus being forced to concentrate efforts on that which could be access, that the geological mapping of the Nkana concession was conducted.

**Geologising the Copperbelt**

In 1923, the geologist Russell Parker was dispatched to reassess the development work carried out, 20 years previous, at the Roan Antelope and Rietbok claims (Beatty, 1931). Parker was under explicit instructions to look for the possibility of sulphide ores underlying the surface oxides (Beatty, 1931). Exploring their development shafts, 179

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179 The mining literature involves some controversy over exactly whose idea it was to look for sulphides under the oxides. The candidates include: Raymond Brooks (Brooks, 1944a), PK Horner (Wilson, 1992), Chester Beatty (Beatty, 1931) and Russell Parker (Coleman, 1971, Parker and Gray, 1935-6). The truth is unclear, Parker himself denied it being his idea when asked about it directly at the Institute of Mining and Mineralogy in the 1930s with the President dismissing this as false modesty (Parker and Gray, 1935-6). The idea was probably not quite so extraordinary as is sometimes portrayed, as it was mentioned by one of the first prospectors in the area in an article published in 1908. Farell, who was head prospector for
Parker noted that the original workers had not noticed that the width of the mineralised shales increased with depth and increased in concentration. Importantly, working from a visual register shaped by Congolese outcrops, they simply stopped digging the shaft when the green oxidised ore petered out. Parker sampled the ore at the base of the shaft and found rich copper sulphides, implying that they underlay the exposed ore (Wilson, 1992). Working on the possibility that the two parallel reefs may be a syncline (an inverted arch of ore) they began a drilling programme between the two outcrops at intervals of 1000 feet (Coleman, 1971, Wilson, 1992). They quickly discovered that a wide mineralised band of ore continued at a depth of 500 feet (Wilson, 1992). This band of ore however was simply a grey shale, unremarkable in appearance and not widely recognised as copper-bearing ore. Its copper content only came to light because drill samples were routinely assayed for copper content. Parker's discovery transformed the search for copper in Northern Rhodesia. All previous prospects were now subject to deep drilling to see if the weak surface deposits hid rich sulphides.

With almost every single surface outcrop demonstrating copper content logged by the RCBC – and these outcrops numbered into the 100s – the challenge lay in deciding which of these merited further exploration. Exploration concessions were time-limited and drilling was still costly. With Parker's discovery a new approach was taken to the Nkana concession. Instead of looking for old mines and trying to see if they were worth following up, the entire Nkana concession would be subjected to geological mapping. It was assumed that the same stratigraphic series of rocks occurred all over the concession, that the same sulphide ores would be overlain and underlain by the same rocks. If the inner architecture of the entire concession could be mapped, then they could divine where the mineralised ore existed but showed no surface manifestations. Geology, and scientific geology, was to be brought in to develop a new view of the region's resources. In a three-year programme, Parker worked on the most comprehensive mapping of the geology of the area under the supervision of Anton Gray and TF Andrews (Parker and Gray, 1935-6). However, divining the geological structure of the concession with any degree of

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180 Tanganyika Concessions when they began development at Kansanshi in 1901, describes their shaft sinking as actively looking for sulphides under the oxides they found there (Farrell, 1908).

181 LSE Selection Trust Papers G/29 Report on W Selkirk's visit to Rhodesia 1926

182 ZZCM 16/2/1e PHC 25 Geological reports and reconnaissance maps Nkana concession

ZZCM 16/2/1e PHC 25 Geological reports and reconnaissance maps Nkana concession
detail was deeply problematic, even when backed with substantial resources and expertise. This process in Nkana gives some insight into the challenges faced in transforming the Northern Rhodesian subsurface into a legible realm.

The aim of the geological mapping was conclusively to prove the presence or absence of minerals through a scientific survey of 18,000 square miles by a team of trained geologists. With three years on the concession, the process was structured over three dry seasons from 1926-9: the first aimed at noting every single outcrop and surface occurrence of every single mineral, the second followed up with detailed pitting and mapping, the final with pegging claims for future exploration (Parker and Gray, 1935-6). These much-reduced claims would be then be drilled. The approach used was similar to that of the RCBC three years earlier. Using streams as baselines, Parker and his colleagues paced the concession radially from base points. As there were very few outcrops, soil and vegetation became important as indicators of the underlying rocks. Neither of these were totally reliable. The geologists struggled to establish 'rules' for which vegetation occurred on which type of rock.\textsuperscript{183} Soils transitioned slowly around geological borders and, where slopes were involved, soils moved so as to further complicate the picture.\textsuperscript{184} When outcrops were discovered, the geologists were frustrated by their inability to date the rocks due to the absence of fossils. Confused by the folds, faults and discontinuities of the nature they were charting, they laboured to generate a comprehensive stratigraphic series which would place the ores they discovered in relation to each other physically and chronologically. As they noted the samples they found they treated them as unique specimens adopting local names 'Lufubu Schists' and 'Muva Series' which they later struggled to correlate into a single comprehensive schema covering the entire concession.\textsuperscript{185}

After some effort, they came to develop the 'Roan Series' which documented the rocks which overlay and underlay the mineralised shales found and could then theoretically be used to trace the occurrence of the copper deposits across the concession (Parker and

\textsuperscript{183} ZZCM 16/2/e PHC 25 Geological reports and reconnaissance maps Nkana concession
\textsuperscript{184} ZZCM 16/2/1e PHC 25 Geological reports and reconnaissance maps Nkana concession
\textsuperscript{185} ZZCM 16/2/1e PHC 25 Geological reports and reconnaissance maps Nkana concession
Gray, 1935-6).\textsuperscript{186} However, while general zones of rock occurrences near the surface (but under soils) were known, the boundaries between the rocks were often unclear.\textsuperscript{187} When the production of difference and clarity was the aim, this was something of a flaw. The final map after three years of effort is prefaced by six pages of clauses and conditions about the uncertainty of the final results. The detailed geological reports from different areas of the concession attached as appendices are riddled with further clauses and riders on the certainty of findings.\textsuperscript{188} Of most concern was that, using mainly surface indications, they found no new deposits worth mining.

The recommendations of the report hinged upon a weakness of geological knowledge which highlighted the science's taxonomic roots: the geologists had no idea where the copper came from. This failure of theory, of understanding geology as a dynamic rather than purely taxonomic science, had very real economic consequences. There were two theories – the 'hot water theory' and the 'cold water theory'.\textsuperscript{189} The 'hot water theory' held that the copper came from fluid movement from below related to igneous intrusions after the shales were deposited. If this theory was correct then future claims should centre on the areas near known granitic rocks or, alternatively, the whole area as there may be intrusions which had no surface outcrops. The 'cold water theory' held that meteoric water had effectively washed coppers down from the surface and they had accumulated (for an unknown reason) in the shales mined at Roan Antelope.\textsuperscript{190} If this theory was correct then the whole area should be retained as the shales could theoretically be found underlaying most of the concession.\textsuperscript{191} Cutting-edge geological theory proved itself largely unable to confidently predict where ores may lie and therefore where to claim. Instead, what predictions were made were riddled with so many qualifyers as to give the impression that the suggestions made were simply best guesses.\textsuperscript{192} The decision of which areas of the concession to retain was left to the directors in London.

\textsuperscript{186} ZZCM 16/2/1e PHC 25 Geological reports and reconnaissance maps Nkana concession
\textsuperscript{187} ZZCM 16/2/1e PHC 25 Geological reports and reconnaissance maps Nkana concession
\textsuperscript{188} ZZCM 16/2/1e PHC 25 Geological reports and reconnaissance maps Nkana concession
\textsuperscript{189} ZZCM 16/2/1e PHC 25 Geological reports and reconnaissance maps Nkana concession
\textsuperscript{190} Subsequent research points to the copper deposits being laid at the same time as the original sediments (Dixon, 1979).
\textsuperscript{191} ZZCM 16/2/1e PHC 25 Geological reports and reconnaissance maps Nkana concession
\textsuperscript{192} Though they were, ultimately, fairly accurate (Coleman, 1971).
Producing a known space

In indicating the occurrence of large bodies of copper sulphides on the Copperbelt and paving the way for further development, prospecting was ultimately a success. While many of the individual techniques either failed or only unreliably indicated the presence of ores, a rough picture was none the less painted which gave enough confidence to enable further investment. The resulting recommendations from the Nkana effort led to the drilling of an area near the Mufulira stream. This rapidly became the richest ore body discovered on the Copperbelt at the time. Tellingly however, the decision to drill was not taken on the basis of a single indicator, and still less on the speculations of geologists, but on the correspondence of a number of indicators. Copper deposits at a nearby spring, thin vegetation and inferences drawn from the geological mapping were all required before the decision to drill could be taken (Parker and Gray, 1935-6). The decision to drill led to the decision to sink a development shaft and then, and only then, was a full-scale mine planned. The work of these geologists, for all its flaws and hesitant conclusions was hugely influential in shaping understandings of the geology of the Northern Rhodesian Copperbelt. It remained the largest systematic effort in producing a geological map in the region for many years with the 'Roan Series' becoming a definitive register for future mapping (Hunter, 1946).

Evidently, the strength in the application of scientific approaches to prospecting was not the reliability of individual techniques, but their ability to gather, organise and coordinate information. Even where theories about ore formation were woefully ill-equipped to deal with a new mineralogy in the African interior far-removed from its European roots, geological science was able to systematise enough proximate indicators of the presence of minerals to enable further investment. Geological science's strength and weakness lay in its comparative and standardising approach. This approach meant that encountering new mineralogical formations was particularly challenging and apt to yield false assumptions. The geology of the Northern Rhodesian Copperbelt was assumed to echo that of the Congolese Copperbelt, its main, and nearest, comparator. This belief led prospectors to ignore the possibility of ores below the water table which were not evident above it. However, this same comparative approach gave the scientific approach the capacity to abstract and organise large and diverse forms of information. Where the visual register of 'green ore' failed, it was replaced by a new visual register of numbers. The copper content
calculated in laboratories enabled the copper to be 'seen', quantified and abstracted from the Northern Rhodesian subsurface and understood on the LSE. The search for rules and systems, the abstraction of elements of nature into proximate comparable indicators, enabled Northern Rhodesian nature to be understood in ways which were readily legible across geographical space. The systematic approach which made extensive use of crosschecking for errors, triangulation and aimed for an ever-improving accuracy and fixity of knowledge, gave rise to a stable and reliable enough picture for investments to be made. Through combining and coordinating different indicators, the geologists, engineers and prospectors of 1920s Northern Rhodesia rendered African nature, quite literally, visible in new ways and in new places. In assembling diverse and unique information points, the scientific endeavour was able to turn the Northern Rhodesian subsurface into a seemingly objective 'systematic totality', which could be assessed by investors and planned upon by managers and board members in distant London (Gregory, 2001).

In the final abstracted report and maps the process of knowledge creation and much of its inherent uncertainty was omitted. While "every geologist when he drew a line on a map contributed to it out of his imagination and presumed a certain continuity", in the final artefact, these leaps of imagination are silenced (Hallimond in Parker and Gray, 1935-6 p.338). These leaps of imagination, the widespread lack of topographical certainty in the traverses, and the uncertainty about mineral concentrations and extents were subsumed by the charts, maps and tables which scientific prospecting produced. The final product projected a coherent, ordered, stable space with a continuity of knowledge about nature – a ‘systemic totality’ – upon which action could be decided. Writing this uncertainty from the record, dividing the data from its origins, is central in producing the objectivity and universality of scientific knowledge (Mitchell, 2002). In asserting this objectivity, this supremacy, alternate ways of knowing, upon which the scientific knowledge often depended, were obscured. Without this claim to the authority of science, the prospectors were just simply interested travellers strolling through the Northern Rhodesian bush; with it, they were agents of human progress, carving and burning the contours of the future mining industry into the Northern Rhodesian landscape.

If scientific uncertainty was omitted from the final maps and representations, so too were Africans. The centrality of Africans to identifying, locating, and guiding Europeans to
mineral outcrops is largely unmentioned, their presence in prospecting parties a footnote, their role in guiding European prospectors to outcrops commonly ignored. If they were mentioned, Africans were more likely to be portrayed as an obstacle to the production of scientific knowledge than its aides. Further, any prior claims which Africans may have had to the land and subsurface charted are ignored in these representations. Symbolic dispossessment of Africans of the rights to the land had already occurred when concessions were granted. It was only further underlined in the creation of vast reams of data and maps and representations which erased African presence from the landscape. This was the empty frontier discussed in Chapter Three – there for the taking. If African presence in the mining areas was mentioned, it would be to underline the proximity of a ready source of labour. In the understandings of the Northern Rhodesian Copperbelt which circulated in London in the 1920s, African labour power, as much as the mineral reserves which underlay it, was a commodity.

Even as development gathered pace at a number of mines, the mining press initially dared to only obliquely describe potential riches rather than give confident figures of the ore reserves at individual mines (S. A. Engineering and Mining Journal, 1929). The geologists on the ground were well aware of the uncertainties of their knowledge and kept to the language of 'indicated' reserves. In London, however, these quickly became 'proved' reserves (McGregor, 1930). The uncertainties of knowledge production were further written from the record when presented to the investing public. At the first shareholders meeting of the newly floated Nchanga mine, for example, reserves were described as "definitely proved". At this stage, and with a history of trumped up claims which failed to bear out, the mine investors, and particularly copper miners, were distinctly cautious (Brooks, 1944b). While the wholly erroneous claims of the Southern Rhodesian boom were gone, the silver-tongue of the salesman was still required to promote the new mines. To counter previous hesitancy, the early 1930s saw a promotional blitz of articles on Northern Rhodesian copper fill the pages of the world's mining press. Some of these articles kept themselves to purely the technical aspects of extraction. Many others however, lauded Northern Rhodesian copper hagiographically

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and sought (again) to communicate the findings through narratives of past riches. Chester Beatty, a key financier of a number of the mines, invited comparisons to ancient tales of mineral abundance in Africa in one article in the mining press:

"There is an account of over-production of copper at the time of Ramses II. Apparently the production of the copper mines of the Sinai Peninsula exceeded all expectation because they speak of the enormous quantity stored in thousands of bars at the palace. In fact, it must have looked like a yard at one of our refineries." (Beatty, 1931, p.521)

Where the Southern Rhodesian gold boom looked to Solomon's Ophir, Beatty evoked to another successful and wealthy African empire. The analogy to the British Empire here is far from subtle. Beatty went as far as claiming that the mines of Northern Rhodesia held 20,000,000 tones of copper in its ores – 28% of the world’s known copper reserves at the time (Beatty, 1931). This was clearly an exaggeration given the uncertainty of much of the information on which the claim was based. However, equally clear was that eight years of prospecting in Northern Rhodesia had uncovered enormous supplies of copper rich ore. The Economist "foresaw a magnificent future for the distant north" (cited in Gann, 1969, p.209). The Northern Rhodesian copper rush had begun.

The rush to development

In October 1923 when RCBC geologists James Beaton and Andrew Osterburg discovered copper sulphide ores at the 'river lode' near Nchanga stream, few held much hope that the achievements of the Congolese mining industry 30 miles away across the border would be matched in Northern Rhodesia (Silwunge, 1974). By the late 1920s the Copperbelt was in a headlong rush to develop new copper producing mines. Between 1927-1930, the labour force on the Copperbelt trebled from 10,000 to 30,000 as part of a massive construction effort building large mines across the Copperbelt (see Figure 10 below) (Gann, 1969). In late 1930, seven years after Parker scraped the bottom of a development shaft and found traces of copper sulphide, Roan Antelope was preparing to treat over 2,000,000 tons of ore a year (see Figure 9) (McGregor, 1930). With steeply
Chapter Five

sloping bands of ore at mineralisations around 3.3% they expected to produce 50,000 tons of copper a year.\textsuperscript{196} As they estimated they had around 30,000,000 tons of copper ore reserves, all the construction was being conducted so as to enable a rapid doubling of this amount (McGregor, 1930). By 1932, £17,000,000 had been spent on mines development and Northern Rhodesian copper output had reached 88,600 tons with 3,000,000 tons of raw ore being extracted from the subsurface (Berger, 1974, Hailey, 1938, Perrings, 1979). In total around £35,000,000 was spent bringing these mines to production (Hunter, 1946).

![Figure 9: Nkana Mine around 1930\textsuperscript{197}](image)

With capital flows of this scale and with much infrastructure already in place, many of the diseconomies imposed by nature and distance which hampered earlier development could be overcome (Bunker and Ciccantell, 2005). Chapter Three detailed these problems. To recap, the active hydrology, the limits of prospecting technology, the limits of mining and ore processing technology, and struggles with transportation and difficulties with securing both skilled and manual labour had all undermined earlier efforts at profitable mining.

Two of these – labour and prospecting – required sustained and unique efforts to overcome in Northern Rhodesia and are thus subject to particular attention in this thesis. The rest of these obstacles were resolved through increasing scientific knowledge,

\textsuperscript{196} The steeply sloping bands of minerals made shaft mining easier as a single vertical shaft could reach large portions of the ore – rather than requiring multiple costly shafts.

\textsuperscript{197} Source: (Letcher, 1932)
investigation and technological progress, paralleling similar advances worldwide. As this chapter has shown, it was just such changes in the technology, knowledge and capital flows which generated a new approach to prospecting and overcame earlier obstacles. The same is true for transportation, managing water flows and ore processing – these former obstacles were resolved in either the intervening years or through the prospecting process. What follows here is a brief illustration how these technical and economic problems were resolved by the mid-1920s, while the following chapter lays focus on how the social and political problem of labour was resolved.198

Transportation in the 1920s was still relatively expensive – accounting for 25% of equipment costs – but earlier efforts had laid the framework in which the mines of the 1920s could thrive.199 *Firstly*, a railway linking Northern Rhodesia to the coast was up and running and had been largely paid for by the Katanga copper mines in the intervening decades. As part of the construction effort, branch lines of the railway were laid. This reduced the costs of both inputs and exports. With the Wankie Colliery now in full production fuel costs were much lower. The branch railway allowed large equipment to be brought directly into the mines, simplifying logistics dramatically. This, in turn remedied the problem of ground water flooding mines as the arrival of the railway allowed for larger boilers and pumps to be brought to tackle the volumes required.200

Further, RCBC and other concessionaires had cut hundreds of miles of roads to aid prospecting in the 1920s which smoothed non-railway transportation around the area (Brooks, 1944b, Letcher, 1932, Rhodesian Anglo American Limited, 1929). The advent of the combustion engine and the ready presence of a rail network gradually overcame many of the transportation costs and difficulties which sunk Kansanshi and the 'Big concession'. *Secondly*, mineral-processing technology had seen crucial advancements in the intervening period. Specifically, the floatation method which enabled the easy concentration of sulphide ores, made the low mineral concentrations (relative to Congo)

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198 For detailed discussions of the changing technologies here see Barger and Schurr (1944) and, specifically on the Copperbelt, Coleman (1971).
199 LSE Selection Trust Papers G/29 Report on W Selkirk's visit to Rhodesia 1926
200 LSE Selection Trust Papers ST/TEMP/G/51 RACM progress reports with plans 1928-32, November 1929
of less consequence (Barger and Schurr, 1944). Ease of concentration dramatically reduced the costs of smelting and further processing making sulphides, and especially the relatively high-grade sulphides of Northern Rhodesia, particularly economically attractive (Schmitz, 1997). These advances in transport and mineral processing fundamentally shifted the economic balance of extraction. They both mattered little, however, when the ores lay undiscovered.

![Figure 10: Employment on copper mines 1926-38](image)

One continuing challenge was the supply of labour. Where mines before the First World War had ground to a halt for a number of months each year as Africans returned to their villages, the new mines experienced only minor fluctuations. In the late 1920s it was seen as an irritation rather than an obstacle, and by November 1931 the manager of Roan Antelope, D. Irwin, described the supply of African labour as "extremely plentiful". Irwin's explanation for this change of affairs was the creation of a single organised labour recruitment agency, the Native Labour Association (NLA), for all the mines on the

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201 The key advance in copper ore concentration in the 1910s was the introduction of oil into the floatation process. The oil sticks to sulphides which means that as air is bubbled through the floatation tank, the sulphides float while other minerals sink (Barger and Schurr, 1944).

202 Source: CO 799 Northern Rhodesia Annual Departmental Reports 1925-38, Mines

203 LSE Selection Trust Papers ST/TEMP/G/51 RACM progress reports with plans 1928-32 November 1931
Copperbelt. This is no doubt partly true. However, given the previous recalcitrance of this problem for three decades, it requires further explanation. Labour recruitment agencies had been used before to mixed effect in earlier decades – labour recruited through agencies was often less reliable with higher desertion rates and shorter contract lengths than 'voluntary' labour (Henderson, 1975, Spearpoint, 1937). This was simply not purely a problem of organising increased demand more effectively, supply needed to be increased too. The following chapter explores this question of increasing supply in light of the changing nature of colonial rule in the 1920s.

The challenges faced by mining now took on a different hue. Where many of the previous problems had lain above the surface, the majority now lay below the surface. The rock was 'new' and behaved in unexpected ways – caving or only breaking into large cumbersome blocks when blasted – complicating extraction and transport to the surface (Beatty, 1931). Northern Rhodesian timber proved unsuitable for mining, either rotting or quickly becoming termite food. For a brief time, the sticky materiality of the Northern Rhodesian subsurface clogged the wheels of extraction. As the mines development programme gathered pace however, large resources of capital and expertise were brought to bear on the problems and they were ironed out. New blasting techniques were used and lumber imported. Miners are often quick to point out that all mines are unique, facing individual technical challenges; the mines of Northern Rhodesia were no exception. This was no longer the ramshackle industry of the 20 years prior. Based on systematic methods, highly organised operations, advanced technologies, millions of pounds and tens of thousands of workers, the Northern Rhodesian Copperbelt was undoubtedly the product of the modern mining industry.

**Conclusion**

Mining in Northern Rhodesia left the 1920s in a very different state to how it entered the decade. What had been the field of small amateur 'adventurer-cum-prospectors' was now a hub of modern large-scale mining. Capital and personnel flowed into the region transforming it from graveyard of mining companies to the birthplace of a mining

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204 LSE Selection Trust Papers ST/TEMP/G/51 RACM progress reports with plans 1928-32 February 1930, November 1931

205 LSE Selection Trust Papers ST/TEMP/G/51 RACM progress reports with plans 1928-32
powerhouse. This transformation was predicated on a single policy shift. The BSAC abandoned small prospectors and decisively tipped the scales in favour of large-scale capital and well-connected mining financiers in the City of London. Committed to substantial investment, and with exclusive access to vast swathes of the territory, prospecting efforts took on an entirely new scale. The efforts this policy shift engendered ultimately revealed the hitherto hidden wealth of the Northern Rhodesian subsurface.

Revealing the extensive rich copper sulphide deposits in the north-Northern Rhodesian underground was far from straightforward. Prospectors generated unprecedented volumes of information as they walked millions of miles through the Northern Rhodesian veld. Probing the depths of the subsurface, digging many times deeper than anyone had attempted before, revealed a new world of mineral wealth which had been previously, quite literally, overlooked. These costly comprehensive drilling programmes still struggled to overcome "the obstacles with which nature seems to have safeguarded her mineral wealth" (Rhodesian Anglo American Limited, 1929 p.13). That prospectors pathologised and saw the environment as 'safeguarding her mineral wealth' is perhaps understandable. Nature did not give up 'her' secrets easily. The obstacles were so numerous and shifting as to thwart decades of prospectors. All of the techniques and technologies that prospectors used to view, capture and fix Northern Rhodesian nature were, to a greater or lesser extent unreliable. Instead, it took the capacities of networks of colonial science to organise, systematise, triangulate and crosscheck the different methods before a reliable picture of the Northern Rhodesian subsurface could be reached. Through the techniques and technologies of colonial scientists, the information gathered by prospectors was transformed into systematic representations of the latent economic value of aspects of Northern Rhodesian nature. These representations – charts, diagrams, maps, tables and figures – enabled a new set of calculations of the commercial potential of mining in Northern Rhodesia and triggered a new round of investment which ultimately led to the birth of the Northern Rhodesian Copperbelt.

Through the endeavours of scientists in the periphery then, regimes of access to and control over the natural environment of Northern Rhodesia were changed. Through the accounts and knowledge of these explorers, prospectors and geologists, the penetration of European capital was invited and enabled. The geological maps produced represented
both the untapped wealth of the Northern Rhodesian Copperbelt but also the extension of control over these areas. As the geological maps represented the Northern Rhodesian underground, they also contained claims to what was represented. They linked political and economic objectives as they underlined the need for European intervention to release the trapped wealth. In so doing they marginalised other claims, writing any previous claims by local African peoples from the landscape. These maps linked the Northern Rhodesian subsurface with centres of political and economic coordination in London and enabled the space to be increasingly understood, managed and manipulated remotely (Allen, 2003). This was an important transformation of the relationship between the African interior and Britain. It effectively drew Northern Rhodesia, and the Northern Rhodesian subsurface, closer to the centres of finance in the City of London. This closer connection translated into increasing flows of capital and the birth of the Copperbelt as a global centre of commodity production.

As the 1930s began, the Copperbelt was in the process of being transformed. In this transformation the social and economic geography of the wider country was changed. The sparsely populated backwater of the Northern Rhodesian Copperbelt attracted tens of thousands of migrants from all over the region. Urban populations – an assumed feature of 'modern' European, not 'traditional' African, societies – grew around the new mining centres. These massive population shifts were not entirely the result of the mining industry's efforts but reflected important shifts in the way Northern Rhodesia was run. The 1920s saw the shift from Chartered Company rule to administration by the British Government. The Colonial Office brought with it new aims and techniques of government. They sought to stabilise colonial rule through comprehensive reorganisation of the political landscape. In these attempts to answer the 'native question' of stabilising colonial rule, colonial administrators helped answer the 'labour question' which had plagued the mining industry since its inception.
Chapter Six: Entrenching Rule –
governmentality and dispossession

Introduction

The Colonial Office took the reins of power in 1924 with a keen desire to change the way Northern Rhodesia was run. Many features of colonial rule – its taxation, its intermittent violence, and the supremacy of District Officers in mediating power struggles – had transitioned over the decades from imposition to fact of life. As these patterns of intervention had settled, so too had African strategies for resistance and evasion. The new mode of government saw institutions and political structures brought into being which realigned the way power was exercised and shaped the political landscape of Northern Rhodesia. Gone was the heavy boot of brutal extractive rule, here was the ‘gentle hand’ of imperial paternalism (Ranger, 1980). While this revision was not as sweeping as its early proponents might have wished, in the course of the coming years the type and scope of intervention by colonial administrators into Africans' lives changed. Revenue from the growing mining industry more than doubled the state budget in the late 1920s and colonial administrators set about using these resources to 'civilise' and 'develop' the Africans of Northern Rhodesia (Henderson, 1975). While these new interventions were carried out in the name of improving the lives of Africans, the net effect was often one of dispossession and disempowerment. The new political technologies the Colonial Office brought to bear, entrenched and stabilised British rule.

This chapter explores the first decade of Colonial Office rule following the Devonshire Agreement of 1923, taking a broader geographical scope as many of the important changes discussed occurred away from the Copperbelt. It begins by exploring the ways in which the incoming Governor sought to change the emphasis of colonial rule. This changing mode of rule is then explored in light of work on 'colonial governmentality' which draws on the work of Foucault to understand the ways in which governmental power changed the aims, targets and techniques of intervention in colonial societies. The chapter then goes on to look at two key interventions which bear the mark of this new mode of governing: Indirect Rule and Native Authorities, and the constitution of Native
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Reserves. These interventions sought to re-work the political landscape and align relations between 'men and things' in ways which furthered the aims of both extractive capitalism and colonial rule. While explicitly aimed at improving the welfare of Africans, these interventions fundamentally undermined it, working as highly effective tools of dispossession. Here, the resolution of the 'labour question' faced by the mines (raised in the previous chapter) is seen in light of the colonial authorities’ attempts to answer the 'native question' of stabilising alien rule. While historical analyses often argue that dispossession was always their aim – that the Native Reserves in particular were always intended to force Africans into wage labour – this chapter argues that this need not be the case. The limitations of statecraft and state capacity – within a capitalist economy – in and of themselves can explain these outcomes, and these same limitations gave rise to political instability on the Copperbelt. The first decade of Colonial Office rule produced a new political and economic geography in Northern Rhodesia which, through attempting to rationalise, reorganise and optimise socio-spatial relations across the territory, entrenched inequality and the relations which generated and perpetuated inequality.

A changing approach to rule

BSAC rule was seen to be inadequate in both the UK and Northern Rhodesia by the early 1920s (Gann, 1969, Henderson, 1975). Long-term policy debates had now firmly swung against Chartered Companies who "were now found inadequately equipped for the frontier problems which they created by dragging Britain into regions and interiors hitherto untapped" (Madden, 1959 p.341). Settlers in Northern Rhodesia too grew increasingly dissatisfied with Charter Rule and their exclusion from government (Gann, 1969, Phiri, 2006). As BSAC rule had failed to encourage substantive economic development in Northern Rhodesia, the BSAC were happy to relieve themselves of the burden (Slinn, 1971). A lack of revenue with which to invest in colonial administration meant that there was scarce evidence of the purported benefits of the British presence in Africa. The education budget of the BSAC, for example, was non-existent (Henderson, 1975). As described in Chapter Four, rule was widely resented and resisted (Macpherson, 1981). If the 'white man’s burden' in Africa was to encourage the development and civilisation of the 'native peoples', the BSAC administration was clearly deficient. As the Colonial Office took over in 1924, it was keen to mark the difference of approach and launch a new era in the development of Northern Rhodesia (Ranger, 1980).
Among those most keen to mark the change of rule was the newly appointed Governor Herbert Stanley. Eager to put distance between the new Colonial Office administration and the previous one, Stanley put into effect a wide range of interventions aimed at shifting colonial rule from one of 'soulless capitalism' to 'imperial paternalism' (Ranger, 1980). Conscious of the simmering resentment towards British rule, Stanley took a tour of the country to demonstrate the change in rule to African leaders. The Governor held audiences with groups of leaders in each region delivering the message of a new era of rule: Africans were now direct subjects of "His Majesty the King, who was anxious for the welfare and prosperity of the people" (cited in Ranger, 1980 p.352-3). These meetings were carefully choreographed pieces of political theatre. Stanley insisted on appearing before African leaders resplendent in a bright white dress uniform. One observer of the time describes the scene:

"Sir Herbert Stanley, clad in white from tip to toe, with a snowy plume topping his white helmet, sailed like a majestic swan through the brilliant sunlight to his tree-shaded dais. The lesser swans from the Boma gathered round him… His Excellency's address told of the good will of His Most Gracious Majesty King George towards his African subjects, of his desire that they should live peacefully and tranquilly and serve him with loyalty. That they should aspire to a wider and more useful life. That they should till the soil for their own uses in order that they might not suffer from want ... (All) designed as a parade (in the Kintergarten sense) of His Majesty's benignity towards his untutored African subjects." (Tapson cited in Ranger, 1980 p.353)

Embedded in these proclamations was a new agenda of governance. An agenda which highlighted the benevolence of the rulers’ intentions and the duties that could be expected of the governed. This was part of a broader social programme, a social 'thickness' to colonial presence that was not part of the BSAC’s approach to the colonial government. A single imperial polity was declared – one population under a one king. In this revitalised political community, the administration was there to serve the people. There was to be a new relationship between the governors and the governed. With this relationship came both rights and responsibilities. The rulers took on the aim of improving the wellbeing of the population. In response, the ruled should seek to improve themselves and their own
welfare. These new political subjects were constituted from a conception of freedom which rested on self-improvement and industrious use of natural resources (in this case, soil).

To the colonial authorities, the irrationality of Africans was self-evident. A cornerstone of the imperial thinking was the assumption that not only was existing African agriculture and natural resource usage irrational, being both inefficient and wasteful, but also that Africans themselves were lazy and morally deficient, lacking rational European habits of industry (Drayton, 2000, Luchembe, 1992, Macpherson, 1981). From this perspective, as discussed in Chapter Four, the BSAC's imposition of taxation was an attempt to inculcate economic efficiency and the moral fortitude of hard work in Africans. In later speeches to assembled African leaders, Governor Maxwell sang the praises of taxation as a way in which Africans could partake in their own country's progress (see page 107). In the new space of peace and progress which British colonial rule had provided, it was expected that Africans then play their part and adopt modern progressive habits. Taxation was only one of many attempts to encourage Africans to take part in the economic development of the country. Side by side with coercion and forcible taxation, went a range efforts aimed at encouraging Africans to act in economically and ecologically rational ways. For example, Native Reserves were created and development programmes set up to educate Africans in modern methods of agriculture and water use. While government policy sought to inculcate new habits of economic rationality through taxation and intervention, the dispersed logic of market exchange itself promoted the formation of economically rational self-improving subjects. The overtones of Foucault's ideas of 'governmental' forms of rule here are strong.

**Colonial governmentality**

This new form of government in Northern Rhodesia was shaped by what Tanja Murray Li calls 'the will to improve' (Li, 2007): a political practice in which the rulers took on the mantle of 'trustees' supporting the development of their benighted subjects. This is a form of rule termed 'colonial governmentality' and draws on Michel Foucault's work on the shift from 'sovereign' to 'governmental' forms of rule (Foucault, 2003b, Scott, 1995). In a number of studies exploring the changes in states and institutions in Europe since the Enlightenment period, Foucault identifies a shift from ‘sovereign’ forms of power with
direct, immediate and highly-visible methods of coercion, violence and obstruction (which he saw as the power deployed by feudal monarchies) to more efficient ‘governmental’ forms of power which are subtle, pervasive, granularising and heterogeneous (which he saw as the forms used by ‘modern’ states since the late eighteenth century) (Donzelot, 1979, Foucault, 1991a, 2003a, 2003b, 2007a, 2007c). With this shift in forms of rule, there is a shift in the aims, targets and techniques of power. The aim of governmental rule was to optimise relations between 'men and things' to produce increased welfare for the subjects of power: 'the population' (Foucault, 1991b, p.93, Foucault, 2007b, Li, 2007). Governmental rule sought to create "the right disposition of things", aligning social relations in specific ways towards a variety of definite ends (Foucault, 1991b, p.93). The target of power became not so much individual people or the territory (as with earlier sovereign forms of power), but populations and the relations between 'men and things'. This is a conduct of government which seeks to reshape the conditions of life and change the rules of how individuals and populations conduct their lives,\(^{206}\) to realign social – and socio-environmental – relations to produce self-regulating, self-improving subjects. Rather than forced into behaviours and conduct against their own will, subjects are encouraged in a specific direction, one aligned with a fixed conception of their welfare.

To achieve these aims and influence these targets, the techniques of power become necessarily more complex. Instead of relying on coercive force and punishment of individuals in order to prohibit certain forms of behaviour, a more enabling approach is taken. Rulers work to regulate their subjects through encouraging and facilitating specific behaviours and ends. Thus newer forms of power focussed on optimising the relations between men and things (within a given political rationality) through techniques of discipline.\(^{207}\) Disciplinary techniques of power are "radically heterogeneous" but, there are three facets worth highlighting here (Foucault, 2003b, p.36). Firstly, they are techniques of power which work by both closing down options and possibilities but also

\(^{206}\) One of Foucault's more pithy definitions of power is 'the conduct of conduct' (cited in Gordon, 1991, p.3).

\(^{207}\) Defined by Foucault as "The mechanism of power through which we come to control the social body in its finest elements, through which we arrive at the very atoms of society, which is to say, individuals. Techniques of the individualization of power. How to oversee someone, how to control their conduct, their behaviour, their aptitudes, how to put them in the place where they will be most useful" (Foucault, 2007a, p. 159).
Chapter Six

by enabling and encouraging certain aptitudes, behaviours, and ways of thinking (Allen, 2003, Foucault, 2003b). Secondly, a key technique for producing new behaviours of self-regulation and desired aptitudes is surveillance; Foucault's classic example is a Benthamite prison where surveillance and the watchful gaze of the authorities are key tools for keeping order and changing behaviours (Foucault, 1991a). Thirdly, they are techniques of power which are decentralised and individualising producing the effects of power through multiple, small and dispersed actions and outcomes (Foucault, 2003b). The mechanisms which produce the effect of power, then, are found in a complex apparatus which produces an alignment of institutions, processes and forces – termed 'dispositifs'. Donzelot singles out two key aspects through which the alignments of governmental rule are produced:

"Technologies, that is to say always local and multiple, intertwining coherent or contradictory forms of activating and managing a population, and strategies, the formulae of government ... theories which explain reality only to the extent that they enable the implementation of a program, the generation of actions; they provide through their coherence a 'practical object' (practicable) for corrective intervention of government programmes of redirection" (1979 p. 77, emphasis in original).

This chapter examines these two aspects of Colonial Office rule: The technologies through which a population is managed, and the strategies through which these interventions are directed. ‘Technologies’ here refers to both the institutional and programmatic apparatus through which the state attempts to rule. ‘Strategies’ refers to the logics, rationalities and schema through which the targets of rule and field of government are identified, delimited and understood. These strategies and technologies all sought to achieve three ends – enhance the welfare of the population, entrench the relations of capitalism and facilitate the process of rule. There was often an unacknowledged tension between these ends and the exercise of state authority almost invariably took precedence.

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208 Defined by Foucault as "the ensemble formed by the institutions, procedures, analyses, reflections, the calculations and tactics that allow the exercise of this very specific, albeit complex form of power" (Foucault, 1991b, p102-3).

209 This definition is used in preference to Foucault's own, defining governmentality by "its target, population; … its principal form of knowledge, political economy; and, … its essential technical means, apparatuses of security" (Foucault, 1991b, p102-3). Donzelot's definition points to two main characteristics, without fixing them in a specific historical and geographical context as Foucault does.
Entrenching Rule

However, Foucault's ideas present an abstracted ideal. Techniques of rule are not always effective; they do not always achieve their intended outcomes, particularly when the effects of power are produced through multiple small interactions. What is presented is a tendency, a model, not an absolute outcome or detailed empirical reality. Indeed, it is a central argument in what follows – and the entire thesis – that colonial rule, for a range of reasons, was often unsuccessful in achieving its aims. In aiming to improve the welfare of their populations, the colonial authorities in Northern Rhodesia often failed to produce the desired effect.

The ‘welfare’ of the colonial population was not value-neutral and had highly specific definitions in the hands of colonial administrators. The enterprising, autonomous, rational economic subject was at the heart of the imperial governmentalising project. Welfare was improved by habits of industry and economic progress. Freedom was the ability to choose how one entered into market relations. The progress of Africans towards civilisation and development was measured by the extent to which they complied with the aims and processes of British administration and engaged in capitalist relations. To produce this increased welfare of the population, colonial authorities worked to modernise and rationalise African societies. They came to be:

"Concerned above all with disabling old forms of life by systematically breaking down their conditions, and with constructing in their place new conditions so as to enable -- indeed, so as to oblige -- new forms of life to come into being" (Scott, 1995 p.193).

Optimising the relationship between 'men and things' required that African subjects took on 'modern' habits of progress. A key objective of a wide variety of interventions made by British administrators in Northern Rhodesia was the attempt to inculcate certain forms of economic, ecological, and political rationality in the African population, to produce 'modern' Africans. As Government Secretary Logan argued, they aimed to "help the Africans build up and maintain a healthy mind and a healthy body" (p.55) and "encourage them to think out schemes for their own improvement" (Logan, 1939 p.53). The Colonial Office administration in Northern Rhodesia set out to 'improve' Africans through transforming the conditions of life in the territory.

As this chapter will show, the years following the Devonshire Agreement saw a shift in the focus and techniques of the colonial state's intervention. Governmentalising
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techniques, which were at work from the start of colonial rule, now came more to the fore. Initially, the change from BSAC to Colonial Office rule barely registered in the Northern Rhodesian bush. Instead, over the coming years leading up to the expansion of extractive mining in the 1930s, multiple and dispersed practices combined to produce the larger effect of changing the conditions of life in Northern Rhodesia. Firstly, the British authorities sought to rationalise African political structures through the introduction of Native Authorities. The Native Authorities both empowered African leaders through the 'Indirect Rule' policy of 'Native Courts' and simultaneously aligned them more closely with the logics and rationalities of colonial administration. This reconstitution of political authority reduced the scope for African resistance and entrenched British colonial rule. Secondly, many Africans in Northern Rhodesia were relocated to 'Native Reserves' controlled by the newly reconstituted Native Authorities. Here, they were subject to a variety of interventions to make them behave in 'modern' and 'rational' ways. Through these and other interventions in African societies, new economic rationalities and behaviours were incentivised and promoted. Economic subjects were seen as most 'rational' when they sold their labour to European enterprise. The collective result, then, was a new 'disposition' of men and things, a new alignment of social relations along the lines of British colonial economic and political rationalities. The governmentalisation of British rule in Northern Rhodesia saw the conditions of life transformed and frequently for the worse. The aim may have been to improve, the result, however, was often to impoverish.

Native Authorities

As discussed in Chapter Four, BSAC rule had degraded African political institutions and produced a great deal of political turmoil through its use of coercion and clumsy interventions. Prior to 1924, rule involved minimal attention to the process of colonial administration beyond imposing taxation, encouraging extractive capitalism, and maintaining a level of law and order which made these possible (Henderson, 1975). In the eyes of the Colonial Office this approach had undermined tribal cohesion and left the

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210 As Chapter Four argued, economic emancipation through taxation and wage labour was a central trope of colonial rule from its inception in Northern Rhodesia.

211 As one former District Officer remarked, beyond the letters from the capital in Livingstone becoming more formal in tone “very little difference” was noted in the District Offices as they largely ran themselves (RH Mss Afr. S.2111 Hudson Interview with Kirk-Greene 1961 p.5).
'tribes' "in a very disorganised state" (Secretary for Native Affairs cited in Chanock, 1985 p.112). They sought to rectify this by introducing new policies and techniques for engaging with the African populace. Central to this was the reconstitution of Native Authorities and introduction of 'Indirect Rule' to replace the previous policy which was now termed 'direct rule' (described in Chapter Four). Indirect Rule provided a two-tiered structure, in which black and white rulers worked in separate but necessarily interdependent spheres. According to Leo Marquard, an enthusiastic observer writing in 1933, indirect rule might "almost be described as the theory of self-determination as applied to Native Tribes." It seemed to him "a positive theory of government based on the assumption that sound administration rests on the traditions of the people" (Marquard, 1933 p252). It was to be a hybrid of modern and traditional rule which, according to the Governor of neighbouring Tanganyika, endeavoured "to purge the native system of its abuses, to graft our higher civilization upon the soundly rooted native stock" (Cameron cited in Moore, 1992 p.16). The British administration would transfer to African rulers many of the tasks of the colonial state and, at the same time, 'traditional' political structures would be preserved and empowered in rural areas to govern their own affairs.

Indirect Rule was described by its leading proponent, Lord Lugard, as:

"Rule by native Chiefs, unfettered in their control of their people as regards those matters which are to them the most important attributes of rule, with scope for initiative and responsibility, but admittedly – as far as the visible horizon is concerned – subordinate to the control of the Protecting Power in certain well-defined directions" (Lugard, 1965 p.197).

By 'the most important attributes of rule' Lugard assuredly did not mean the right to levy new taxes, try capital crimes, coin money or raise armies. He meant the much smaller sphere of 'native law and custom' and the constitution of 'Native Courts'. The system of Native Authorities was not a new policy, having been formally established in 1908, 13 years after BSAC took control of Northern Rhodesia. However, under the Colonial Office, it was refashioned and strengthened. The Native Authorities legislation of 1929

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212 Tanzania

213 Prior to this point, the BSAC had been explicitly required not to intervene in 'native affairs' (Gann, 1969, Hailey, 1938) NA FO 881/7046 AFRICA: Memo. Northern Rhodesia. Administration (Mr. H. Farnall) 1898. In 1916 the Administration of Natives Proclamations expanded the powers of colonial authorities to appoint and dismiss Chiefs (Hailey, 1938). Chiefs were subsidised by the colonial authorities and the frequent method of penalising unruly or wayward Chiefs was to dock their subsidy or, if things continued, remove and replace them.
Codified the relationship between the colonial legal system and the existing 'customary' legal system constituting a series of 'Native Courts'. The Native Courts gave African leaders the power to make arrests, try (mainly civil) cases and levy fines and punishments (including beatings and prison sentences). Customary law was allowed to prevail as long as it was "not repugnant to British law and custom" and did not undermine British supremacy (Fields, 1982 p.30). The British administration also transferred to African rulers many of the tasks of the state – tax and census collection, public works, law enforcement and, gradually, further powers (Meebelo, 1971). A further step in this extension of powers was the introduction of the Native Treasuries legislation in 1936 which enabled Native Authorities to collect and manage court fees and hut and poll taxes to pay salaries and invest in schools and agricultural development (Grotpeter et al., 1998).

In the same year advisory councils and paid advisors were included in a revised Native Authorities bill. In almost all cases of new legal measures giving powers to colonial and traditional authorities, practice preceded law (Chanock, 1985).

This reconstitution and extension of chiefly authority was not without conditions. It went hand in hand with a thoroughgoing reorganisation of chiefly powers. The rationality of efficiency loomed large in the reorganisation of Native Affairs with amalgamation seen as a key signifier of efficiency (Logan, 1939). The Hailey Report rebuked the earlier efforts of the BSAC for failing to think along these lines, "little or nothing was done towards amalgamating petty authorities to enable more efficient administrations to develop" (Hailey, 1938 p.452). Further, though perhaps not recognised as such by British officials, a range of ‘customary’ political groupings were marginalised in the African rural political landscape in this rationalisation:

There were thus age groups, clans, women’s groups, chiefs, religious groups, and so on. It is worth noting that only one of these – chiefs – was sanctified as a native authority under indirect-rule colonialism, and only its version of

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214 There is a discussion in the literature around the shifting definition of 'custom' and 'customary law'. Mamdani argues that it was a thinly veiled attempt to decentralise violence as regular use of corporal punishment by colonial authorities was banned after the First World War (Mamdani, 1996). Fields and Chanock take a more nuanced view exploring the ways in which the boundary shifted over the colonial period and was an important site of contention of colonial power (Chanock, 1985, Fields, 1985).

215 In later decades these treasuries generated circuits of capital which led to the formation of a 'Boma class' which became an important agent for social change and class differentiation in the decades to come (Chipungu, 1992a, Grotpeter et al., 1998). This was in strong contrast to their intended aim of preserving African rural life.
custom was declared “genuine.” The rest were officially silenced.” (Mamdani, 2005 p.6)

The structures of chiefly power were rationalised and reorganised and, after detailed discussion and examination, a three-tier system of Chiefs was established.\(^{216}\) Groups were amalgamated and structured into clear hierarchies set out by the colonial authorities. To recognise and symbolise this new, more efficient, standardised system of chiefly rule black staves\(^{217}\) were handed out. Paramount Chiefs were given the longest staves surmounted by a Silver Rhodesian lion and, lesser Chiefs sequentially shorter staffs surmounted by a silver sphere.\(^{218}\) This time Governor Maxwell took to the road to present them to the Chiefs:

"I hope Chiefs will show their appreciation of this act of recognition by acting rightly towards all their people. I wish to leave power in their hands so that they can settle their own Native affairs. There are many disputes amongst Natives which Chiefs can settle better than anyone else, but they must learn to be just and fair to everyone and not to judge according to personal likes and dislikes. They must try and act justly like the Boma Officials try to do and they will then be respected by the people, and trusted by the Government to settle many affairs in their own country. If they are in doubt they can always come to the Boma for advice."\(^{219}\)

With restructuring and new powers came the burden of expectations of rational political rule, a signification of domains of rule and, once more, an emphasis on the beneficence of imperial paternalism. African leaders were to run their own courts. These courts were seen as a key way of curbing the corrosive effect of capitalist relations on 'tribal discipline' and boosting the authority African leaders had over their subjects. As Maxwell highlights above, with this authority came a responsibility to act rationally. Rational rule was based on impartiality, respect and equality of treatment. The Native Authorities

\(^{216}\) This was no simple process. The archival record documents a spirited internal debate between the administrative officials – should there be 5 classifications of Chiefs or 3? What should their respective subsidies be? What should their powers be? How many villagers should a Chief have to be called a paramount Chief? How should the classifications be signalled to the tribal leaders? (NAZ KSN 1/3/1/3 Ndola Correspondence, Native Affairs general 1926-8).

\(^{217}\) Staffs  
\(^{218}\) NAZ KSN 1/3/1/3 Ndola Correspondence, Native Affairs general 1926-8  
\(^{219}\) NAZ KSN 1/3/1/3 Ndola Correspondence, Native Affairs general 1926-8, Minutes of Native Indaba held at Ndola Boma 6/7/1928 p.6
system directly sought to inculcate African leaders with the habits of good governance. As Moore describes of parallel efforts in neighbouring colonial Tanzania, "the struggle to make the courts 'work' was defined as an almost evangelical effort to insert ideas and ways of knowing as much as it was a labor of making and keeping an organizational structure in order" (Moore, 1992 p.15). Key to this organisational stability and 'evangelical effort' was the empowerment of African leaders to hold court, try cases and impose punishments amongst their subjects. The courts, through their collection of fines and fees were also seen as a key step in educating Africans in how to handle money, leading the way to more responsible government and the development of their capacities for self-rule.220 Under the careful tutelage of British colonial officials, African leaders were encouraged to 'learn to be just and fair'. Justice, fairness and rationality were assumed to be abstract, universal concepts rather than ones deeply culturally embedded in British political and legal tradition (Moore, 1992). The measures of justice, fairness and rationality all stemmed from notions developed over centuries in the UK. In an African context, many of these notions were difficult to communicate – the difference between civil and capital crimes was one which particularly laboured colonial administrators. Educating African leaders in 'good governance' and 'right conduct' was a formidable task.

The effect of the Native Authorities policy was seen by colonial administrators as a success from the beginning. It strengthened African political institutions and brought African leaders into line with the new governmental rationalities, and, after one year of formal constitution, the governance habits of African leaders were seen to be improving:

"The attitude of the natives towards the Chiefs has notably improved since inception of Indirect Rule, and it is hoped that by the exercise of integrity, common-sense and sympathetic but firm discipline, the Authorities and Courts will be able to preserve and enhance the reputation which natives of the territory have always had for being a contented and law-abiding people."221

The Native Affairs Secretary praised how African leaders had "shown a sense of responsibility and integrity almost beyond belief" citing two Chiefs who had gone as far

220 NA CO 799/7 Northern Rhodesia Annual Departmental Reports 1930, Native Affairs. NA CO 799/9 Northern Rhodesia Annual Departmental Reports 1931, Native Affairs. NA CO 799/11 Northern Rhodesia Annual Departmental Reports 1932, Native Affairs; NA CO 799/12 Northern Rhodesia Annual Departmental Reports 1933, Native Affairs
221 NA CO 799/7 Northern Rhodesia Annual Departmental Reports 1930, Native Affairs p.8
as to fine themselves for transgressions. All around evidence was seen of a 'wholesome' return to traditional rural life under the control of newly empowered and responsible African leaders. The eagerness to declare the new policy a success, however, masks a variety of groups resistant to these reforms and its inherent contradictions which are taken up below. That said, it seems that many African leaders used their new powers in ways which did not directly undermine colonial rule but actually entrenched it. For a number of the African chiefs, the new powers were welcome and they were willing to compromise to maintain them (Meebelo, 1971). Indeed, as Karen Fields argues, the language of decentralisation and delegation of powers masked a reality in which the colonial state's powers were extended and gained increased traction in the African populace (Fields, 1985).

In delegating authority, the British administration actually increased its engagement with the African populace. Firstly, with the increased powers for Native Authorities came increased supervision by British administrators. The reconstituted Native Authorities were very carefully watched and managed by British officials. While proclaiming the new policy a success in 1931, the Native Secretary also conceded "the need for constant touring is very real". With the increased autonomy came increased intervention in the form of touring and supervision, increased use of surveillance as a technique of power (Foucault, 1991a). This was no doubt a product of a growing administrative staff funded by rapidly growing revenue flows. The intervention now aimed less at coercing compliance as instructing and educating African leaders in new behaviours. Demonstrating the new application of disciplinary techniques of power, African leaders were encouraged to become self-improving rulers under the watchful eye of Native Commissioners (Foucault, 1991a). Secondly, the newly empowered Native Authorities gave less scope for the evasion of colonial demands by Africans:

"Natives who found it possible to mislead District Officers of experience have discovered that it is much more difficult, if not impossible, to mislead

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222 NA CO 799/7 Northern Rhodesia Annual Departmental Reports 1930, Native Affairs p.6
223 NA CO 799/7 Northern Rhodesia Annual Departmental Reports 1930, Native Affairs; NA CO 799/9 Northern Rhodesia Annual Departmental Reports 1931, Native Affairs; NA CO 799/11 Northern Rhodesia Annual Departmental Reports 1932, Native Affairs; NA CO 799/12 Northern Rhodesia Annual Departmental Reports 1933, Native Affairs
224 NA CO 799/9 Northern Rhodesia Annual Departmental Reports 1931, Native Affairs p.7
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Chiefs and Assessors of their own tribe, capable of thinking along similar lines to their own and with the same traditions and instincts.”

The newly rationalised and 'empowered' African leaders were better able to read and understand the realm of rural African life and worked to regulate and control it. A number of African leaders enjoyed their new powers and used them to maintain order (Gordon, 2001, Meebelo, 1971). This produced a political stability in rural Northern Rhodesia and paved the way for further (heavily controlled) 'delegation' of powers to the Native Authorities in the coming decades.

Colonial domination, however, was not all-encompassing. The imposition of colonial rule was still resisted by African leaders. For the duration of British rule in Northern Rhodesia, colonial Chiefs "were never straightforward incarnations of colonial policy", frequently subverting and undermining it (Ranger, 1969 p.318). Documenting this is difficult. Resistant leaders and groups often show up in the official archival record as groups labelled as backward and ignorant. The Secretary for Native Affairs was forced to list increasing numbers of these 'ignorant' leaders as the years progressed and the recalcitrance could no longer be ascribed to the recentness of the policy. Chipungu uses oral testimony to argue that “Native Authorities tended to collect less controversial taxes, levies and fines and ignored the most resented types” (Chipungu, 1992b p.51). It also seems clear that where many African leaders took on board the language of rationality and good governance, and deployed it in negotiations with colonial authorities, this was as much a performance of compliance as an expression of a changed sense of how rule should be conducted (Prins, 1980, Ranger, 1980). In one example of this, Government Secretary Logan cites an occasion when:
"A District Officer on tour expressed a wish to listen to the hearing of a case. A case was promptly brought on and tried at considerable length to its final conclusion by the Native Court. It turned out, however, that the this was a repeat performance as the case had already been tried" (Logan, 1939 p.53).

In neighbouring Tanzania, Sally Moore describes the struggle of colonial officials to make the new courts system work along desired lines (1992). A key site of struggle was

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225 NA CO 799/7 Northern Rhodesia Annual Departmental Reports 1930, Native Affairs p.6
226 NA CO 799/7 Northern Rhodesia Annual Departmental Reports 1930, Native Affairs; NA CO 799/9 Northern Rhodesia Annual Departmental Reports 1931, Native Affairs

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the documentary record where, upon inspection, court records were often not up to scratch and went missing. As Moore points out, "a certain degree of studied carelessness could serve local interests by systematically frustrating surveillance" (1992 p.28). What records remain, indicate that similar struggles faced administrators in Northern Rhodesia. Further, the application of rule was still highly uneven. Those groups furthest away from the centres of colonial administration still were best placed to evade its demands. Much as the scope and scale of state intervention increased as the resources of the colonial state grew, it was still relatively stretched. While it is difficult to measure the extent of colonial interference in rural African life, it is telling that the annual census figures in the Native Affairs reports include clauses that many of the figures are estimates. In most provinces, only 60% of villages were visited in any one year. The scope for evasion from European influence by Africans still existed, but it was curtailed by use of African Chiefs who passed on colonial demands, however unevenly. The Native Authorities system developed a broader stability through both enabling African rulers to impose control on their people and placing clear limits on these powers. Without wishing to overstate the impact, the net result appears to have been a remarkable degree of compliance with colonial demands and political stability in rural Northern Rhodesia in the coming decades; that which had threatened to destabilise BSAC rule became background rumblings (Hall, 1965, Meebelo, 1971).

**Native Reserves**

For the newly amalgamated and structured systems of indirect rule to function efficiently, the Native Authorities were to be constituted on their own lands. These reserves gave a clear spatial expression to the Native Authorities and came into being in the late 1920s and early 1930s. The Native Reserves Commission was established to explore how, where, and under what conditions reserves could be set up. The Commission investigated three areas – the North Charterland Concession near Petauke, the 'railway belt' and the area around Lake Tanganyika in the far north (Gann, 1969). In 1926 the Commission reported and in 1929 Ordinance was passed officially constituting the

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227 NAZ SEC2/378 Native Courts Powers and Organisation 1929-36  
228 NA CO 799/9 Northern Rhodesia Annual Departmental Reports 1931, Native Affairs  
229 This should be seen against a background of minimal colonial presence in rural Northern Rhodesia throughout the colonial period, and a growing preoccupation with urban areas in the coming decades.  
230 NA CO 795/17/1 Native Reserves Commission report V1 1926
reserves. Native Reserves had loosely existed in some parts of the territory for decades before the Native Reserve Commission was established.\textsuperscript{231} Where previously there had been general areas in which Africans were encouraged to settle, there now came to be a detailed formal demarcation of 37 territories for around 525,000 people across the country upon which Native Authorities held dominion (See Figure 11 below).\textsuperscript{232} The Native Reserves were often designed to overlap with areas which were already occupied by Africans, but many involved relocations. The spatial solution was an intuitively appealing one in the intellectual climate of the time and had a number of charismatic advocates in Southern Africa and the UK (Mamdani, 1996). So appealing was it, that the spatial solution was not only applied to the African inhabitants, but also to flora and fauna as forest and game reserves were also created in a patchwork across Northern Rhodesia. This was the final expression of the Native Authorities: in order to ease the transition into European socio-economic relations and avoid the consequences of adverse incorporation, 'petty monarchies' were established complete with territorial limits, courts and advisory councils (Chanock, 1985).

On the Native Reserves, Africans became the targets for development interventions aimed at producing more rational habits and behaviours. Centrally, the Native Reserves were seen as key to developing more efficient habits of agriculture amongst Africans. One obstacle to the development of agriculture identified by the colonial authorities was the "feeling of insecurity of tenure" Africans held.\textsuperscript{233} With no obvious sense of the irony involved, colonial officials saw compulsory relocation to Native Reserves as the solution to this problem. The reserves saw their space rationalised in a number of ways as 'water experts' were drafted in to provide wells, dams and irrigation.\textsuperscript{234} These experts were specifically mandated to train Africans in techniques and habits of water management and conservation. Having worked to undermine local agricultural production previously,
colonial authorities now endeavoured to rebuild it along more rational lines. The Native Affairs department engaged in projects to modernise agricultural methods amongst reserve populations. Where the BSAC had banned Chitemene methods, the Colonial Office deployed newly recruited European agricultural experts to educate Africans to adopt alternate methods (Logan, 1939). These experts encouraged the use of new crops, crop rotation methods and irrigation schemes as colonial officials sought to "check, in time, those wasteful methods" Africans had hitherto used. Cattle dips were especially popular techniques with the Colonial Office as they reduced the possibility of cross-infection of white-owned herds and a great deal of effort was expended on demonstrating their usefulness to African herders. The myth of the 'profligate native' is clear here and Colonial Officials went to some lengths to educate it out of existence.

Figure 11: Map of Native Reserves in 1937

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235 NA CO 795/28/2 Crown Lands and Native Reserves, Regulations 1929-30; NA CO 795/68/8 Native Affairs, Conference at Victoria Falls 1934; NA CO 795/32/11 Colonial Development Fund, Agricultural development on Native Reserves application 1929
236 NA CO 799/2 Northern Rhodesia Annual Departmental Reports 1925-6, Native Affairs 1926 p.3 (479)
237 NA CO 795/32/11 Colonial Development Fund, Agricultural development on Native Reserves application 1929; NA CO 799/9 Northern Rhodesia Annual Departmental Reports 1931, Native Affairs
238 Based on Map 467 from the National Archives of Zambia Digitised Maps and Images Collection
The Native Reserves were intended to encourage Africans to behave in economically rational ways both on and off the reserves. A key aim was for Africans to cycle through alternately taking up wage labour in European employment and then investing their earnings in their own agricultural plots. Within a revitalised Native Authorities structure, an optimised balance between modern labour and rural political stability was sought:

"We should aim … at a constant flow to and from the villages so that the benefits of labour go back to the villages and the ideology of African tribal life is not overthrown but is enabled to improve itself through its contact with European ideas as these are exhibited in our industrial life." (Logan, 1939 p.58)

Not only were the ideas and sensibilities that exposure to wage labour for Europeans would bring to be used to develop the reserves, so were the wages. The hope was that through the use of short term contracts, Africans would return to the reserves and invest in and develop these rural areas (Henderson, 1975). A new economic geography was envisaged where the wealth generated (predominantly) on the Copperbelt would be distributed across the rural areas of the country leading to wider economic development. In a national scheme, the optimised relationship between the centres of industrial production and rural reserves was planned. These optimised flows of people, ideas and capital did not work as envisaged as the Native Reserves quickly led to rural poverty and depopulation.

The move to Native Reserves was far from popular with Africans and their leaders as, in many ways, the consequences were disastrous. Most importantly, the reserves were too small. Complaints around the size of the new areas began almost immediately but were dismissed as they conflicted with the opinion of "an agriculturalist of wide experience" who believed the reserves could support populations of three times the size. Population densities on the reserves varied but were generally much higher than in the surrounding country. In 1933 the average population density across the territory was 4.7 people per square mile. On the reserves the lowest was 6.89 people per square mile (the railway)

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239 This stood in contrast to South Africa where the government worked very hard not to allow a settled population and Katanga where one was encouraged (Berger, 1974).
240 NA CO 799/12 Northern Rhodesia Annual Departmental Reports 1933, Native Affairs p.12
241 NA CO 799/12 Northern Rhodesia Annual Departmental Reports 1933, Social and Economic Progress.
and the highest 38.7 (North Charterland). African agriculture in Northern Rhodesia, as has been discussed in previous chapters, relied on mobility and the ability to rotate crops. With relatively low soil fertilities in many parts of the country, the ability to shift cultivation sites around every 5 years was central to many indigenous agricultural systems. Constrained to small areas and unable to move as soil fertilities declined, the Native Reserves were disastrous for African agriculture, forcing many to seek alternate livelihoods (Musambachime, 1992, Parpart, 1983). This was only compounded by the economic slump and locust outbreaks of the early 1930s. Further, as Africans were dislocated from their previous areas where they had worked to control tsetse fly, they were forced into new areas where the fly was prevalent. This was particularly marked on the North Charterland reserves (near Petauke) where deaths and migration led the population to decrease 54% in the decade following relocation to the reserves (Musambachime, 1992). In 1938 alone, 29 out of 117 taxable men died of sleeping sickness on this reserve (ibid.). As the railway came to be the economic and administrative backbone of Northern Rhodesia, being moved away from its path placed Africans at a great economic disadvantage. Cut off from their markets, and with decreasing yields, reserve populations found it increasingly difficult to pay their taxes (Parpart, 1983, Siegel, 1989). This same distance killed mines in the Hook of the Kafue. It did little more for African agriculture, no matter how well it was 'rationalised'.

Quite why Africans and their leaders did not rise up against these injustices has puzzled the (surprisingly few) researchers that discuss these impositions. There is little evidence of how the relocations to the Native Reserves took place, but it seems that the majority of opposition was vocal rather than physical. Given that African leaders were clearly aware of the upheaval, disruption and problems this relocation would cause –

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242 NA CO 799/9 Northern Rhodesia Annual Departmental Reports 1931, Native Affairs p.9
243 NA CO 799/9 Northern Rhodesia Annual Departmental Reports 1931, Native Affairs; NA CO 799/11 Northern Rhodesia Annual Departmental Reports 1932, Native Affairs.
244 This exact complaint was registered in 1932 but again dismissed by the colonial authorities (NA CO 799/11 Northern Rhodesia Annual Departmental Reports 1932, Native Affairs)
245 NAZ KSN 1/3/1/3 Ndola Correspondence, Native Affairs general 1926-8, Minutes of Native Indaba held at Ndola Boma 6/7/1928
246 NAZ KSN 1/3/1/3 Ndola Correspondence, Native Affairs general 1926-8, Minutes of Native Indaba held at Ndola Boma 6/7/1928; NA CO 795/68/8 Native Affairs, Conference at Victoria Falls 1934; NA CO 799/9 Northern Rhodesia Annual Departmental Reports 1931, Native Affairs; NA CO 799/11 Northern Rhodesia Annual Departmental Reports 1932, Native Affairs
complaining pre-emptively to Governor Maxwell – this is surprising. Meebelo is reduced, after in-depth discussion of many aspects of the colonial encounter, to describing the lack of resistance by African leaders to a policy so obviously detrimental to the wellbeing of their people as "unfortunate" (Meebelo, 1971 p.228). The esteemed Terence Ranger also struggles to comprehend this paradox of quite why there was so much complicity with clearly negative colonial policies. He argues that perhaps it was the ideological power of encouraging African leaders to feel they were part of a single powerful empire that secured, at least temporarily, their compliance (Ranger, 1980). Perhaps the negative consequences were not so immediately apparent. Perhaps some leaders enjoyed the increased power Indirect Rule brought and saw the negatives as acceptable (Gordon, 2001). There are no final answers, but it seems that the balance between coercion and consent had, through the techniques of indirect rule and the Native Authorities, been struck. The African leaders largely moved with their people to the reserves with little resistance or delay.

With a bitter irony, much of the land cleared to make room for prospective settlers was vacant for decades (Grotpeter et al., 1998, Henderson, 1975, Meebelo, 1971). The bewilderment expressed by African leaders at the time of their relocation came to be shared by colonial officials of subsequent administrations. Despite multiple incremental increases in the size of reserves, the policy was later seen as disastrous. In 1946 the Land Commission commented that:

"It is difficult to understand why in many parts of the country natives were compulsorily moved into reserves in spite of the fact that there was no demand for occupation by Europeans of the areas left vacant. The result of this policy was to create a profoundly unsatisfactory situation in many of the reserves and to cause much unnecessary suffering and ill-will" (cited in Musambachime, 1992 p.20)

Rationalisation and efficiency for colonial authorities came at a painful price for Africans in Northern Rhodesia. The system of Native Reserves and Native Authorities failed to improve the wellbeing of Africans and largely undermined it. It did however, produce a stable political system, a governable space which remained intact and quelled rural unrest.

247 NAZ KSN 1/3/1/3 Ndola Correspondence, Native Affairs general 1926-8, Minutes of Native Indaba held at Mkushi Boma 9/6/1928; NAZ KSN 1/3/1/3 Ndola Correspondence, Native Affairs general 1926-8, Minutes of Native Indaba held at Ndola Boma 6/7/1928
for decades. This control and stability was not borne from a single intervention or technique of rule, but from repeated ongoing effort, which, through numerous attempts and over time, largely generated the desired result for colonial authorities. The Native Reserves were a key tool in the arsenal of the British administration in producing rational economic subjects. They were however, only one part of a broader dispositif realigning social relations to produce economically rational habits and behaviours in Africans, many of which reached beyond the state (Foucault, 1991b).

‘Rational’ economic behaviours had been promoted since the beginning of British intervention in Northern Rhodesia. The lure of luxuries and social status associated with them was a key incentive for behaviours from the beginning of the BSAC presence in Northern Rhodesia. The original treaties signed in the early 1890s were exchanged for gifts of cloth and other luxuries (Faber, 1971, Gann, 1969). This is a central point missed in many analyses of the punitive brutality of British rule, that it rested equally on the 'selling' of specific behaviours and attitudes as it did on curtailing undesired ones. One District Officer employed in 1919 described his job as being one of gently circumscribing 'more uncivilised' aspects of local life along with promoting the cash economy, not only through taxation, but "stimulating also the demand for clothing and other luxuries of civilisation". In introducing a cash economy, the right of the individual for self-advancement through industry was held up as an ideal by the British. Those willing to sell their labour for cash could quickly find themselves in the possession of assets that rivalled those of their tribal leaders (Fields, 1985, Prins, 1980).

Colonial officials were not alone in stimulating this new rationality of progress and self-improvement: missionaries too played an important role. One group set up a chain of trading stations – the African Lakes Company – before any colonial officials had arrived in the region with the stated aim of offering Africans alternatives to the slave and ivory trades (Grotpeter et al., 1998). Missionaries were also the primary means of education in Northern Rhodesia for decades (Logan, 1939). Across the territory they held up the potential benefits of progress under capitalism and deliberately set about encouraging

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249 NAZ KSN 1/3/1/3 Ndola Correspondence, Native Affairs general 1926-8, Minutes of Native Indaba held at Mkushi Boma 9/6/1928; NAZ KSN 1/3/1/3 Ndola Correspondence, Native Affairs general, 1926-8, Minutes of Native Indaba held at Ndola Boma 6/7/1928
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more 'rational and civilised' practices amongst their local populations. Karen Fields describes,

"Mission Christianity, by deliberate plan, corroded African village life. Its Gospel included such tangibles as Lancashire cotton, cash crops, red-brick houses, Western medicine, tombstones, books, and money. The intangibles pertained not only to Christianity's transcendent God, but also to individualism, formal schooling, the nuclear family, middle-class values and virtues, skilled trades, and ambition" (Fields, 1982 p.96).

These possibilities of advancement however required certain behaviours and a compliance with the logics of market exchange. As Africans had been subject to forcible dispossession, a depletion of village labour and a range of policies designed to undermine their economic position, the 'freedoms' of the market were rather constraining. Aware that these relations were the product of European intervention, African leaders asked for assistance in engaging in the market. In the same 1928 Copperbelt meeting where the benefits of taxes were lauded (see page 107), the assembled African leaders asked for good prices for their produce. Governor Maxwell responded that it was beyond his power:

"You ask me to fix the price you receive for your produce. That I cannot do – it is entirely a matter for bargain between those who wish to sell and those who wish to buy. I am quite certain that in a district like Ndola you get very good prices for your foodstuffs. If you do not get a good offer you need not sell. The price is always a matter for bargaining. If I were to fix a price some people might think it too low and refuse to sell, but the Government cannot fix a price. Living as you do in a country so near Broken Hill, Bwana Mkubwa, the Roan Antelope and other mines you ought to be well off – there is work for everyone who wishes to work, without their having to walk long distances to obtain it. There is also plenty of opportunity for making money by working hard on your farms and selling the produce but it rests with yourselves. If you will neither work on the Mines or grow food stuffs to sell to the Mines, you have only yourselves to blame if you are not well off and there are other people who are content to walk for 3 weeks to come to the Mines to work. If you like to grow crops you can sell as much as you can
grow but you should grow maize rather than millet as maize is what the Mines require²⁵⁰

Social regulation here is dispersed to a multitude of private negotiations in a ‘free' market. Africans are free to act as they will, to sell or not to sell, within a circumscribed space of market exchange seemingly blind to the unequal footing upon which it was founded. This new mode of social regulation and rationality necessitates new forms of behaviour; new habits of industry if one is to survive, succeed, and get ahead. Structural inequalities of power here are concealed behind abstract logics apparently beyond the powers of the colonial rulers – who insisted upon their imposition – to control (Mitchell, 1990). The relations of the market were themselves a dispersed disciplinary mechanism, a dispositif which realigned the relationship between 'men and things' and reshaped the conditions of life in Northern Rhodesia. As Li argues "capitalist relations serve double duty as a vehicle of extraction and a vehicle for imparting… habits" (Li, 2007 p.20). Introducing new market relations was not simply a matter of breaking feudal forms but "a concern to introduce the conditions for a new order of social power wherein conduct was enabled and disabled by the automatic regulation of free exchanges" (Scott, 1995 p210). New ways of gaining influence were opened up, new 'orders of social power', as Scott describes, came into being. The new forms of economic rationality, so central to the economic project of imperialism, became increasingly pervasive and intransigent as time wore on.

This rationality was not universally accepted or welcomed as structural inequalities remained. Participation in the cash economy was, as has been described in previous sections, rarely on an equal footing with Europeans. Indeed, these new orders of social power, centred on economic advancement through labour, generated much of the tension which the Native Authorities sought to contain. On the one hand the Colonial Office sought to preserve 'custom' in African life, while at the same time develop modern institutions and habits. The tensions between these desires shaped colonial rule for decades. Collectively however, these efforts produced the steady flow of labour the mines so desperately craved.

²⁵⁰ NAZ KSN 1/3/1/3 Ndola Correspondence, Native Affairs general 1926-8, Minutes of Native Indaba held at Ndola Boma 6/7/1928 p.5
Changing rule and the labour question

Changing modes of rule worked to resolve the labour shortages which had so hamstrung early European enterprise in Northern Rhodesia. That it took four decades from the arrival of the BSAC demonstrates the difficulty of the task. The labour question was not answered by any single intervention but rather the repeated applications of power over decades. These repeated interventions worked to change behaviours. Imposed relations became naturalised over time and thus less subject to struggle. Taxation became a part of life: perhaps still to be avoided, but now a feature of living conditions in Northern Rhodesia (Gann, 1969). The cash economy became the central system for organising flows of resources. A generation later, capitalist relations which were once forced upon Africans had become part of the fabric of social life (Henderson, 1975).

Figure 12: Roan Antelope average African labour turnover 1927-35

Beyond the slow creep of colonially-induced social change, changes introduced in the first decade of Colonial Office rule were key to answering the labour question: with an increasing presence and new techniques of rule, it was very effective at encouraging Africans into the labour market. During the 1920s the colonial presence grew, making its

251 Source: (Spearpoint, 1937)
demands increasingly difficult to evade. As will be discussed in the next chapter, the mining industry was significant to imposing the demands of European rule. The growing presence of Europeans in Northern Rhodesia brought with it an increasing enforcement of many of the demands of colonial rule. As increased revenues flowed into the public purse, the number and presence of administrators grew. In the course of the 1920s the annual revenue of the government more than doubled, entire new departments were formed and legions of new administrators and experts deployed across Northern Rhodesia (Henderson, 1975). The 'thin white line' thickened.

\[ \text{Figure 13: Roan Antelope average African labour service length 1927-35}^{253} \]

The new technologies of rule used by the Colonial Office more closely inserted Africans into systems of colonial dominance. Native Authorities and Native Reserves more closely aligned African political structures with colonial ones, empowering African leaders along carefully delineated lines. African leaders were subject to increased supervision to ensure that their rule did not countermand colonial wishes directly. Further, African leaders were better able to regulate the activities of African subjects than the British and the scope for evasion reduced still further. While seen as a delegation of powers from the colonial state, in many ways the result was a closer alignment of local power structures with the

\[ \text{252 NA CO 799/2 Northern Rhodesia Annual Departmental Reports 1925-6} \]
\[ \text{253 Source: (Spearpoint, 1937)} \]
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demands of colonial rule. Mamdani calls the result 'decentralised despotism', where, "encased by custom, frozen into so many tribes, each under the fist of its own Native Authority, the subject population was, as it were, containerized" (Mamdani, 1996 p.51). This no doubt overstates the result – not least due to the unevenness of colonial intervention and the wide range of political cultures at work across the territory – but the net effect was clearly greater rural political stability for decades. The Native Authorities and Native Reserves sought to fix and stabilise Africans in an organised political structure of dominance. Further, they sought to reshape Africans as modern economically rational subjects through contact with market forces and European ideas of economy and resource use. The Native Reserves were the key spatial technology in this process.

The net effect of the Native Reserves scheme was the disempowerment and dispossession of Africans. They may have been inspired by the 'will to improve' but the outcome was not one which produced much improvement in the standard of living for many Africans. Instead, these reserves were overcrowded and racked by famine and disease. These problems were compounded when economic depression struck the country in the early 1930s and both markets for produce and opportunities for employment dried up (Berger, 1974). The reserves effectively became little more than "overcrowded labour reserves that would provide the mines and white farmers with a cheap supply of African workers" (Grotpeter et al., 1998 p.323). They produced a massive out-flux of Africans from rural areas. With this out-flux, the labour requirements of European enterprise were finally met. The previous chapter cited the Roan Antelope manager believing that the newly formed Native Labour Association (NLA) had solved the labour problems hitherto faced. This was not a view unique to him, it was shared by the wider industry which saw its creation as "an event of far-reaching importance" (Pelletier, 1931 p.199, Spearpoint, 1937). Given the concurrent upheavals in the wider population, and an economic depression in the country, this seems rather naïve (see Figure 12 and Figure 13). That this problem was resolved at the same time that relocations potentially affected half of the country's populace seems more than coincidence. The NLA provided only 30% of the labour for the mines and saw higher turnover and shorter contracts than voluntary labour (Henderson, 1975). It helped answer the labour problems, but it was not decisive or stable. Long-term stable contracts from 'voluntary labourers’ formed the majority of the labour on the mines, for the origin of these labourers we have to look to the broader
processes of dispossession at work in Northern Rhodesia at the time (Spearpoint, 1937). With this wider view, it seems likely that the Native Reserves were a key element of the Southern African migratory labour system. It is tempting to argue that this result was entirely by design. To an extent it was, as colonial officials sought to encourage Africans into labour and behave in what they saw as economically rational ways. However, in resolving one problem, and in seeking to 'improve' Africans, the same interventions produced consequences which the colonial state then struggled to resolve.

**Contradictions of rule**

As had the BSAC, the Colonial Office sat astride a contradiction. Capitalist relations often engendered behaviours the administrators sought, but they could undermine the social stability equally desired. In 1929 the Secretary for Native Affairs described the problem of rural change thus:

"As natives become more travelled and more enlightened they naturally tend to become more independent and detribalised. Frequent association with natives of other Territories and with increasing numbers and varying types of Europeans has brought about a change of outlook, and the attitude of trustful deference to Chiefs and Elders which was formerly so noticeable is declining. The spirit of communal responsibility and co-operation which belongs to the tribal system is weakening and the young man of to-day is inclined to be self-assertive and to dream mainly of his own advancement."

The rise of economic individualism the colonial authorities laboured to engender, actively undermined the collectivism and unity they sought to preserve. Political stability was understood to rely on social cohesion, 'tradition', and respect for African leaders. Taxation and the relations of capital actively reworked the social relations of old. Where economic activity was often organised on a village level, and tributes paid to other groups and leaders collectively, taxation singled out individual households. The relations of market exchange punished and rewarded individuals. They opened up the possibility for rapid social advancement outside of the domain of weakened African political structures. Combined with population out-fluxes from the Native Reserves, this lead to increasingly

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254 Indeed the NLA was disbanded within a few years as labour shortages were no longer a problem (Spearpoint, 1937).
255 NA CO 799/5 Northern Rhodesia Annual Departmental Reports 1929, Native Affairs p.5 (508)
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stable urban populations of mine labourers gathering on the Copperbelt and 'detribalisation'. While a ready supply of free labourers on the doorsteps of the mines – or 'labour stabilisation' as it was termed – was useful for the mines, it was undesirable for the colonial authorities. The political instability and numerous social ills associated with large groups of unemployed young men made the colonial authorities deeply uneasy.

The Native Reserves had been perhaps too successful. The colonial authorities had attempted to achieve an optimal flow of 'economically rational' people to and from the mines, but based in politically stable villages. Instead, what they produced was a “disturbing mobility” of Africans as the Reserves saw an out-flux of people and populations shifted (Ferguson, 1999 p.39). Indeed, the success of the Native Authorities in quelling rural unrest seems to have simply displaced resistance to the urban areas of the Copperbelt. From 1935 onwards a series of riots in townships on the Copperbelt took place as workers openly revolted against the tax burdens imposed on them (Moore, 1939, Perrings, 1977). These uprisings were relatively brief but they clearly unsettled colonial authorities which engaged in extensive investigations into their causes (Henderson, 1975, Perrings, 1977). Previously blind to the growth of a stable African urban population on the Copperbelt, the state rapidly took an interest in this new political grouping and it shook the colonial state into greater leniency in a number of areas such as taxation (Moore, 1939). Keen to manage the new populations, the state engaged in the creation of new political structures in these areas to organise the African voice and enable its integration into political decision making (Berger, 1974, Henderson, 1975).

Many analyses see the labour flows produced by the Native Reserves scheme and resultant 'free labour' on the Copperbelt as entirely by design (Grotpeter et al., 1998, Mamdani, 1996, Parpart, 1983, Perrings, 1979). The words of colonial officials seeking to improve the lives of Africans are seen as clearly duplicitous, hiding a deeper aim of

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256 This growth of urban populations is a much-studied facet of Copperbelt history. The Rhodes-Livingstone Institute, so central in the formation of the discipline of anthropology, led much of this research (Schumaker, 2001). A sizeable body of work has developed seeking to understand the apparent conundrum of 'modern' urban populations in the heart of 'traditional' rural Africa (see footnote 3). This work continues to the modern day with James Ferguson's 'Expectations of Modernity' being a notable recent intervention in this debate (Ferguson, 1999).

257 NA CO 799/12 Northern Rhodesia Annual Departmental Reports 1933, Unemployment; NAZ SEC 1/1296 Administration of native labour 1931-6

258 NA CO 795/103/13 Report of enquiry into causes of disturbance at Nkana, 4th and 5th November 1937
proletarianisation. However, proletarianisation – or the creation of a ‘working class’ as it was termed by administrators – was exactly what they did not want to achieve. The riots of the late 1930s onwards were precisely the kind of instability they sought to avoid through the Native Authorities and Native Reserves system. The colonial state went to some lengths to return populations to the reserves when they had completed their contracts (Henderson, 1975). For this thesis, proletarianisation and political instability were largely unintended consequences, produced through the tension between the dynamic forces of capitalism and the desire to maintain social stability and thus political order. However, these unintended consequences also point to weaknesses in the Northern Rhodesian colonial state's ability to intervene in and shape the society within its territory. These weaknesses are in some ways common to all states, but the Native Authorities and Native Reserves schemes were state technologies that were fundamentally flawed in ways which bear the hallmark of governmental programmatic intervention. They were based on flawed understandings, they bracketed out political economy and contradictions from their programs, and all held the unacknowledged aim of control above other aims.

The strategies which constitute governmental rule are shaped by their informational basis (Donzelot, 1979). Governmental interventions are necessarily based on an image or representation of the sphere which is to be intervened in; in order "to govern it is necessary to render visible the space over which government is to be exercised" (Rose, 1999 p.36). This process of rendering visible is shaped by the beliefs of those generating information on the social sphere. The Colonial Office went to some lengths to generate a wide variety of information, to 'render visible' its population and territory, when it took over the reins of power in 1924. Population censuses emerged, birth, death and infant mortality rates were calculated, and ecological and medical surveys conducted (Logan, 1939). Prior to this, measurements of the African population in Northern Rhodesia were conducted in terms of taxation and potential for waged labour. The Native Reserves and Native Authorities legislation was preceded by unprecedentedly large

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259 NA CO 795/68/8 Native Affairs, Conference at Victoria Falls 1934; NA CO 795/32/11 Colonial Development Fund, Agricultural development on Native Reserves application 1929
260 Which was estimated at an alarming 30-40% of children dying before their third birthday (NA CO 799/2 Northern Rhodesia Annual Departmental Reports 1925-6).
261 NA CO 799/2 Northern Rhodesia Annual Departmental Reports 1925-6
262 NAZ RC/361 Conference on Native Labour by Mining Companies 1926
information gathering and systematising efforts. The final Report alone for the Native Reserves Commission stretches across two 200-page volumes.²⁶³

Yet, despite this length, the representation is a selective view, and a biased one. Governmental representations require, by design, a 'tunnel vision' which "brings into sharp focus certain limited aspects of an otherwise far more complex and unwieldy reality" (Scott, 1998 p.11); or, as it was described at the beginning of this chapter, a representation which ‘explains reality only to the extent that it enables the implementation of a programme’ (Donzelot, 1979). In order to produce a 'practicable object' for government intervention, it needs to rendered legible, its key features defined, and categories established.²⁶⁴ The representation, or report in this case, rendered a section of society visible and legible to government programmers to the extent that they could be engaged by the programme. This is a necessity of the programmer’s view – relocating thousands of people is a complex endeavour. But the selectivity of the view is invariably problematic. In the process of filtering – of simplifying – reality, salient – crucial in fact – details are omitted. The omission of these details can prove the undoing of the governmental plan and produce unintended consequences (Scott, 1998). The Native Reserves report was based on calculations about how Africans behaved and how their agricultural system worked which were clearly flawed. The reserves were too small to support the populations on them, the land of poor quality and often removed from water sources.²⁶⁵ Further, the filtering of information which went into the Report occluded the views of and reproduced racist beliefs about Africans. The final Report referred to the Africans it surveyed and classified repeatedly as 'a backward race' and clearly regarded them as unable to represent, or indeed understand, their own best interests.²⁶⁶ These flawed and outright racist beliefs shaped the content of the report and, in the long run, helped it wreak so much havoc on those Africans who were relocated. There is no need to assume duplicitous or malign intentions on the part of colonial administrators for their

²⁶³ NA CO 795/17/1 Native Reserves Commission Report Volume 1 1926; NA CO 795/17/2 Native Reserves Commission Report Volume 2 1926
²⁶⁴ This parallels the discussion of rendering nature visible and legible made in Chapter Five; Scott uses examples of both the natural and social worlds to make this same argument (Scott, 1998).
²⁶⁵ NA CO 795/68/8 Native Affairs, Conference at Victoria Falls 1934; NA CO 795/32/11 Colonial Development Fund, Agricultural development on Native Reserves application 1929
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interventions to have ruinous consequences for Africans. The marriage of the 'will to improve' with a simplified 'administrator’s view' is in itself enough.

The Native Reserves Report also demonstrates how governmental interventions frame their representations and produce responses. There are two steps in this process – 'problematisation' and 'rendering technical' (Li, 2007). The first identifies "deficiencies that need to be rectified" in terms of the tools and techniques available, as Li tellingly points out, "the identification of a problem is intimately linked to the availability of a solution" (Li, 2007 p.7). The second step frames the problem in ways which make it amenable to intervention. In the case of the Native Reserves, the problem of a lack of land for white settlers was illusory. The problem of ignorance and 'deficient habits' was equally a biased – and frankly racist – view of a way of life which did not fit European ideals of lifestyle and livelihood and was difficult to regulate. These problems were then 'rendered technical', understood in terms of potential remedies and programmatic cures. These solutions are defined by the scope of possible action within a given political context. This almost inevitably produces a depoliticisation of the problem (Ferguson, 1994, Li, 2007). The Native Reserves programme bracketed out of its view the political-economic context within which it operated, the processes through which British rulers and entrepreneurs had sought to impoverish and disadvantage Africans over decades previously. This is intimately linked to a further element of improving governmental interventions: much as trustees cannot acknowledge the contradictory nature of their interventions, they cannot acknowledge the contradictory nature of their own role. That the Native Reserves actively and very effectively impoverished Africans was simply unable to be heard by British authorities for years.

In ignoring the political economy of colonial rule and by focussing on the capacities of Africans, rather than the structural disadvantages within which Africans operated, these programmes inflicted much damage. They did, however, extend and entrench colonial rule. Whether consciously or unconsciously, success of the programme was measured by the extent to which it conformed to the wishes and views of colonial programmers. As such, the 'success' of the programme related directly to the capacity of the state to control its outcomes. This is a key step in Scott's Seeing Like a State, that state programmes inflict most damage when they attempt to make the social realms in which they have
intervened actually resemble the simplified maps and representations they have made of the sphere (1998). That reality deviates from the model is thus seen as an aberration which must be rectified. What then becomes important is that the social realm resembles the view, and therefore the wishes, of the programmer. In shaping the social realm to resemble the programmers view, the realm is shaped so as to more easily facilitate the extension of state power. In this process, the ability of the state to influence a social realm becomes the ultimate goal of state programmes.

On this criterion, Native Authorities and Native Reserves were a resounding success. They rationalised, standardised and compartmentalised African political structures in ways which made the space amenable to the exercise of governmental power. They produced a governable space, one amenable to the exercise of colonial rule (Scott, 1998). A single national plan brought together the varying elements of Northern Rhodesia into a single manageable entity with clearly delineated domains and subjectivities. Through the standardisation of ‘Chiefly Authorities’, a regimented hierarchy of Chiefs, and clear delineation of the spatial bounds of political domains, key elements of colonial rule were made consistent nationally through the Native Reserve policy. Collectively, these produced a form of political stability in rural Northern Rhodesia and realigned the conditions of life to produce rational economic subjects who were empowered and disempowered along specific lines. However, as a mechanism for 'preserving' African ways of life and producing wider social stability, they were a marked failure. This, perhaps, is governmental power in a nutshell – attempts to regulate self-improving subjects which prioritise the state in the final instance (Larner, 2007).

Conclusion

If ever-unequal power relations found clear spatial expression in Northern Rhodesia, it was in the formation of Native Authorities and Native Reserves. Here, etched into the landscape, was the structure and dominion of African authority. And, despite an articulated desire to empower African leaders, this authority was highly circumscribed. The expressions of power which mattered most to African leaders – those of military

\[267\] And internationally – Indirect Rule was becoming official British colonial policy and The Northern Rhodesian Native Reserves Commission was headed by Sir James Maxwell, who had similar experience on the west coast of Africa (Gann, 1969, Hailey, 1938).
capacity, access to natural resources and economic influence – remained resolutely in the hands of the British colonial authorities. The technologies of the Native Authorities and Native Reserves sought to produce a number of effects: to produce rational economic subjects, to systematise and stabilise rural political and social structures and to align these structures so as to enable rule and incorporate Africans further into these systems of rule. While not always effective in achieving their aims, cumulatively these efforts stabilised and entrenched both imperial rule and relations of capitalism. In the name of progress, under the newly compassionate tutelage of reformed colonial masters, Africans were enwrapped in the suffocating embrace of Colonial Office rule.

The first decade of Colonial Office rule was crucial in reshaping regimes of access to a control over natural resources in Northern Rhodesia. This decade saw new aims, targets and techniques of rule – new technologies and strategies – which transformed the economic and political terrain of the country (Donzelot, 1979, Scott, 1995). As the public coffers swelled, so did the colonial state's ambitions and presence on the ground. Intervention took on a new scale and colonial rule was entrenched and labour 'freed' as never before. The Native Authorities and Reserves rationalised and stabilised structures of powers in ways which facilitated the increased traction of British colonial desires. The Native Reserves became a classroom, a laboratory and a prison. Africans living on them were subject to a range of educational and development experiments and closer scrutiny and control of African behaviour. The ‘conditions of life’ in Northern Rhodesia were systematically reworked with disastrous consequences for African wellbeing. As economic depression struck in the early 1930s, conditions on the Native Reserves only declined further. No sooner had the Reserves been established, their development budgets were slashed as government revenue collapsed. The Reserves were, by dint of geography and population density, condemned to grinding rural poverty and depopulation. The Native Reserves proved, when combined with other spatially dispersed techniques of power, to be a highly effective technique for managing dispossession (Harris, 2004).

Yet domination was never total. Both the limits of the colonial state's capacity to intervene and the contradictions of its aims and methods produced unintended

268 NAZ KSN 1/3/1/3 Ndola Correspondence, Native Affairs general 1926-8, Minutes of Native Indaba held at Mkushi Boma 9/6/1928; NAZ KSN 1/3/1/3 Ndola Correspondence, Native Affairs general 1926-8, Minutes of Native Indaba held at Ndola Boma 6/7/1928
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consequences. The aim was a hybrid of 'traditional' political stability and 'modern' economic progress. The resulting turmoil demonstrated the fundamental contradictions at work here. The optimised flow of people from Reserves to the mines and back again was a pipe dream. The rationalised space of agriculture and living on the Native Reserves failed to provide enough food for its inhabitants. Rural political stability was created, but at the cost of famine and massive social upheavals which found final expression in sporadic violent riots on the Copperbelt.

The colonial state was growing in strength and reach in this period. The newfound desire to 'empower' African leaders in part came from a confidence in the stability of colonial domination. The British rulers were generous because they could afford to be. Domination, to a great extent, had been secured. Buoyed by a resurgent mining industry, the colonial state also found itself able to invest in administration and control and took full advantage of this. As has been discussed previously, the colonial state rested, to no small extent, on the fortunes and activities mining industry. The following chapter explores this relationship more directly. As the mining industry grew, the colonial state sought to intervene to secure rents and curtail the negative social ills which this strength and activity produced. This was an awkward relationship. With the colonial state so dependent on the mining industry from its inception, and with white miners an increasingly powerful political constituency, drastic action and painful interventions were always off-limits. However, the ways in which this relationship was articulated – and articulated with the agency of Africans – shaped both the mining industry and the colonial state in Zambia.
Chapter Seven: The Colonial State in Northern Rhodesia

Introduction

The colonial state's new-found enthusiasm for intervening in the social life of Africans did not last long. Almost as soon as the spending boom began, it ended. Northern Rhodesia entered the 1930s in a headlong rush to begin copper production at Mufulira Nchanga, Roan Antelope and Nkana. Unfortunately, by the time the Copperbelt was ready to produce for the world market, the world market was not ready for Northern Rhodesia's copper. As Letcher commented at the time, “the one fly in the Northern Rhodesian ointment appeared to be the ability of the world to absorb all the new copper that was to be produced by the African mines” (1932 p.248). The global economy was racked by economic depression. International copper cartel restrictions aimed at stopping an international slump in copper prices\(^{269}\) closed Mufulira and Roan Antelope on the eve of production (Gann, 1955). As mining industries around the region retrenched in the face of economic downturn (see Figure 10 on page 158), the colonial authorities were faced with a novel and new problem: unemployment (Berger, 1974).\(^{270}\) At the same time, as revenue from the mining industry collapsed in 1932, government budgets were slashed. Government reports took on a sombre tone as tax arrears built up and administrators saw no way Africans could earn the money to pay them.\(^{271}\) For the mining industry, this was a temporary setback. With access to cheap labour and sitting on extensive, rich resources, Mufulira and Roan Antelope resumed production within a year (see Figure 14). Exports grew rapidly and cost saving measures implemented when prices were low meant that the mining companies reaped bumper profits when prices rose towards the end of the 1930s.

\(^{269}\) LME Copper prices fell from £84.05 per tonne in 1929 to £35.82 in 1932, remaining low until the outbreak of World War II – see Figure 4 on page 90.

\(^{270}\) NAZ KTU 1/1 Kitwe District Notebook; ZCCM 17/6/x1 Closure of Bwana Mkubwa mine and Nchanga and negotiations with government over retrenchment 1931

\(^{271}\) A programme of tax forgiveness was also introduced in some areas (Henderson, 1975). NA CO 799/11 Northern Rhodesia Annual Departmental Reports 1932, Native Affairs; NA CO 799/12 Northern Rhodesia Annual Departmental Reports 1933, Native Affairs; NA CO 799/13 Northern Rhodesia Annual Departmental Reports 1934, Native Affairs.
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As World War II began, Northern Rhodesia was assured of its place as a leading producer on the world copper market.

Figure 14: First bars of copper produced at Roan Antelope Mine

For the Northern Rhodesian government, the consequences were more lasting. The Northern Rhodesian state's dependence on mining revenues had been cruelly exposed. A cautious government, not trusting that mining was more than a passing fad, adopted a policy of building up a 6-month spending reserve should such disaster strike again (Berger, 1974). A decade of government austerity began. Government austerity was a daunting proposition for so small a state to begin with. Where the state had been minimal in the BSAC period, it had grown modestly in the late 1920s. This expansion was reversed in the 1930s. The Agricultural Department was cut from 23 to 5 officers, the water boring team laid off entirely and discussions were even held about liquidating the educational, agricultural and veterinary services (Gann, 1969). Provincial staffing levels returned to those of the BSAC era (Berger, 1974). The colonial state was again in a difficult position, caught once more between the demands of economic expansion and political stability. Only now political stability was an increasingly complex proposition, comprising not only African political resistance but also growing white settler demands.

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272 Source: (Letcher, 1932)
and distant political masters in London whose desires were often at odds with domestic pressures – a struggle between white and native 'paramountcy' (Henderson, 1975). Furthermore, the colonial state’s capacity to act on these demands was limited by its reduced human and financial resources. This inability to act, and awkward position between competing interests, was central in shaping the mining industry in the 1930s and set the tone of the state-mining relationship for decades to come.

Mineral extraction in Northern Rhodesia was centrally shaped by the relationship between the mining industry and the colonial state. From the earliest days of the British presence, mining and the state were structurally coupled. This thesis has already shown how the two were closely inter-linked from the beginning. However, until now this relationship has been almost exclusively explored in terms of how the colonial state worked to create the conditions for extraction and the revenue flows the mining industry provided for the colonial state's activities. This chapter seeks to extend the analysis to include the ways in which the mining industry shaped the colonial state beyond revenue flows and the direct contact between mining companies and state institutions. The chapter begins by advancing a conception of the capitalist state and the colonial state in Africa. From here, it then examines how the mining industry was central in territorialising key elements of the colonial state from the beginning of British rule. This dependence on mining to support key elements of the state's activities had important consequences for the state’s ability to regulate the mining industry. These consequences are apparent in the following section which surveys legislative and regulatory practice of the colonial state towards the mining industry from the beginning of BSAC rule. When the Colonial Office attempted to reform these regulatory practices to gain greater control over the industry and an increased share of the revenues it was consistently thwarted. This struggle over revenues was part of a wider struggle to capture the benefits of mining which played out in domestic politics from the 1930s. The final section of this chapter explores the growing political power of European mine workers which came to shape domestic politics for the next 20 years and had long-term consequences for the opportunities for African advancement in colonial Zambia, before drawing together concluding arguments and reflecting on the co-constitutive nature of colonial rule in Northern Rhodesia and the Copperbelt mining industry.
Conceptualising the colonial state

Despite being a central category of social analysis for centuries, defining the state in anything but the broadest sense is somewhat of a challenge. As such, what follows is not an attempt to define the state per se, but an attempt to advance a conception of the state which helps us understand the development of both the state and the mining industry in Northern Rhodesia. Primarily, the colonial state discussed in this thesis is a version of the 'capitalist state' put forward in the work of Bob Jessop (1990). However, Jessop's formulations must be adapted to the colonial context as they, like nearly all state theory, derive from European or 'Western' examples which presume a historical, cultural and resource basis which was not present in colonial Zambia. As Herbst argues, "the gap between how power is exercised in Africa and international assumptions about how states operate is significant" (2000 p.3). Most common definitions of states stress the provision of public goods, a distinct set of institutions in some way set apart from the rest of society and a continuity of certain forms of power (Weber's monopoly on violence being the most common) within a specific delimited territory. In the colonial African context, these cannot be taken for granted. The pre-colonial legacies of slavery and ivory trading, processes of state formation, vast territories, inhospitable terrains, low population densities\(^{273}\) and absence of infrastructural assets all created unique challenges for state formation and the exercise of power in Africa (Clapham, 1997, Herbst, 2000, Robinson, 2002, Young, 1994). For the purposes of this thesis and this chapter, three aspects of the colonial capitalist state are salient.

First, states are not a single distinct cohesive entity. Rather, they are an effect produced by the interaction between a specific institutional apparatus and the political practices and discourses of various 'state projects' through which a vision of the common interest is articulated and promoted (Jessop, 1990). Institutionally, they are conceived as separate from wider society. This separation, while formal, is difficult to pin down as it is both fluid and contested (Jessop, 1990, Lier, 2008). For Michael Mann, it is the distinct socio-spatial organisation of their powers and institutions which is states' defining feature, one which makes them analogous to an arena, or a place within which competing 'state

\(^{273}\) In 1925 average African population density was roughly equal to that of Europe in the 1500s. Northern Rhodesia fell below this average (Herbst, 2000).
projects' are contested (Mann, 2003). The nascent state in Northern Rhodesia had changing institutional forms and locations. Its responsibilities, however, did not change fundamentally in the period under review – the reproduction of the conditions of accumulation and the maintenance of social stability and political order (Berman and Lonsdale, 1992a, 1992b). Rather, the institutions and practices responded to the changing fortunes and dominance of more or less distinct 'state projects' (Jessop, 1990). The state is therefore often seen as a 'condensate', its forms and direction the outcome of social struggle (Berman and Lonsdale, 1980, Jessop, 1990). Very broadly, in the period discussed in this thesis, a number of state projects can be seen: The BSAC project of producing a European-dominated extractive space discussed in Chapters 3 and 4; and, in the 1920s and 1930s, projects of restructuring African political and economic life and competing projects of whether Northern Rhodesia should be a country defined by black or white dominance or 'paramountcy' (discussed later in this chapter) (Henderson, 1975).

Second, states, in their traditional European sense, derive much of their stability and power from being seen to act in the name of a broader societal good (Jessop, 1990). As such, they are an important factor of broader social cohesion. Examination of many African states, both colonial and post-colonial, seems to provide a challenging counterfactual to this claim (Bayart, 1993, Clapham, 1997, Ferguson, 2006). However, it is exactly this legitimacy that the Northern Rhodesian colonial state sought to establish amongst the wider African populace in many of its 'political ordering' interventions from the beginning of British supremacy. The BSAC attempted to establish some form of legitimacy with its crude attempts at 'direct rule', though ultimately failed. Under the Colonial Office, the Native Authorities and Native Reserves legislation was aimed at, amongst other things, appeasing African leaders' desires for increased authority. The colonial state was, however, unable to exclusively prioritise developing legitimacy amongst its African subjects. The negative outcomes of the Native Reserves policy can be seen as the result of competing state projects as well as, as discussed in the previous chapter, the state's immanent limitations in social engineering. The Native Reserves were also aimed at appeasing the demands of white settlers who had an ambiguous relationship with Africans – wanting both their labour and their removal from land (Berger, 1974).  

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274 For example, according to Gann, it was white settlers who were amongst the strongest voices calling for Native Reserves of a 'generous' size which would avoid any future conflicts of land (Gann, 1969). At the
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The Northern Rhodesian state's final course of action was produced by its institutional make up and capacity, the strength of competing state projects and the need to be seen to act in the name of a broader societal good.

Third, core to the state's activities and constitution is its formally (though never actually) ‘neutral’ role in ensuring the reproduction of the capitalist economy (Jessop, 1990). The state's own reproduction requires that the capitalist economy function well. It is thus charged with regulating the vagaries of the capitalist economy in the name of an articulated ideal of the common good (articulated through the aforementioned state projects). While expected to regulate these forces, the state struggles to intervene in the capitalist economy. Central to this difficulty is the ways in which the instruments at its disposal are always at least at one remove from real economic agents and processes. Institutionally separate from the circuit of capital, state interventions are often either before (laws, shaping the planning process, controlling inputs to production) or after (taxes, fees) the production process (Jessop, 1990). This distance leaves wide scope for evasion and avoidance of state regulation by economic agents and means that its interventions are, necessarily, indirect. Where the state intervened to promote wage labour, it did not control the actual production process (beyond partially disrupting indigenous agriculture or occasional asset seizures). The relationship between taxation and labour was, at best, indirect. Further, as shall be discussed below, the colonial state struggled to gain any kind of influence over the activities of the mining companies, particularly as they grew in the 1930s.

Contrary to the assertions of some Marxist scholars, the awkwardness of this process means that states, even if they would wish to, can never fully and directly respond to all economic imperatives. Beyond being institutionally incapable of directly intervening in many economic processes, the intersection between the economic and political spheres complicates the process of translating economic needs into political demands. Economic demands need to be coupled with political and legal norms and mediated through the balance of (domestic and international) political forces and struggles before they can be

level of politics this is an ambiguous relationship; at the level of political economy, however, disrupting African agriculture to encourage Africans into wage employment appears as classic primitive accumulation
acted upon (Jessop, 1990). Further, should the state intervene to resolve arising problems within the economy or as a result of economic activity, these interventions can shift crises to the political sphere or further exacerbate them. In attempting to resolve economic crises, crises of legitimacy can follow; ad-hoc interventions can produce bureaucratic overload or can disrupt the very economic processes they were meant to aid (Jessop, 1990). Here then, at the core of the relationship between the political and economic spheres is a tangled web of awkwardly interacting logics, demands and processes. Rather than a smooth line from commercial to imperial interests, competing tensions and contradictions exist. Removed from the heart of economic activity, the state is fundamentally ill-equipped to regulate the economy yet burdened with the expectation that it do so effectively (Berman, 1992, Jessop, 1990). The contradiction between the state's roles in securing accumulation and social cohesion has loomed large in the earlier chapters of this thesis. In the 1930s this only grew more complicated at a time when the state was reducing its capacity. These features of the colonial state – its emergence from competing 'state projects', its reliance on being seen to act towards a common good, its problematic relationship with reproducing and regulating economic forces – ensure that the relationship between mining and the colonial state is complicated and often contradictory.

For a number of authors the process of colonial state development and the extension of colonial power are – either explicitly or implicitly – analogous. Mamdani, for example argues that the formation of the colonial state was the central feature of colonialism: "colonialism is the implantation of a state apparatus in the conquered territory" (Mamdani, 1976 p.142). However, the two are not the same, indeed, the experience and effects of colonialism were felt in Northern Rhodesia independent of the colonial state. This is a result of two features of the colonial state in Northern Rhodesia – its humble beginnings and its structural coupling to mining from a very early stage. This interdependence shaped the state-mining relationship for the entire colonial period (and arguably to the present day), and was an important element of the experience of colonial rule for many Africans. The colonial state’s dependence on the mining industry, both politically and financially, worked to entrench racial inequalities and ensure that the majority of the wealth generated by mining was not used for the benefit of the wider population in Northern Rhodesia. As the next section explores, this structural dependence
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began in the earliest days of British presence, as the mining industry was a key agent in initially territorialising British rule and played an ongoing role in supporting European domination.

Mining, domination, and the territorialisation of rule

From the outset, colonial authority sought to establish itself through the production and domination of space and nature. Central to this was the realignment of socio-environmental relationships. Realigning socio-environmental relationships – i.e. remaking space and nature – was a key target of state power from its inception, being named in Jones's proclamation of British supremacy on the Copperbelt with which Chapter Two began. Primarily this took two forms – the imposition of taxation discussed at length in Chapter Four which worked to transform livelihood practices, and the establishment and protection of a new regime of private property rights. This realignment was both a key axis of state intervention – indeed it can be seen as a state-making project – and central to the effective creation and functioning of mines. Private property rights were claimed and enacted through a two-stage process of enclosure. *Firstly*, rights to land, and rights to an increasing range of the natural world were claimed by the colonial government. *Secondly*, these rights were then passed via sale or lease to private actors. This first enclosure was legitimated by the treaties discussed in Chapter Two. What was covered by these dubious treaties appeared to grow over time (Macpherson, 1981). By 1911, as North-Western and North-Eastern Rhodesia were amalgamated, the BSAC claimed that their collection of treaties equated to total ownership of the lands of Northern Rhodesia and that all the African inhabitants were, in effect, leasing it from them (Macpherson, 1981). This enclosure mattered little when colonial domination was patchy, easily avoided and there were few competing claims to land.

To enact these rights, the colonial state needed first to have asserted political control. This was a time when colonial rule was signified more by the presence of ink on maps drawn up in Berlin than the presence of British administrators in the African bush. From the earliest days of the colonial enterprise in central southern Africa, the BSAC relied on commercial agents – the majority of whom at this point were mining related – to territorialise its rule. With few bodies on the ground, the BSAC’s supremacy was frequently brought home to Africans through the activities of an increasing number of
European entrepreneurs in their midst. The activity of these economic actors had important political consequences. When there were only a handful of administrators in the territory, mining prospectors and their parties were key to establishing and buttressing European supremacy. George Grey, from his base of operations at Kansanshi, launched parties to combat slaving in the area. He joined (local BSAC administrator) Val Gielgud and others on sorties to break up slave and ivory caravans along the border with Portuguese West Africa275 (Denny, 1957, Gielgud, 1956).276 As George Grey and Frank Lewis recruited labour from villages around their mines, they asserted the supremacy of British rule.277 Lewis in particular had little compunction in forcibly securing compliance to his requests (Macpherson, 1981). Macpherson describes “extensive eviction” around the mining areas in the earliest days of rule as territory, resources and people were claimed by European entrepreneurs (Macpherson, 1981 p.222). The fixity of mining activity meant that claiming of resources had an acutely territorial character where competing land uses could not be allowed (Fine, 1994). This territorialised nature of mining activity paralleled the desire of colonial rule for territorial control. In these, and numerous other ways, the extension of the mining industry therefore helped to establish European control in Northern Rhodesia.

Given the centrality of lines communication to the reach of colonial power, the mining industry's ability to provide for many of its own infrastructural needs was key to extending this reach into the African bush. Key to the penetration of British authority was the extension of the railway and the creation of roads. All mining enterprises until the 1930s (and beyond) cut their own roads to support their operations. George Grey's road from Kansanshi to Mumbwa was an important slaver-combating intervention (Gielgud, 1956). As much as it facilitated the growth of economic activity, it also enabled rapid response to slaver caravans. The RCBC cut over 600 miles of road in the first year of its operation alone, transforming transportation on the Copperbelt and enabling the freer circulation of people and goods through the area (Coleman, 1971, Letcher, 1932).

Chapters Four and Six discussed how variation in the imposition of colonial rule was often dictated by ease of access by colonial authorities. In this regard, mining companies were important actors in facilitating colonial rule through their infrastructural support for

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275 Angola
276 NAZ NE A1/4/3/5 Mining claims and prospects north of the Zambezi 1902-8
277 NAZ NE A1/4/3/5 Mining claims and prospects north of the Zambezi 1902-8
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the state's activities (Allen, 2003, Mann, 2003). Implicit in many of the early activities of
the mining companies then, was the state-making project of the BSAC. The Southern
Rhodesian mining boom and the role of the mining claim illustrates this point well.

The rush of mining claims and activity in Charterland following the Southern Rhodesian
gold boom of the 1890s demonstrates the role of the mining industry (and its requirement
for fixed territorial control) in enacting the new regime of private-property rights and
closures at the heart of British rule. This activity was indelibly also a state-making
project – inscribing a new political scale and logic on the African landscape. The
political-economic link in this process was the mining claim. The mining claim is a key
device in this shift from distant, unknown nature to valuable prospect (Bridge, 2007,
Tsing, 2000). This institution\textsuperscript{278} connects investors in metropolitan finance markets to the
subsurface in the resource periphery and performs a number of functions. \textit{Firstly}, it
provides legal access to a set of 'proven' resources rendering them legible to distant
economic calculations. In doing this, the mine claim fetishises the land of the periphery –
dislocates it from its cultural, social and political history and reinserts it into socio-
economic relations and calculations which are largely dictated by the needs of the
metropole and held within the new political sphere of the colonial state. Operating as a
'bundle of rights' with a specific economic valuation, the mine claim encloses a specific
area of African nature and offers monopoly access to a resource for the now distant owner
(Bridge, 2007). Here, the African landscape is commoditised, rendered legible to, and
capable of ownership on, share markets in London. This is largely an economic logic but
it is also inherently a political act as, \textit{secondly}, the mine claim obliterates existing claims
and rights regimes and inscribes new ones. With the mines claims in Southern Rhodesia,
the claims of the recently subjugated Ndebele living in the area were written from the
landscape. In Northern Rhodesia, the Lozi, Lamba and the Ngoni were all stripped of
their claims to the mineral outcrops and land amongst and on which they lived. Mining,
here, represents the imposition of a new legal structure of property rights controlled by
the colonial state. In legal recognition of ownership, it enlists the resources of the local
state in supporting access to these resources. The mine claim, in trumping all previous
local claims, represents an assertion of political control and supremacy over territory
(Harris, 2004). In this it is dependent, ultimately, on the military backing of the colonial

\textsuperscript{278} Understood as an organisational form that codifies a set of social relationships.
state. In Southern Rhodesia, the extent of political control was instrumental in shaping the development of the gold boom. Initially, mining prospectors focused on Mashonaland where less powerful groups held sway while the more valuable deposits were to be found in Matabeleland. It took the 1893 subjugation of the Ndebele before prospectors could fully enter Matabeleland (Van Onselen, 1976). Van Onselen (1976) argues that this 'pacification' was a direct result of the BSAC's desire to promote mining in this area. On the North Charterland Concession, the desire to 'pacify' the Ngoni stemmed largely from a desire to claim and extract the abundant gold believed to be in the area (Hall, 1965). Around the 'Big Concession', Frank Lewis and his colleagues worked to impose British supremacy by claiming areas for mining and alienating Africans from their environment (Macpherson, 1981). The local BSAC administrator clearly approved as, when Africans complained to Gielgud of the activities of the mining party stealing their cattle and forcing them into labour, they were ignored (Macpherson, 1981).

The Southern Rhodesian boom and its echoes in Northern Rhodesia, then, were not purely a product of a speculative investing public in London: they were both produced by and reproduced the BSAC's state building project. Bridge argues that we should see these claims as "technologies of state power' that rationalize the mineral estate through a combination of measurement, calculation, recording and visualization, and which collectively perform the resource as an exploitable space" (2007 p.78). The mining claim works to produce an extractive space but is also, integrally, part of a state-making project. To the extent that mine claims were materially acted upon and worked, the 'administrative grids' of the BSAC state were inscribed on the African landscape (Scott, 1998). Prospectors and miners therefore, consciously or not, were reworking the political landscape of Northern Rhodesia as they reworked its biophysical landscape. As they wandered the territory they carried with them and enacted new political scales and lines of authority, rights and decision-making. This pioneer mining and extractive enterprise, through using and acting upon mining claims, both enclosed the periphery and worked to territorialise the colonial state. As such, mining was as much a state-making project as taxation. As these claims grew in size from the 1920s onwards, and the activity in them increased in intensity, the role of mining companies in shaping colonial rule only grew.
In areas of mining, then, the mining companies acted as crucial agents of political control. With their control over the living arrangements and activities of labourers, they became a key political institution regulating the lives of Africans. The colonial state spent much of its time attempting to maintain control and collect taxes in rural areas. In the Colonial Office period, the Native Reserves were a central piece of political technology for achieving these aims. On the reserves, Africans were under the supervision of the Native Authorities. In European employment, Africans were fixed within a political structure aligned with European interests, and thus the broader interests of the colonial state. By intervening to regulate the lives of tens of thousands African workers on a daily basis, and providing and securing political goods, the mining companies took on many of the functions of the state. As the townships on the Copperbelt grew, mining companies came to provide a raft of common goods and services, providing housing, security, roads, infrastructure, health and sanitation and later even services such as youth clubs and recreation facilities (Epstein, 1958, Ferguson, 1999, Spearpoint, 1937). The desire to maintain an effective workforce forced the mines to provide decent accommodation and tolerable working conditions. Failure to provide this led to mass desertions and difficulty recruiting new workers, both of which led to the disruption of mining activities (Gann, 1969, Spearpoint, 1937, Van Onselen, 1976).

The vacuum of service provision the state was unable or unwilling to fill, the mines entered. When Africans were in the compounds or under contract employment, the colonial state was largely happy to leave the job of their supervision to the mining companies (Spearpoint, 1937). There were good reasons for this. The state simply did not have the resources at its disposal to engage in this task. In a context of minimal colonial governmental presence, the mines dominated the social space of the Copperbelt. The mining industry in Northern Rhodesia, by weight of sheer numbers and resources, came to be key in entrenching and territorialising British rule on the Copperbelt. Colonialism then, in Northern Rhodesia was experienced as the implantation of new relationships and responsibilities. Both commercial and state agents enacted the new forms of authority and control established.

279 This is a strictly relative measure as the dire state of accommodation on the compounds was often complained about and was responsible, in part, for the riots in the coming decades (Henderson, 1975, Perrings, 1979). The mines simply needed to be relatively better than other industries.
280 NAZ RC 361 Conference on Native Labour by Mining Companies 1926
281 European mining staff outnumbered colonial staff by a factor of 100:1 in the early 1930s (Epstein, 1958; NAZ KSN 1/1/1 Ndola correspondence, Boundaries 1927-8; NAZ RC 1375 Mining and geology, General review mines department staff and work 1932).
This close relationship had profound effects on the shape of the colonial state. As the copper industry grew to prominence the colonial state responded by relocating departments and resources to meet the demands and strains mining introduced to the territory. The territorial make-up of the state also altered as internal borders and boundaries were shaped and shifted in response to the rise of copper.\textsuperscript{282} The international borders of the territory were even re-drawn as a 6 year surveying mission dedicated to the clarification of state borders with Congo was initiated in response to mining industry questions (Donaldson, 2008, Peake, 1934).\textsuperscript{283} This was a striking development. The 1926-33 Anglo-Belgian Boundary Commission was one of only handful of boundary re-marketing exercises in the period, the only one in southern Africa and the most expensive of its time (Donaldson, 2008).\textsuperscript{284} If, as has been argued, the socio-spatial organisation of its institutions and powers is central to the constitution of the state, this was no small matter. Mining profoundly and literally shaped the colonial state in Northern Rhodesia, changing its resource base, institutional make up and socio-spatial organisation.

To return to Mamdani, if "colonialism is the implantation of a state apparatus in the conquered territory", then the mining companies were central in implanting that apparatus (Mamdani, 1976 p.142). The tenuous beginnings of the colonial state often led it to rely on commercial actors to make its presence known and assert its authority. Mining, so central to the early extension of colonial authority, largely fell from view after 1907 when the international copper price slumped and mining activity reduced. When mining took off in the late 1920s it furthered the state’s requirement for revenue and supported elements of its imperative of social control, forming part of a coherent national strategy explored in the previous chapter. However, as mining grew, so too did its negative effects on social cohesion. Nearby African groups complained of prostitution and theft.\textsuperscript{285} Unemployed Africans remained on the Copperbelt after their contracts ended, leaving them outside the established structures of political control and causing (in retrospect, a

\textsuperscript{282} NAZ KSN 1/1/1 Ndola correspondence, Boundaries 1927-8
\textsuperscript{283} NAZ RC 479 RCBC Mineral areas, roads and water rights 1923-6
\textsuperscript{284} It increased the number of boundary markers by nearly five-fold and the precision and methods used came to set the standard for future boundary commissions (Donaldson, 2008).
\textsuperscript{285} NAZ KSN 1/3/1/3 Ndola Correspondence, Native Affairs general, 1926-8 – Minutes of Native Indaba held at Mkushi Boma 9/6/1928; NAZ KSN 1/3/1/3 Ndola Correspondence, Native Affairs general, 1926-8 – Minutes of Native Indaba held at Ndola Boma 6/7/1928
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The environmental impacts of mining grew as its intensity increased and began to cause tensions with neighbouring populations. As the state struggled to tackle these growing problems it sought a greater share of mining revenues to cover the costs of these activities and greater control over the activities of mining companies. As it engaged in these struggles it quickly became apparent that the Northern Rhodesian government was out-matched.

Colonial regulation

Under BSAC rule, the alignment of state and mining interests was relatively clear-cut and explicit. While the BSAC formally separated its administrative and commercial responsibilities, its actions belied this. As time progressed, the disruptive social and environmental effects of the growth of mining came to be resented by elements of the Colonial Office in Northern Rhodesia and London (Gann, 1969). Greater control over mining companies was sought. Increased regulation of mining was hampered initially by a lack of will and later by inadequate legislative and institutional powers. From the moment the Colonial Office took over the reins, it viewed the commercial interests in Northern Rhodesia with some suspicion. During the Devonshire Agreement negotiations there was a general sense of antipathy towards the BSAC on the part of the Colonial Office (Slinn, 1971). Much of this antipathy is often attributed to an aversion amongst Colonial Office officials to purely commercial interests, but it also stemmed from the perceived negative effects of the growing mining industry and, later, the resource inequalities between the two (Butler, 2007, Gann, 1969). The superior resources of the mining companies meant that they continually had the upper hand in dealings with the colonial state, particularly on the Copperbelt (Henderson, 1975). This struggle reflected clear divisions on the future development of the territory. The developmental aspirations of the colonial state rested on gaining an increased share of revenues being generated by copper mining. The mining companies remained stoically 'South African' in orientation and operated a 'colour bar' on African advancement in their organisations, seeking political structures that matched this (Henderson, 1975). The 1930s, then, saw the beginning of a struggle over which groups would derive benefit from the mining industry.

286 NA CO 799/12 Northern Rhodesia Annual Departmental Reports 1933, Unemployment; NAZ SEC 1/1296 Administration of Native Labour 1931-6
and which groups would shoulder the burdens of its activities. These struggles highlighted the legacy of decades of ineffectual regulation of the mining industry by the colonial state.

Early BSAC presence in Northern Rhodesia was a frontier venture with many of the formal structures of the state either nascent or absent. This was reflected in the mining legislation. The Mines Department was first established in 1903 and it was another nine years before formal mining legislation existed on the statute books (Graham and Halwindi, 1970). Instead, administrators acted on the basis of legislation from Southern Rhodesia which, in turn, was based upon the South African mining law. It was not until The Mining Proclamation of 1912 that a formal framework for governing mining came into being in Northern Rhodesia (Imperial Institute, 1930). The 1912 proclamation was primarily aimed at encouraging small mining prospectors into the region as the mining industry had recently stumbled after early signs of promise. This hastily-assembled piece of legislation was very liberal in its provisions. It gave extensive surface rights to prospectors and miners for the use of water, labour and timber as needed for their operations and included highly involved protections for prospectors rights (Drysdall, 1972). Remarkably, this proclamation formed the basis of mining regulation for the next 45 years (Slinn, 1979). Scant mining activity for the first decade of its existence meant that hastily drafted legislation was of little consequence. The BSAC, after early disappointments, "by and large took little interest in mines" (Gann, 1969 p.124).

However, the failings of the 1912 proclamation were the subject of renewed focus when the mining boom began in the late 1920s. Almost as soon as the Colonial Office took over administration they saw numerous failings in the legislation. The archival record shows colonial administrators frustrated by

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287 NA CO 743/1 Northern Rhodesia Gazette April 1912. With one eye on the future the law was structured so as to clearly separate the BSAC's role as administrator from their ownership of mineral rights as a commercial entity (Slinn, 1979). This issue came to be central in later negotiations over mining legislation as the BSAC retained ownership over the mineral rights in the 1923 Devonshire Agreement (RH MSS. Brit. Emp. s.412 Papers of the Central Mining and Investment Corporation Limited 1/1 Devonshire Agreement 1923). See also footnote 144 on page 144.

288 The law engaged with highly involved protection of prospectors rights and regulation of pegging practices and timeframes all aimed at encouraging and protecting small scale precious metal prospectors and miners.

289 NA CO 743/1 Northern Rhodesia Gazette April 1912
the loose definitions of fundamental terms in the laws, its difficulty of application in a situation where the rights holder (BSAC) was divorced from the administrator (Colonial Office), and its "rather arbitrary" nature overall. Aimed at small-scale gold prospectors it only sought to define two forms of mining – 'reef' mining and alluvial mining. Anything else – which meant almost all mining in Northern Rhodesia by the late 1920s – fitted awkwardly with the legislation. Further, the BSAC had used the proclamation's poorly defined 'special grants' provision to enable large-scale prospecting in the early 1920s. This led to a situation in which the majority of rights held and being worked – covering well over half of the country – did not formally confer any surface rights; as the Attorney General complained in 1928, "considerable areas are apparently occupied and surface rights being enjoyed without any authority whatsoever". Colonial officials baulked when it became clear that the loose definitions, extensive surface rights in the existing legislation and administration of rights being retained by the rights holder (the BSAC) equated to a lack of administrative control over large areas of its territory. The gap between the legislative tools and mining activity only increased as mining grew on the Northern Rhodesian Copperbelt, caused wide-ranging social changes and came to be in the control of a handful of large well-financed companies. The mining boom of the Copperbelt "raised vast problems and left the Governor practically powerless with regard to the mining policies which decided the country's future" (Gann, 1969 p.207).

Clearly, the Northern Rhodesian administrators argued, the legislative situation needed to be changed urgently. However, with mineral rights vested in a third party, the BSAC needed to be involved from the outset. Despite clear flaws and difficulties in applying the

\[290\] The word 'minerals' for example, was defined in the Proclamation as to be "taken and construed in their most general, extensive and comprehensive sense and meaning" which would include such things as soil which was clearly not covered by BSAC rights (NAZ P3 1/1/1 Correspondence, Sir H. Stanley, 1924-6; Minerals; NA CO 743/1 Northern Rhodesia Gazette April 1912; NAZ RC 707 Mining Proposed Amendment of Proclamation 1920-25).

\[291\] NA CO 795/26/7 Mining laws 1928, letter to the Chief Secretary from the Attorney General 31/7/1928

\[292\] NA CO 743/1 Northern Rhodesia Gazette April 1912

\[293\] As in small-scale precious metals mining – reflecting the debt owed to mining legislation in South Africa and Southern Rhodesia.

\[294\] NA CO 795/26/7 Mining laws 1928 – letter to the Chief Secretary from the Attorney General 31/7/1928

\[295\] NA CO 795/26/7 Mining laws 1928

\[296\] NA CO 795/26/7 Mining laws 1928; NAZ RC 358 Interrelationship of mining companies in Northern Rhodesia 1928; NAZ RC 1375 Mining and geology, General review mines department staff and work 1932
legislation as it stood, progress towards changing the law was extremely slow. The BSAC was reluctant to discuss anything which might have curtailed the powers – and rent flows – it currently enjoyed and made arguments that any change to the current regime would:

"Create so grave a feeling of uncertainty as to diminish if not completely destroy the zeal and enterprise with which, at huge cost to the operating companies but to the great advantage of the country, the mineral resources are being prospected and developed." (Maxwell cited in Slinn, 1979 p.91)

The former Chartered Company proved a formidable negotiator. Through a combination of recalcitrance, an unyielding approach to negotiations, connections with senior Colonial Office officials in London and an intervening world war, the BSAC managed to delay changing the law until 1958 (Slinn, 1979). In the process of 30 years of negotiations – conducted entirely in secret and in London – smaller amendments were made such as a clearer definition of 'minerals' to be in line with other mining laws, and 20% of rents being given to the Northern Rhodesia government from 1950 (Slinn, 1979). However, negotiations repeatedly stalled around the issue of ownership of mineral rights. The BSAC refused to allow any question of their ultimate proprietorship in the law and insisted on a 'vesting clause' in the preamble of any new legislation (Slinn, 1979). For much of the colonial period then, Northern Rhodesia was without a suitable legislative framework through which it could effectively regulate the growing mining industry.

During the BSAC period, the Chartered Company quickly lost interest in the mining industry in Northern Rhodesia after early efforts failed to take off. Regulation and administration came largely under the purview of provincial District Offices and a token Mines Department which administered rather than regulated mining activities. With little distinct capacity to regulate mining affairs, and with many other pressing demands, these lonely administrators seem unlikely to have offered much more than just token oversight of mining companies’ activities. The regulatory approach of the Northern Rhodesian state reflected the international policy climate of the time. This was laissez-faire

297 NAZ P3 1/1/1 Correspondence, Sir H. Stanley, 1924-6, Minerals
298 The looming spectre of African nationalism spurred negotiations to their conclusion in the 1950s so as to pre-empt growing African claims to mineral rights (Slinn, 1979).
299 The Ndola District Notebook and Annual Reports give the distinct impression, even at the early stages of the mining boom in 1923, of being only dimly aware of the range of mining activities taking place in the area (NAZ KSN 2/1 Ndola District Notebook; NAZ KSN 3/1/1 Ndola Reports, Annual reports 1919-23).
government. As long as they did not cause much controversy or resentment, the mining companies were largely left to their own devices. The government set regulations on minimum conditions of health, sanitation, safety and hours of work, monitored output at a distance, collected duties, administrated rights (after negotiations with the BSAC) but many other areas such as "wage rates, the apportionment of jobs and even the policing of compounds" fell to the mining companies (Henderson, 1975 p.109). This approach was dictated as much by resources as by governmental ideology. As Berger argues, "in Northern Rhodesia the government had neither the men nor the money to enforce its own regulations" (Berger, 1974 p.18).

As the 1920s mining boom on the Copperbelt began and the mining industry “swelled suddenly to undreamed national importance”, the shortcomings of the colonial government were starkly exposed. Most strikingly, in the face of a rapidly expanding industry, attendant population boom and a squeeze on government resources, the colonial authorities were vastly understaffed and suffered from a high-turnover of provincial staff (Henderson, 1975). In 1932 – at a time when the population of the region had recently doubled and up to 30,000 Africans and 1000 Europeans were working in the mines of the Copperbelt – the Ndola District Office covering the area had a staff of seven, 20 miles from the nearest mine. Admittedly, they were not alone. They had been recently joined from Livingstone by a relocated Mines Department – tasked with regulating mining across the entire territory – comprised of the Secretary of Mines, two inspectors and three clerks (Epstein, 1958). As townships grew around Mufulira, Nkana, Roan Antelope and Nchanga, District Offices were opened on the mines to help manage the growing population in 1931 (Mukula, 1980). These were a token measure. They had little time to engage with anything other than the most pressing demands. One report described how the District Officer at Kitwe/Nkana was, for five days a week, committed to a range of

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300 These were covered initially under the Masters and Servants Proclamation of 1908 (amended in 1925) but more specifically for mining under the Mines, Health and Sanitation Regulations of 1917 (Imperial Institute, 1930).

301 NAZ RC 1375 Mining and geology, General review mines department staff and work 1932 p.3

302 1 District Commissioner (who doubled as the magistrate), 1 District Officer (who doubled as the Native Commissioner), 3 clerks and 2 cadets (NAZ SEC 1/1621 Mining and Geology, department establishment 1928-38; NAZ RC 1375 Mining and geology, General review mines department staff and work 1932).

303 NAZ RC 1375 Mining and geology, General review mines department staff and work 1932

304 The District Offices at Nchanga and Mufulira were closed during the depression 1932-4 (Berger, 1974).
compulsory legal duties (Berger, 1974). This left little scope to engage with any other matters.

It is difficult to measure the impact of government regulation on the mining industry from the archival record. One proxy indicator is the level of complaint by mining companies against government inspectors. There is little evidence of this. Another indicator is details of interactions recorded in internal mining company reports or communication. Again, beyond small-scale inspections, there is little evidence of substantive intervention and regulation. Almost certainly, colonial administrators did not intervene in the activities of the mine companies to the extent that local managers felt the need to report it to their international superiors. Regulation appears to have been largely token, confined to making sure everyone wore hard hats and that explosives were kept under lock and key – small details compared to the scale of the mining industry. With changes in the mineral legislation ‘pending’ for decades, the control that the mines department should be able to exercise over the mining industry was unclear, leaving the department in limbo. The Secretary of Mines in 1932 felt that his department was all too often “over-looked” as the Secretariat had steadily taken over any substantive talks with the mines, relegating the mines department to being a “purely technical inspection department”. He pointed out that they hardly had the resources even for this reduced role. The Mines Department of neighbouring Tanganyika, with mineral exports valuing one tenth of those of Northern Rhodesia, had over twice the staff and double the funding of its Northern Rhodesian counterpart. The Secretary for Mines also complained that he was unable to substantively monitor the activities of the mining industry. The department did not have the financial means to visit the growing number of individual mining and prospecting operations even “once or twice in the course of a year” “neither on behalf of mining, nor explosives, nor of claims, nor of water affairs, nor even for the sake of establishing mere contact”. One administrator characterized the relationship between the government and the mining companies as "a terrier chasing a motorcar" (cited in Berger,

305 Partly due to the limited number of Mining Department documents, beyond annual reports, which survive to the present day.
306 NAZ RC 1375 Mining and geology, General review mines department staff and work 1932
307 NAZ RC 1375 Mining and geology, General review mines department staff and work 1932 p.4
308 NAZ RC 1375 Mining and geology, General review mines department staff and work 1932 p.5
309 NAZ RC 1375 Mining and geology, General review mines department staff and work 1932
310 NAZ RC 1375 Mining and geology, General review mines department staff and work 1932 p.7
311 NAZ RC 1375 Mining and geology, General review mines department staff and work 1932 p.6
Hampered by lack of funds and low capacity, the colonial administration was simply unable to effectively regulate the mining industry and the sweeping social and economic changes it was bringing to Northern Rhodesia.

Effective engagement with the mining industry always appeared to be beyond the reach of colonial administrators, either because the industry was too small to notice or it was too large to influence. Institutionally removed from the production process, the colonial state struggled to intervene in mining activities in anything but the most marginal sense. It was also constrained by its reliance on the mining industry for revenues and its attempts, through budget austerity and reduced staffing levels, not to be beholden to them. Government activity thus focused on gaining a share of resource rents and ensuring that the 'externalities' mining created did not extensively undermine social cohesion and political order. Resource flows from the mining industry to the state were dictated by the structure of rights ownership enshrined in the 1912 Mining Proclamation and the 1923 Devonshire Agreement. The BSAC controlled mining rights and royalties until the very eve of independence, annually earning up to £4,000,000 in royalties in the years immediately prior to independence (Grottpeter et al., 1998). This meant that the benefits that could be derived from the boom by the Northern Rhodesian state for its own ends were highly circumscribed. Vast profits accrued to European-owned mining companies while the state was left managing the political backlash and externalities of extraction.

Much contemporary work on the political ecology of extraction focuses on the ways in which negative environmental consequences are externalised from the production process (Howitt, 2001). The strong social and environmental justice sensibilities of this work problematises these outcomes. Rather than view 'externalities' as 'market failures' in which the social and environmental costs are apparently accidentally removed from the final commodity cost, these should be seen as "cost-shifting successes" in which capitalist groups effectively pass many of the costs of production to other groups (Martinez-Alier, 2003 p.210). In this case, neighbouring groups are Africans who were displaced from their lands, whose waters were polluted and whose farmlands were drained to combat

312 And this is literally the eve: agreements for the transfer of mineral rights from the BSAC to the Zambian government were signed at 3pm of the afternoon in which the handover ceremony was scheduled for 6pm (NA DO 118/311 Zambia – British South Africa Company – United Kingdom, Agreements regarding mineral rights in Zambia 1964).
malaria or poisoned by smelter emissions (Schumaker, 2008). Contemporary political ecology analyses have made much headway detailing these kinds of consequences of extraction which are often glossed in official accounts. This silence did not begin in the contemporary period and it is often difficult to gain much direct detail on these externalising processes from the archival record. Schumaker details the mining companies’ struggles to rework the hydrological landscape of the Copperbelt, diverting rivers to control tailings and reduce mine flooding, and draining marshes and surface water to control malaria (2008). While little is made of it, these all no doubt had serious consequences for Africans living in the nearby, as marshy lands were choice agricultural areas. In the 1930s as local smelters were being built in Northern Rhodesia, the government was aware of the potential for damage to vegetation caused by emissions from the new plants. It sought to provide indemnities to the mining industry against possible claims from farmers and ban housing development in downwind areas. Absent from this discussion, however, were African interests, or Africans who might have been living in the area.

These social and environmental transformations brought considerable complaint from local leaders. Despite multiple promises that after moving to Native Reserves Africans would be subject to no further relocations, the boundaries of these reserves were re-drawn to make way for the mines and ancillary services, though this time compensation was offered. As Governor Maxwell toured the country in 1928 to bestow staves on 'grateful African leaders', he met with a barrage of complaints on the Copperbelt. The leaders complained about the new Native Reserves, being repeatedly relocated and the rise of prostitution in the mining centres. In return Maxwell, no doubt acutely aware of the limit of his government's powers, had little more to offer than platitudes. Being forced to move once again to make way for the new railways for the mines was "unfortunate but cannot

313 NA CO 795/53/3 Copper industry: indemnification against claims of damage due to by smelter plants 1932; NA CO 795/60/10 Copper industry: proposed Smoke Indemnity Agreement between the Crown and the corporation 1933-4; NA CO 795/93/4 Smoke Indemnity Agreement between the Crown and the Roan Antelope Copper Mining Company Limited 1937
314 NA CO 795/53/3 Copper industry: indemnification against claims of damage due to smelter plants 1932; NA CO 795/60/10 Copper industry: proposed Smoke Indemnity Agreement between the Crown and the corporation 1933-4; NA CO 795/93/4 Smoke Indemnity Agreement between the Crown and the Roan Antelope Copper Mining Company Limited 1937.
315 NAZ KSN 1/3/1/3 Ndola Correspondence, Native Affairs general 1926-8
be helped”\textsuperscript{316}.\ Again, the archival record is thin, but the resentment of local groups of mining activities is apparent. For Siegel, the ongoing resistance of the local Lambas to the mining industry (and resistance to working in it) was central in their being seen as 'wild and lazy' (Siegel, 1989). Laziness in this instance meant passive resistance to the demands and changes of colonial rule.

Far more politically destabilising in the long-term, however, was the population growth and density that mining brought to the Copperbelt. The rise of urban populations on the Copperbelt reshaped the political landscape of Northern Rhodesia. These urban populations led to Northern Rhodesia having the largest urban population on the continent. As the urban centres of the Copperbelt grew unplanned they developed a 'bifurcated' nature as they were split between those areas controlled by the government and those controlled by the mining company (Epstein, 1958). Invariably, this meant that the company side had better service provision. It also meant that a growing population of young African men were living outside of the control structures of Native Authorities or European employment. The focus of political struggle shifted from remote rural areas to the townships of the Copperbelt. The Native Welfare Associations – the seeds from which the nationalist movement grew – sprang up along the 'railway belt' (Hall, 1976). African mineworkers came to form an important political grouping and exercise their agency to political effect. This was vividly encapsulated by the growing trend for riots from 1935 onwards and the efforts made to harness the political agency of urbanised mineworkers in the independence struggle (Gann, 1969, Larmer, 2007). Much of this was yet to come. In the 1930s, perhaps the most politically important population growth on the Copperbelt was that of white mineworkers from Southern Rhodesia and South Africa.

**Miners and Politics in the 1930s**

Miners were easily the largest non-governmental European political constituency in the country in the 1920s and 1930s. Where 41% of Europeans in Northern Rhodesia worked for the government in 1931, 35% worked in the mining industry and less than 8% worked in the agricultural sector (Berger, 1974). These miners, many coming from South Africa and Southern Rhodesia, had different notions of the country’s future development to the

\textsuperscript{316} NAZ KSN 1/3/1/3 Ndola Correspondence, Native Affairs general 1926-8, Minutes of Native Indaba held at Ndola Boma 6/7/1928 p.6
London Colonial Office. They were, bluntly put, largely white supremacists and wanted Northern Rhodesia run along lines which maintained European domination.\footnote{Racism was prevalent and racial slurs the norm amongst white miners on the Copperbelt in this period; Africans were often called 'black monkeys' on the mines (Rotberg, 1965b, p. 54)} The London Colonial Office had different designs for the country. It proposed an explicit policy of 'native paramountcy' for Northern Rhodesia, that the country be developed towards an eventual handover of authority to Africans (Henderson, 1975). Colonial administrators in Northern Rhodesia then, had a fine line to tread but were often co-opted by domestic white interests (Henderson, 1975). Fundamentally, this equated to a colour bar across the government and mining spheres where Africans were systematically prevented from rising up the ladder (Henderson, 1975). Expenditure on African services and development was lower than in surrounding countries with lower revenues. It is with a sense of the banality of this observation that Henderson writes:

"It is a feature on the history of Northern Rhodesia in the 1930s that the official and independent reports upon its administration and policies were uniformly critical of the lack of progress made in African development, even compared with dependencies whose revenues were poorer" (Henderson, 1975 p.96).

As global economic depression bit in Northern Rhodesia in the 1930s, thousands of workers, black and white, were laid off (Gann, 1969). Government spending was cut across the board as the 1933 budget registered a large deficit after a series of years of dramatic growth (Berger, 1974). The revised spending priorities of the government reflected the growing political power of white settlers in Northern Rhodesia. For the first three decades of colonial rule, accountability and domestic political pressures were held at some remove from decision-making structures. The Advisory Council established by the BSAC in 1918 was seen as unsatisfactory (Phiri, 2006). The 1920s saw a decisive change in domestic (white) accountability in government decision making when a Legislative Council was formed in 1924 by the Colonial Office and expanded to include an increasing number of white settlers (Phiri, 2006). The administration of Northern Rhodesia became progressively embedded in an increasingly political setting with the development of apparatuses and institutions that reflected the growth of different political and economic constituencies.
The potency of the white voice shaped the interventions of the colonial state in the face of London Colonial Office desires. As the settler population and their influence grew, and as the mining industry expanded, the desire from the London Colonial Office for 'Native Paramountcy' struggled to find expression. The distant requests from Whitehall struggled to be heard over the clamour of white settlers who became involved in politics specifically to resist this aim (Berger, 1974, Henderson, 1975). Repeatedly, Governors were captured by local interests and encouraged to continue the development of the country along 'South African lines', maintaining important elements of the BSAC institutional legacy (Berger, 1974, Henderson, 1975). It was political suicide for Governors to directly challenge this until well after World War II (Henderson, 1975). White settlers lobbied hard against policies which promoted African development to the extent that Africans would then be able to compete with whites for skilled jobs on the mines and in the government (Henderson, 1975). In the cuts of the 1930s, amongst those hardest hit were programmes which invested in African education. Plans for an African secondary school were shelved and a training college cut back (Henderson, 1975). Across the wider region, cash-strapped governments recruited cheaper African labour to carry out lower-level clerk jobs. In Northern Rhodesia, however, these jobs remained the preserve of white settlers.\(^{318}\) Henderson describes the result:

"Thus a vicious circle of inertia was created whereby the government postponed action on Africanisation because of the retarded state of African education; African education was held back by the blanket excuse of 'lack of funds'; and to a large extent 'lack of funds' was attributable to the upkeep of a highly expensive white establishment" (Henderson, 1975 p.86)

The mining industry too was reluctant to act as a vehicle for African advancement and movement in this direction was met with opposition (Henderson, 1975). The perennially under-resourced government was captured by white interests favouring the 'South African lines' narrative.

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\(^{318}\) Frederick Green, head of the Tanganyika Department at the Colonial Office, commenting on Northern Rhodesia's financial crisis in 1932, said: "The reason, [for the financial difficulties] is that a tropical native territory was run by the British South Africa Company on South African lines, employing expensive whites on petty work and doing nothing to train the natives. Since we took the place over in 1924 the position has, if anything, grown worse. As an example of this method, the Provincial Administration, which uses 105 administrators to control a smaller population than Nyasaland manages with 45 (of course the difference in area must be allowed for), employs 19 European clerks at an average of £400 a year. Nyasaland has one (who I believe is at headquarters) and does the work with first grade native clerks averaging £70 a year" (cited in Henderson, 1975 p.84).
model' of long-term white paramountcy. The competing state project of African development found little expression until the eve of independence.

Figure 15: Northern Rhodesian mineral production by value 1930-38

Producing the Copperbelt

In the second half of the 1930s the copper industry took off. As the price rose and cartel restrictions were removed in 1936, The Economist "foresaw a magnificent future for the distant north" (cited in Gann, 1969 p.209). In the course of the decade, copper exports rose from 8,600 tons to 266,600 tons (see Figure 15 and Figure 16). As the mining industry grew, it rapidly consolidated into two large company groups – Anglo American and Rhodesian Selection Trust – developing further economies of scale. By 1940, Northern Rhodesia produced over 260,000 tons of copper each year, and went on to be one of the world’s largest exporters of copper by the time of its independence (Berger, 1974, Parpart, 1983). Not only was production booming, it was immensely profitable. The lean years of the early 1930s forced cost cutting which boosted profits when production increased (Berger, 1974). With extensive rich ores, modern production technology, cheap transportation links to metropolitan markets and a free-flowing supply

319 Source: NA CO 799/15 Northern Rhodesia Annual Departmental Reports 1936; NA CO 799/17 Northern Rhodesia Annual Departmental Reports 1938
of cheap labour, conditions were very favourable for copper mining in Northern Rhodesia. By 1937 Roan Antelope was turning an annual profit of £1,790,308 (Mining Magazine, 1937). The previous year, Nkana had become the world’s largest cobalt producer, simply from harvesting traces of the metal in the copper ore (Hailey, 1938). By the end of the decade, 87% of Northern Rhodesia’s export earnings came from copper and the mines were contributing up to three-quarters of the government’s total income tax receipts (Roberts, 1982). In the same period, the mines were paying 80% dividends on their stocks, despite massive investment programmes (Parpart, 1983). By the late 1950s, this had risen to 200% in some years and was regularly over 100% (Parpart, 1983). By independence, mining had generated £160,000,000 in royalties of which £79,000,000 accrued to the Northern Rhodesian government and £12,000,000 to the British government (Roberts, 1982). The BSAC alone, by dint of its mining rights, despite failing to make a profit in three decades of colonial administration, reported that is made £70,000,000 from mining royalties in the 30 years prior to Zambian independence (Roberts, 1982). With this growth in the mining industry, Northern Rhodesia experienced economic growth like never before. The expanding copper mining industry came to define the region. Decades later it officially changed its name to include the mineral upon which its industrial development had been based (Grotpeter et al., 1998).

![Figure 16: World and Zambian copper production 1885-1964](Schmitz, 1979)

320 Source: (Schmitz, 1979)
Deriving few of the benefits and suffering most of the burdens of this boom were Africans. While white settlers captured the gains of both employment and mining revenue, the Native Reserves descended into deepening rural poverty. Investment in state services for Africans was minuscule and contributed to the increasing inequality in the country. The politics of the 1930s which helped produce this result were defined by struggle that was a simultaneously ideological (or discursive) and programmatic (or material). Ideologically, it was a struggle between white and black paramountcy: over who should inherit the country, and in whose long-term interests should decisions be taken. This struggle, played out in an arena of governmental cutbacks and a booming mining industry, was also a fundamentally material one. It was effectively a battle over access to the country's two main sources of wealth – government employment and natural resource rents. In defining the ways in which natural resource and government revenues would be distributed and in defining who should have access to government jobs, the outcome of this struggle shaped the development of Northern Rhodesia in the coming decades. This struggle is not geographically or historically specific to 1930s Northern Rhodesia. It is an expression of a broader rise in settler – administration conflicts across Africa in the late colonial period. Lonsdale and Berman describe a strikingly similar situation in colonial Kenya where:

"The increasing scope and intensity of state intervention against the African population, in order to establish the viability of the settler sector, coincided with a rising level of conflict between the settlers and officials who were determined to defend African interests" (Lonsdale and Berman, 1979 p.494).

In many ways this trajectory mirrors wider patterns of state development in African politics as described in the work of Crawford Young and, in particular in his masterly The African Colonial State in Comparative Perspective (Young, 1994, 1998). Young’s book on the colonial state is part of a wider debate as to the nature of African politics, if indeed such a discussion is at all possible or researchers “should talk not of ‘African politics’ but only of ‘politics in Africa’” (Allen, 1995 p.302). A central concern within this debate is to the influence of historical antecedents: should the colonial period be seen as a brief interlude in a longer tradition of African politics, or was the impact of colonialism to totally reorder and restructure political relations and forms? Young is firmly in the latter camp using Stanley’s nickname of ‘Bula Matari’ (the crusher of rocks) as a synonym for the African colonial state of the nineteenth- and twentieth-centuries (1994 p.1-2) and arguing that it “totally reordered political space, social hierarchies and cleavages, and modes of economic production” (1994 p.9-10). Bayart (1993), conversely, argues that African politics needs to be seen in the longue durée, with colonialism but a brief interlude in deeper patterns of African politics witnessing a post-
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outlines the stages of development of a remarkably powerful and influential state infrastructure which shared many commonalities (along with distinct differences) across the continent. For Young, these stages were conquest, early construction, expansion in the 1920s and subsequent contraction in the 1930s - paralleling the structure of the preceding chapters. The colonial state which developed in Africa in this time bore remarkable similarities across the continent despite a range of local conditions and disparate models of state development and function. Young attributes this similarity to the intersection of six imperatives common to all states: hegemony, autonomy, security, legitimacy, revenue and accumulation. He also links it to the fiscal constraints imposed by a widespread doctrine of colonial self-sufficiency (1994). In this thesis, Young’s six imperatives have been understood as two primary concerns: securing capitalist accumulation (revenue and accumulation in Young’s terminology) and securing political stability (hegemony, autonomy, security and legitimacy in Young’s terminology). The intersection of these imperatives, fiscal limits, Darwinian discourses of racial superiority and largely hostile geographies explain many of the actions and features of the colonial state in Young’s analysis – from its penchant for and use of arbitrary violence, insatiable appetite for labour for porterage to the reliance on African intermediaries and political structures for transmitting colonial demands. Fundamentally however, Young identifies the key challenges as those of securing hegemony and ensuring a sufficient fiscal resource basis for the reproduction of the state. The fiscal limits of the colonial state in Africa produced a range of state institutions and interventions which centred on transforming African labour into a steady revenue flow while maintaining political stability. In the absence of many potential sources of accumulation, “all fiscal trails led to the African subject” (Young, 1994 p.126). In Northern Rhodesia, however, the fiscal trails ultimately led to the mining industry.

This close relationship with the mining industry - the industry which provided the country’s original impetus and birth in the form of the BSAC - was a central feature of state development in Northern Rhodesia. As the mining industry grew in strength in the independence re-emergence. While the political struggles of 1930s Northern Rhodesia bear clear resemblance to Bayart’s ‘politics of the belly’, this thesis rejects this characterisation with its “tendency to reduce African politics to personal accumulation and patronage, devoid of ideals, struggles for justice [and] notions of equality” (Szeftel, 1998 p.223). Instead, echoing Young and others, this thesis sees the colonial period as fundamentally transformative - particularly in terms of patterns of socio-environmental relationships with clear political-economic legacies which can be witnessed today – and concerned with equality and justice in access to resources.
1930s, this presence became ever more palpable. The 1930s was a pivotal decade in laying the foundation for the political struggles which shaped the Northern Rhodesian state until its independence. The struggle between ‘native’ and ‘settler paramountcy’ witnessed in 1930s Northern Rhodesia was played out in a state which was structurally coupled to the Copperbelt mining industry. State intervention focussed on two issues that have been discussed throughout this thesis: (European-controlled) political stability and social cohesion, and ensuring conditions for the reproduction of capital. Along these two axes the lines of colonial authority coalesced, new institutions were generated and the key features of colonial rule in Northern Rhodesia constituted. And along these axes the mining companies played an important role in furthering state aims. For the first of these two axes the colonial state worked to impose military supremacy and political stability. The state was also happy to outsource some of this function to the mining companies, giving them a broad scope of action to control, manage, dominate and exploit their workers and the local natural environment as long as this did not generate substantial political unrest. Along the second, the colonial state's interventions focussed on three main features – the imposition of taxation, controlling natural resources through regulating socio-environmental relationships and working to enable the activities of the mining industry.

This was a state which was, from its inception, starved of revenues and extremely modest in its extent. With only a handful of (often inexperienced) administrators at its disposal, its capacity to engage the mining industry, white settlers or even organised African resistance was highly limited. The effect of these fundamental imperatives, competing state projects and constrained state resources and capacity was a highly uneven form of rule. While certain areas of Northern Rhodesia were subject to minimal interference, others were subject to forceful and repeated intervention. This was no haphazard pattern. In the irregular and uneven colonial rule in Northern Rhodesia, one pattern emerges clearly – it was most felt and most apparent where the interests of the mining industry and the colonial state converged. To the extent to that mining companies shared the aims and vision of colonial rule, their actions served to further its extension. As far as they sought European control over land and natural resources, they shared the state's desire for military and political supremacy. In so far as mining companies sought exclusive access to minerals, they shared the colonial state's understanding of private property rights.
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Where they employed Africans in wage labour, they shared a desire for 'economic rationality'. Where their interests did not coincide, the state was fundamentally ill-equipped to challenge the mining industry. Lacking the capacity, expertise and political backing to regulate the mining industry effectively, the Northern Rhodesian state concerned itself mainly with mopping up around the edges. The result was a state which reproduced and maintained a 'system of inequality' established in the BSAC period (Bayart et al., 1999). The introduction of Colonial Office rule failed to redirect Northern Rhodesian development towards 'native paramountcy' as historical legacies, limited capacity and new political constituencies inhibited this. The benefits of copper mining continued to accrue to European owners with the environmental and social costs borne by Africans. The result was an intensification of inequality whose roots had been laid in the BSAC period.

Conclusion

Much is often made of the divergences in outlook and aims between Colonial administrators and mining industry interests in 'liberal' historical accounts of Northern Rhodesia (Butler, 2007, Gann, 1969, Henderson, 1975). From a little remove, however, it is clear that the mining industry and colonial state had more interests in common that they had differences. The development of the colonial state from 1890 to 1939 clearly demonstrates this. The extension of mining was implicitly and explicitly involved in the extension of state power from the earliest days of British rule in Northern Rhodesia. The mining industry enjoyed a great deal of autonomy as it bolstered key aims of colonial rule and, through revenues, wages and control over labourers, supported the colonial state. Being so dependent on the mining industry was both a boon and a problem for the colonial state. Where the mining companies undermined political stability or refused to help develop Northern Rhodesia on African lines, they were frequently unpopular with colonial administrators.

The reliance of the state on the mining industry also fatally undermined its efforts to regulate the industry and harness its benefits for the African majority. Early regulation of the mining industry on the Zambian Copperbelt was partial at best and often absent in many key respects. After decades of languishing in the doldrums, the sudden boom in mining activity and rapid concentration of population on the Zambian Copperbelt caught
the colonial authorities off-guard. Struggling to catch up with the rapid and manifold social transformations this boom engendered, the under-resourced Northern Rhodesian state had little control over its new dominant industry. With ineffectual legislation, the smallest of regulatory agencies and a fundamental dependence on the mining industry, the colonial state was largely a bystander to much of the activity of the Brobdingnagian\textsuperscript{322} mining industry on the Copperbelt. This inability to challenge the activities of the mining industry on the ground was matched by an inability to claim a larger share of the mining revenues for state projects. As the Chief Secretary remarked in 1933, “the wealth of the country is in the minerals which it does not own” (cited in Gann, 1969 p.253). The struggles over 'paramountcy' and rent flows which unfolded in the 1930s set the format for politics for the next few decades and arguably longer. After the Second World War, when the political wind shifted in London and domestic political demands grew in strength, the relationship between the mining industry and Northern Rhodesian state gained greater equality as increasing demands were placed on the mining industry to contribute to the nation's overall development (Gann, 1969). This was, however, an incremental change. The system of white European control over property rights and jobs begun in the BSAC period was impossible to reform until independence loomed and became a reality. Even then, the Zambian government struggled to gain control over the mining industry.

The 'systems of inequality' generated and entrenched in the early colonial period provided the basis for the extraordinary growth of the Northern Rhodesian copper mining industry. The space which mining companies came to occupy in the 1920s and 1930s was carved out through decades of colonial rule. The explosive expansion of the mining industry in the late 1920s and 1930s was only possible on the back of decades of intervention by both the colonial state and commercial actors in reworking socio-ecological relations along more capitalist lines. The rise of the mining industry encouraged and entrenched similar processes, drawing the Northern Rhodesian Copperbelt right into the heart of global circuits of capital. The Copperbelt's commercial success was the product of decades of effort. Over time, the obstacles upon which early efforts foundered were removed; the cash economy took hold, political domination stabilised, mineral resources were carefully

\textsuperscript{322} In Jonathan Swift’s \textit{Gulliver’s Travels} Brobdingnag was the counterpart to Lilliput where everything was colossal rather than diminutive.
mapped, the diseconomies of space reduced and labour shortages ended; in short, an extractive space was produced. Inherent in each of these steps was inequality. Control over land, nature and the conditions of life in Northern Rhodesia steadily moved from African to European hands. This inequality of access to and control over mineral wealth was both produced by and reproduced colonial rule. The outcome was a regime of access and control which generated and perpetuated inequalities within colonial Zambia and in the international capitalist system. A regime which produced a remarkably resilient, if unenviable, legacy: a highly effective extractive space closely bound to deep rural poverty and deprivation.
Chapter Eight: Conclusion

Introduction

Three decades after his death, Rhodes got his ‘second Rand’ (Gann, 1969). Only, it was found in Northern, not Southern, Rhodesia, and its wealth lay in copper, not gold. The economic development of Northern Rhodesia from this period was largely paid for by the copper mines. For Letcher, “the whole modern edifice in South Central Africa has been built on the basis of copper” (1932 p.12). The Copperbelt has its origins in Rhodes’ era and dreams, but the realisation of this vision took decades. Mining commentators often enjoy describing the industry as the forerunner of civilisation. As one review following the then recent booms in Africa put it in 1898:

"Many of our colonies would be undeveloped regions but for their minerals; the British mining adventurer has been the pioneer of civilisation in most, preparing the way for further trade and commerce" (Ashmead, 1898 p.39)

There is truth in this. Mining is in many ways the archetypal frontier industry. Able to provide for many of its own infrastructural needs and progressively force open new sources of supply in distant corners of the globe, it is a trailblazing commercial activity. By Ashmead's, and many of his contemporaries', judgment this makes 'mining adventurers’ spearheads of civilisation. The mining industry was clearly the largest commercial pioneer in Northern Rhodesia, but for four decades it struggled to produce commercial success. Once it did, the transformation was remarkable, the Copperbelt mining industry “waxing in a manner hardly equalled in history”. As was described at the beginning of this thesis,

"In no other area of the world has there been, during the present century, such a transformation of social values, such a development of commerce and industry and transportation, or such an intensive application of scientific knowledge to so large a region previously so primitive and so little known" (Letcher, 1932 p.15)

The thesis has explored this 'transformation' from colonial backwater to commercial hub with attention to the dynamics of the copper industry and of colonial rule. Informed by

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323 NAZ RC 1375 Mining and geology, General review mines department staff and work 1932 p.4
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present day inequalities and poverty in Zambia, this thesis has explored these dynamics in relation to the long-term patterns of inequality which they helped generate.

This concluding chapter begins by revisiting the arguments presented in the previous six. These summaries are then used to highlight how the arguments and evidence presented in these chapters answer the questions posed towards the end of the first. The questions of extractive space, changing socio-environmental relations and contradictions of extraction and rule are each tackled in turn. The potential contributions of the thesis are then outlined in relation to literatures on the political ecology of extraction, the development of the Copperbelt, and power and rule. The chapter ends by briefly noting the parallels between history and the present – particularly the ongoing struggle over mineral rents – before moving to a final reflection on the origins of inequality in Africa.

The argument so far

The primary aim of this study was to examine the co-production of an extractive economy and social inequality on the Northern Rhodesian Copperbelt in the early twentieth-century. Chapter One introduced the wider literature on the Copperbelt and the theoretical ideas underpinning this research. It began by counterposing the wealth and transformation the Copperbelt boom produced with the surrounding rural poverty, noting the enduring legacy of this inequality. The historical literature on the development of the Copperbelt was then reviewed, drawing on the technical mining literature, the business and economic history literature, the post-independence critical histories of colonialism and a range of Marxist studies of mining and underdevelopment in Africa. An alternative approach was then offered: political ecology. The following section elaborated a political ecology of mining, highlighting a range of studies which have developed ideas and insights relevant to the current research. The central concern of political ecology analyses was argued to be an interest in the politics of environmental transition and the changing forms of access to, and control over, resources. Throughout this section, three concerns were noted as relevant to the current study – the specificity of large-scale mining as an extractive practice, the ideas of power and rule which underpin political ecology studies and the relationship between power and space. The first was an implicit theoretical and empirical critique of political ecology and the second and third were theoretical critiques
of both the historical and political ecological literature. This chapter concluded by setting out research aims and questions and outlining the thesis. This thesis has aimed to:

- Describe how the Zambian Copperbelt was produced as a space for natural resource extraction and integrated into global commodity markets in the early colonial period
- Understand how extractive capitalism and colonial rule were both produced through changing socio-ecological relations on the Zambian Copperbelt
- Explore the ways in which the imperatives and contradictions of mineral extraction shaped rule in colonial Zambia and vice-versa
- Examine how the regimes of access to and control over resources established on the Zambian Copperbelt in colonial period generated and maintained relations of inequality
- Analyse how these regimes of access and control and changed socio-ecological relations helped produce the conditions for ongoing inequalities in Zambia

To achieve these aims, three specific questions were posed:

- How was the Zambian Copperbelt produced as a space for natural resource extraction and export to global commodity markets in the early colonial period?
- In what ways did 'European' actors intervene in socio-environmental relationships in colonial Zambia to produce new regimes of access to and control over resources on the Copperbelt?
- How did the political economic imperatives of extraction and the political imperatives of colonial rule interact to produce the inequitable political ecology of extraction of the Northern Rhodesian Copperbelt?

The answers to these questions were elaborated over six chapters:

*Chapter Two* sought to briefly explore the origins of British rule in central southern Africa. The origins of the project within the growing power of the global mining industry – and specifically the South African mining industry – were highlighted. The two main concerns of the BSAC in this period were establishing international-legal and domestic-military control of the territory. Having gained broad military control of the territory, the
early shape of British rule was explored through Francis Jones’ proclamation of British rule on the Copperbelt in 1904. The legacy of conquest in early administration was clear as rule in this period relied largely on the tactical application of superior military force. The establishment of international-legal and domestic-military control over territory was central in changing the regimes of access to and control over natural resources and laid the basis for future intervention. The beginnings of these were indicated in Jones’ speech, but the onerous forms of intervention which followed were not.

Chapter Three explored the early mining activity in Northern Rhodesia arguing that these initial attempts at commercial success, while frequently failures, left important legacies. The origin of mining in Northern Rhodesia was argued to be largely a product of the Southern African and Southern Rhodesian gold mining booms. Initially, mining was encouraged by the BSAC administration as its long-term hopes in the region depended upon revenues from exports. However, the reality belied the dream. The hostile environment, technical difficulties, distance to markets and labour scarcities all conspired to reduce the profitability of these new ventures. All but a handful failed within a few years. The obstacles of transportation (increasing the cost of inputs and exports, and curtailing access to heavy mining equipment), insufficient geological knowledge, high volumes of groundwater and labour shortages remained challenges that future successful mining enterprises would have to overcome. In attempting to make these enterprises successful, areas were claimed for mining, railways were built, roads cut and taxation imposed. A mining services industry also began to grow in Southern Rhodesia. These infrastructural and institutional legacies of the hunt for a ‘second Rand’ were crucial in the future development of the mining industry.

Chapter Four focussed on the consequences for colonial rule of these early efforts in creating an extractive economy. A hut tax was imposed to generate the cheap African labour upon which commercial success of mining depended and funds for administration. This, combined with the violent disruption of multiple forms of African-controlled production, produced widespread turmoil and hardship. Africans resisted the increasingly onerous impositions of British rule. The response was often brutal subjugation, brutal to the extent that its moral unpalatability drove many Europeans from BSAC service. However, the BSAC was only marginally successful in its aims. As it relied on only the
smallest of administrations and African political structures, it struggled to impose its authority across the vast territory. Further, the clumsy interventions often served to produce political instability and the threat of widespread revolt rather than the political control desired. These tensions emerged as much from the contradictory aims of colonial rule as they did from the methods employed. Seeking to preserve social stability and change economic relations at the same time placed a contradiction at the heart of colonial rule which was impossible to remedy with the brutal approach and scant resources of the BSAC. The imposition of a hut tax was a key technology for the production of new systems of rule and changing socio-environmental relations to become more export and extraction-oriented. The weak resources, extractive institutions and white-supremacist aims of the BSAC colonial state left an important legacy for the future development of colonial rule in Northern Rhodesia. Dissatisfaction with BSAC rule, along with a changing policy climate, led to the Colonial Office taking over administration in 1924.

Chapter Five explored the development of the copper industry in the 1920s and the importance of knowledge production in shaping patterns of extraction on the Copperbelt. This was the decade which placed Northern Rhodesia on the international mining map. The changed BSAC policy allowing well-financed mining companies to control prospecting in areas the size of an average European country exclusively, proved decisive in changing the fortunes of the territory. The chapter explored how, with exclusive access and a commitment to invest, the RCBC and other companies prospected the Copperbelt area for minerals and soon discovered extensive copper deposits which had lain unnoticed during decades of previous prospecting. To discover these deposits, a series of physical, technical and epistemic obstacles needed to be overcome. In the main, these obstacles were surmounted through the application of technology, capital and the rigours of science. These prospecting operations produced vast quantities of data and enabled the Copperbelt to become ‘legible’ in new ways. This knowledge, and way of knowing the Copperbelt, enabled copper mining to take hold while the narratives and structure of colonial science legitimated the assumption of control over natural resources. As this knowledge was developed, producing a representation of the Copperbelt which was readily understood by potential investors, it triggered further investment leading to the development of a number of large-scale mines on the Copperbelt. The chapter concludes by briefly describing the construction boom which attended this development. Proving the
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presence and indicating the extent of these mineral resources helped transform a small remote section of the African interior into 'the Copperbelt'.

Chapter Six examined the changing nature of colonial rule in Northern Rhodesia in the 1920s. As the BSAC handed over the reins of power to the Colonial Office the aims, targets and techniques of colonial rule altered. The Colonial Office brought with it a 'benevolent paternalist' approach and an expressed desire to improve the welfare of Africans in Northern Rhodesia in the form of Native Authorities and Native Reserves. These two policies, on the face of it, sought to strengthen African autonomy and political stability, enabling the preservation of 'traditional' ways of life while simultaneously encouraging gradual assimilation of the benefits of European 'civilisation'. Instead, they produced widespread upheaval and speeded the process of rural underdevelopment by draining many areas of labour and undermining African agriculture. They did, however, produce rural political stability; at least in part through displacing political unrest to the growing urban centres of the Copperbelt. As populations were relocated and the global depression took hold in Northern Rhodesia the labour problems of the mining industry were 'miraculously' solved. The systematisation of rural underdevelopment within logics of rule aimed at developing rural areas and maintaining political stability were central in securing a key input to mining production – cheap African labour. The Native Reserves linked urban development with rural deprivation and helped produce a resilient legacy of inequality.

Chapter Seven explored the relationship between the colonial state and mining in Northern Rhodesia during colonial period. The chapter explored three elements of the relationship – the ways in which the mining companies helped territorialise British rule and establish and maintain political control, the varying attempts by the colonial state to regulate the mining industry and the development of national politics in the 1930s. In the earliest days of the British presence in colonial Zambia – when many of the features of the colonial state and European rule were abstract ideals rather than practical realities – the infrastructural strength, territorial focus and pioneering nature of the mining industry were important in bolstering BSAC attempts to control the area. This early reliance by the state on the mining industry to buttress its domination of the African populace, continued and circumscribed the colonial state’s ability to intervene in the mining industry. The
relative weakness of the underfunded, low capacity Northern Rhodesian state ensured that it was incapable of regulating the fast-growing industry and unable to claim anything but the smallest share of the vast profits being raised in copper mining. The political struggles of the 1930s and the growing power of white-supremacists miners in Northern Rhodesia were also central in ensuring many of the benefits of employment and mining were captured by Europeans and not Africans. In these three regards then, the mining industry – colonial state relationship was central in producing an extractive regime in which the majority of the benefits of extractive mining accrued to either the domestic white population or outside of the country altogether.

The following section returns to the research questions in turn to show how the evidence and arguments presented in the thesis so far answers them.

**The research questions**

**How was the Zambian Copperbelt produced as a space for natural resource extraction and export to global commodity markets in the early colonial period?**

The success of both mining and colonial rule in colonial Zambia centred on the production of space and nature. For mining, this was specifically an extractive space in which valuable materials and surplus capital were extracted from Northern Rhodesia. Space here, has three relevant dimensions – (1) its materiality and physical composition, (2) the forms of social action and the decision making structures for areas and the actions allowed within them, and (3) the ideas through which the space is ordered, the way the space is understood and represented. In order for the space of the Copperbelt to be successfully extractive – to direct flows of material and capital to global commodity markets efficiently – it needed to be realigned along each of these axes, each constitutive of the other. These three aspects are discussed in terms of the evidence presented in the thesis below.

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324 See discussion and footnotes on space and nature on page 49
325 A trifecta which is inspired by, but not rigidly based upon, the work David Harvey and Henri Lefebvre (Harvey, 2006, Lefebvre, 1991).
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The materiality of Northern Rhodesia and the Copperbelt provided both opportunities and challenges. The remove of the mineral wealth of the African interior from commodity markets was a considerable economic challenge. Further, its large groundwater flows, diversity of tropical diseases, and cumbersome geography all undermined efforts to tap the mineral wealth of Northern Rhodesia. However, the comparative richness of ore in the region, its type and convenient subterranean arrangement made a compelling economic argument for extraction. The combination of the railway, the telegraph and the combustion engine helped mining overcome the diseconomies distance created, effectively collapsing the space between the Northern Rhodesian Copperbelt and factories in the UK, Europe and America. The landscape itself needed to be changed; rivers needed to be diverted, swamps drained, new areas flooded with tailings and entire new cities built to house the large populations required for mining. Here then, large-scale extraction was necessary to realise the economies of scale needed to make mining a successful venture. Only though massive investment in changing the way people and materials flowed through the Copperbelt region was an extractive space produced.

The materiality of the space of Northern Rhodesia also provided challenges to establishing and maintaining political control. The large territory with a low population density made government burdensome and created a highly uneven application of colonial rule. As Africans used the geography to evade colonial power, diseases like malaria and blackwater fever attacked most Europeans in the area undermining their efforts. The material geography of Northern Rhodesia then ensured that techniques of power which do not travel well – such as military force and coercion – were only of limited value in maintaining control. Low population densities shaped the political formations which could and would work in Northern Rhodesia and part of the solution was to create pockets of increased population density both in the BSAC and Colonial Office period. It was only when the political landscape was reorganised through revitalised Native Authorities on defined Native Reserves that colonial authority was able to gain traction in the Northern Rhodesian bush. These political units, though effectively cut off from agricultural markets, were smaller and more fully engaged, and empowered traditional leaders who maintained political stability in rural areas as much for their own benefit as the colonial authorities'. These new material, political spaces are less readily visible than the enormous earthworks which attended the rise of mining. Instead, they are
most clearly seen in the abstractions of a map and in the rise of famine, poverty and increasing depopulation of rural Northern Rhodesia.

To produce a new extractive space, *behaviours* in and around the Copperbelt needed to change. The primary, and blunt, tool for this in Northern Rhodesia was the imposition of the hut tax. A secondary tool was constraining certain forms of African-controlled economic activity. Both of these impositions were used in parallel to encourage other specific forms of economic activity. For the economy to become truly successful, wage labour, taxation and changed property regimes had to become normal behaviours and practices. Here then, the extended presence of the colonial authorities, while unable to have their way all of the time, created an environment in which avoidance of the cash economy was difficult and the penalties for challenging new property regimes severe. The geographical spread of Africans meant that those modalities of power which traverse space most easily, but are also based more on individual choice, were most effective. Where prevention, obstruction and extraction did not directly yield the desired results, the pull of the benefits of wage labour helped provide incentives in which 'economically rational' behaviours were rewarded. This changing focus of rule helped to produce the 'economically rational subject' that both the mining companies and the colonial authorities desired. While more nuanced, and perhaps more enlightened, than the blunt instrument of taxation and coercion, this policy bought control by sacrificing prospects for rural development and broad-based African advancement. It brought the change in rural economic behaviours desired, while simultaneously dismantling their foundation. In doing so, it sowed the seeds for future instability in the growing urban populations on the railway- and copper-belt.

Many of the behaviours the colonial authorities sought to instil in Africans were simultaneously economic and political. The colonial authorities enforced new orders of property relations around natural resources, creating abstract institutions of ownership in prospecting, pegging and mining rights. When these were subsequently backed with material presence and force, new geographies of control over, and access to, resources were produced. Multiple attempts were made to produce a governable space in which British demands were acceded to. The first attempts at this produced a series of 'white chiefs' whose interventions into a rural realm which they little understood were
fundamentally disruptive and produced widespread evasion and resentment rather than compliance and respect. Where direct rule failed, indirect rule, in the form of Native Reserves and Native Authorities proved more successful. African leaders were encouraged to become good leaders and impose legal structures, norms and processes which merged 'native custom' and British common law. African political subjects found their behaviours increasingly constrained and opportunities for evading colonial demands reduced as revitalised political structures imposed their authority in rural Northern Rhodesia. Political tension thus found its most volatile expression in the urban centres away from the Native Reserves.

The Copperbelt was understood in different ways throughout the British colonial period. For many years it languished as a blank until the search for copper produced an enormous wealth of information about the Copperbelt. It changed what was known about the area, making it visible in new ways. The aerial survey, the Anglo-Belgian Boundary Commission, and the geologists of the Nkana concession produced representations of the region of unprecedented volume, detail and accuracy. All of these hinged on either the abstractions of science or the economic potential of minerals. None took much notice of the Africans in the area. As the subterranean bands of copper sulphide came into view, the local Lamba, Lala and Lima receded from it. The domain of the Copperbelt became clear as the domain of copper. The rise of copper on the Copperbelt changed not only how the Copperbelt was seen, but also how it was understood. As the mines on the Copperbelt increased their output, came to dominate the economy, and changed the name of the central province, mining changed the way the colonial state saw and understood itself.

The political space of Northern Rhodesia was shaped by changing understandings of the Copperbelt and its inhabitants. From the inception of British colonial rule, Northern Rhodesia was understood as an open, abundant frontier filled with natural riches. These riches were seen to be either misunderstood or misused by the original inhabitants of Northern Rhodesia. The remedy, as understood by some of the earliest Europeans in the area, was then the application of western knowledge to deliver the 'backward' country to 'modern civilisation'. From the outset, much of this was to be achieved through the 'two C's' of Christianity and Commerce. For most European actors in Northern Rhodesia, it
was the latter of these which received the most attention. The belief that Africans were either a childlike or savage backward race, and that Europeans were inherently more civilised and superior, legitimised much of their treatment. As the remedies to problems changed and developed, the problems from which Africans were understood to suffer changed too. That Africans might be educated to civilisation and development served to produce the remedy of indirect rule and Native Reserves which wrought such long-term damage on rural Northern Rhodesia. Through a diverse range of interventions, this thesis has shown how the space of the Zambian Copperbelt was materially, socially and discursively transformed to enable capitalist natural resource extraction.

In what ways did 'European' actors intervene in socio-environmental relationships in colonial Zambia to produce new regimes of access to and control over resources on the Copperbelt?

David Scott (1995) argues that the most important question to ask of colonial power is to ask: what does it seek to organise and re-organise? In Northern Rhodesia the answer is clear. From the outset, rearranging socio-environmental relationships was at the heart of the colonial project in Northern Rhodesia. Given that prior claim to the natural resources of colonial Zambia could be seen to lie with the area’s original inhabitants, the story of the production of an extractive space in the territory is thus one of African dispossession and alienation from the natural environment. This began with the onset of British rule. The slavery and ivory trades were banned, and trade in military resources curtailed. From here, the colonial state increasingly claimed domain over the natural environment of Northern Rhodesia. The original treaties with African leaders transferred subsurface and some commercial rights to the BSAC. Subsequent acts claimed domain over forests, rivers and game. Some of the first diktats to African leaders centred on tree use, with trees bordering rivers being strictly off-limits. Here, the myth of the ‘profligate native’ and wider scientific preoccupations of the time around desertification and soil erosion found expression in the alienation of Africans from their environment. Along with flora, large fauna were claimed as property of the colonial state and hunting banned without the

326 NAZ KSN 2/1 Ndola District Notebook
possession of a license.\textsuperscript{327} The BSAC even went as far as banning Chitemene agriculture in the 1900s but was forced to withdraw this policy when violent uprising loomed. Many indigenous forms of living and diet were effectively criminalised as hunting for food became poaching. This change was an ongoing source of tension between Africans and colonial authorities for decades.\textsuperscript{328} While also clearly aimed at regulating military resources in the newly-conquered territory, rifles and other hunting tools were subject to close regulation.\textsuperscript{329} The colonial state’s interventions into socio-environmental relationships usually came in the form of curtailing African access to natural resources. This obstructive approach was naturally resisted and, as the reach of colonial power was highly circumscribed, the success of this approach would always be limited.

The 1920s and 30s saw this same attempt to shape socio-environmental relationships take an explicitly spatial dimension. Native Reserves were clearly an attempt to regulate socio-environmental relations of Africans, suppressing competition for land and alienating the majority of land for exclusive European access. On the reserves, socio-environmental relationships were reworked as plot sizes shrank, fallow periods were reduced and new methods encouraged by 'native development' schemes. Reserves were not only for Africans: animals and trees too gained government-regulated enclosed parcels of land. Game and forestry reserves were an early feature of maps of Northern Rhodesia but took on more extensive form and clearer boundaries in the comprehensive mapping and surveying which took hold in early Colonial Office rule. New techniques of power and a shift in emphasis worked to educate Africans in 'rational' uses of the environment and encouraged them to become self-regulating subjects. This was partially successful, but the Native Reserves system largely worked to curtail African access to the natural environment even further and made them increasingly dependent on wage labour for survival as agricultural yields declined. Rural areas were condemned to poverty through the disruption of economic opportunities and then the depletion of labour. These

\textsuperscript{327} NAZ KSN 2/1 Ndola District Notebook; NAZ KSN 1/3/1/3 Ndola Correspondence, Native Affairs general 1926-8, Minutes of Native Indaba held at Mkushi Boma 9/6/1928; NAZ KSN 1/3/1/3 Ndola Correspondence, Native Affairs general, 1926-8, Minutes of Native Indaba held at Ndola Boma 6/7/1928

\textsuperscript{328} NAZ KSN 1/3/1/3 Ndola Correspondence, Native Affairs general 1926-8, Minutes of Native Indaba held at Mkushi Boma 9/6/1928; NAZ KSN 1/3/1/3 Ndola Correspondence, Native Affairs general, 1926-8, Minutes of Native Indaba held at Ndola Boma 6/7/1928

\textsuperscript{329} NAZ KSN 1/3/1/3 Ndola Correspondence, Native Affairs general 1926-8, Minutes of Native Indaba held at Mkushi Boma 9/6/1928; NAZ KSN 1/3/1/3 Ndola Correspondence, Native Affairs general, 1926-8, Minutes of Native Indaba held at Ndola Boma 6/7/1928; NAZ KSN 2/1 Ndola District Notebook
interventions conspired to alienate Africans from their natural environment and transfer ownership, control and access into the hands of Europeans. As the terms upon which Africans could interact with their environment were increasingly dictated by the colonial state, Africans were left in control of their labour and little else. Flows of material, people and capital in Northern Rhodesia came to be increasingly under the control of the colonial authorities and European entrepreneurs. The new regimes of access to and control over the natural resources of Northern Rhodesia had fundamentally extractive aims. Cash crops, timber and minerals flowed from colonial Zambia along newly constructed railways to metropolitan markets. Over decades of intervention into socio-environmental relationships, an extractive space was produced.

**How did the political economic imperatives of extraction and the political imperatives of colonial rule interact to produce the inequitable political ecology of extraction of the Northern Rhodesian Copperbelt?**

Colonial rule in Northern Rhodesia was always straddling a contradiction between economic dynamism and social stability. The effective establishment of economic relations required a range of upheavals and changes in social, environmental and political relations. Colonial rule required political and social stability. The production of a successful extractive space, then, required a balance between the demands of economic transformation and those of political preservation. The two demands of transformation and stability worked together to produce distinctive patterns of rule in Northern Rhodesia. Often, this tension remained unacknowledged and was only recognised as such at times of crisis. The BSAC expanded capitalist relations through the tools of taxation and coercion which rapidly produced a series of political and environmental crises. The same tools of coercion were not well suited to maintaining political stability. The attempts to directly co-opt African political structures by BSAC officials only succeeded in undermining the authority of these structures and reducing the influence they held with local populaces. If African leaders totally acquiesced to colonial demands or transmitted them uncritically, they were usually unseated. The Colonial Office's approach was more suitable for reconciling the tensions. The political stability of alien rule was always based upon a degree of understanding and consent. Consent was acquired by the Colonial Office through more effective co-optation of African leaders and providing more incentives for cooperation and compliance. It also came from using indirect, dispersed tools for
influencing behaviour such as education programmes and market relations. The shift from extractive to optimising aims of power the Colonial Office brought, proved decisive in securing rural political stability in Northern Rhodesia. Time is an important factor here too, as the repeated application of techniques of power slowly sedimented relations of capitalism in Northern Rhodesia. Over decades, they stopped being novel and became the norm. Capitalism, as a dispersed organisation of relations of power became increasingly established and created "the effect of power as a system of demand that exists as something external to daily life", a series of objective demands and immanent imperatives which necessitated specific responses if Africans were to survive or get ahead (Li, 2004, Mitchell, 1990 p.567).

This ‘system of demand’ became increasingly effective and beyond the control of the colonial state as capitalist relations became more entrenched. As the production of a stable flow of labour was central to the success of capitalist enterprise in colonial Zambia, producing this input was an early preoccupation for the colonial authorities. The BSAC worked very hard to produce a scarcity that Africans could only fill through cash labour, but taxation proved a clumsy tool for producing the required flow of labour. It produced uneven returns: "the labour supply constantly fluctuated, causing a glut here, a famine there" (Henderson, 1975 p.16). As populations moved to evade taxation and the reprisals for defaulting or to engage in wage labour, rural depopulation undermined the reproduction of life in rural Northern Rhodesia, fuelling political tension and challenges to British rule. The colonial authorities then sought to keep Africans in one of two political control systems: Native Authorities or European employment. This plan largely failed as the accelerated dispossession of the Native Reserves produced urban groups of deeply dissatisfied Africans on the Copperbelt who turned to strikes and rioting in order to challenge the conditions of their existence.

The BSAC – Colonial Office shift of emphases and modalities of power can also be considered in light of the relationship between different forms of power and the functioning of capitalism. Foucault regarded these disciplinary and governmental forms
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of power as central to the functioning of modern capitalism.\textsuperscript{330} This was seen in mainly two ways: its granularising individualising effects and, through working on self-regulating subjects, its efficiency. For Foucault, monarchic forms of power hindered the functioning of capitalism by being "excessively onerous" and fundamentally predatory (Foucault, 2007a p.159). He explains, "it always operated an economic subtraction and, as a consequence, far from favouring and stimulating economic flows, it was perpetually an obstacle, a break on them" (Foucault, 2007a p.159). Secondly, these forms of power were "very discontinuous… the mesh of the net was too large, an almost infinite number of things, elements, conducts and processes escaped the control of power" (Foucault, 2007a p.158). Thus modern capitalism depends on dispersed forms of power focussed on optimising the relations between 'men and things' – within a given political rationality and through techniques of discipline – for its functioning (Li, 2007). The BSAC approach is clearly reminiscent of the 'fundamentally predatory' approach of monarchic rule which disrupted and obstructed economic and socio-environmental relationships and never achieved the subtlety or balance of tensions required to stabilise both extractive capitalism and colonial rule. The Colonial Office sought more to use expertise and education to 'optimise' and balance relations in a more dispersed framework of intervention. The Colonial Office's application of new techniques of power could better reconcile the demands of liberal market capitalism and laissez-faire colonial rule in Northern Rhodesia.

However, total reconciliation was impossible. The colonial state had, both consciously and unconsciously, created an economic landscape which placed Africans at perpetual disadvantage. Through progressively alienating Africans from their environment and encouraging them to become individualistic economic actors, the unity and cohesion required for political stability was undermined. The structure produced, then, was one which oscillated between crises and new rounds of political engagement. A decade after the establishment of the Native Authorities took place, new political structures came into being that sought to lance the boil of political tension growing on the Copperbelt in a cycle that continued until independence. The increasing intensification of capitalist relations in the coming decades met with resistance undermining political stability and

\textsuperscript{330} He described disciplinary power as "one of bourgeois society's greatest inventions" (Foucault, 2003b, p.36).
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requiring the formation of new political structures and practices (Berman and Lonsdale, 1992a). Capitalism depended on the maintenance of inequality, political stability on its amelioration. The struggle between these two demands produced the political ecology of extraction on the Zambian Copperbelt.

Power, space and rule – the lessons for political ecology

The aim here has been to give an account of the development of the Northern Rhodesian Copperbelt using the tools of political ecology. The process of producing a space for natural resource extraction and export to global commodity markets has been described with a focus on two periods 1899-1907 and 1923-35 – ones that witnessed change in both the structures and patterns of rule and intensified activity of mining companies in Northern Rhodesia. Throughout these periods, contradictory and complementary dynamics of successful mineral extraction and colonial rule have been highlighted. Mining and the colonial state needed each other and this interdependence had important ramifications for both parties. Extractive capitalism and colonial rule were both produced through changing socio-ecological relations on the Copperbelt and across Northern Rhodesia. Claiming elements of nature as the domain of the colonial state and then European enterprise was central to the development of both the colonial state and the mining industry. The regimes of access to and control over resources established in this process alienated Africans from their environment and progressively dispossessed them of the natural resources upon which their livelihoods were based until they were left increasingly reliant on wage labour for European enterprises. These regimes also sped the transfer of valuable materials and surplus capital from Northern Rhodesia. This combination of alienation, dispossession and efficient extraction is at the heart of long-lasting relations of inequality in Zambia.

The overarching aim of this thesis was to detail the ways in which natural resource extraction contributes to inequality. In particular, the historical antecedents of contemporary patterns of extraction, and therefore contemporary patterns of inequality surrounding natural resource extraction, have been examined. In doing this, this research hopes, in the long run, to inform forms of natural resource extraction which promote rather than inhibit social justice and equality. In detailing these processes, this thesis has
made contributions to work on political ecology, existing accounts of the development of mining in colonial southern Africa, and work on power, rule and governmentality.

In the field of political ecology, three under-represented topics have been advanced: (1) the political ecology of extraction in Africa – there exist many political ecology studies using African cases, comparatively few of these engage with questions of mineral extraction and still less with large-scale mineral extraction. Instead, they largely examine agriculture, environmental degradation and poverty and conservation. (2) The political ecology of mining – there exist few political ecology analyses of mineral extraction, meaning its specificities are absent from attempts at wider theorisation. Attendance to the political economic and material specificities of large-scale mining as an extractive enterprise and its internal dynamics in this thesis offers a range of insights that may be of use to other studies of mineral resource extraction. (3) The historical political ecology of extraction – historical political ecology analyses are a small, though surprisingly influential, subset of political ecology research. Extraction is underrepresented here as many of these accounts engage in debunking received environmental truths or environmental history rather than unpacking historical precedents of contemporary patterns of extraction (Davis, 2009, Offen, 2004). Further, a range of theoretical concerns and contributions have been highlighted throughout this thesis, in particular a greater attention to the specificities of power and techniques of rule within political ecology. This has a number of facets. Firstly, attendance to the centrality of the production of a political space for the production of extractive economies. A range of techniques and forms of power are required to enable natural resource extraction, an argument made by Harris and Li, but not necessarily widely taken up (Harris, 2004, Li, 2007). Implicit in this is a call for greater attention to that ways in which the state and power are conceptualised – both feature commonly in political ecology research but are rarely foregrounded or explicitly theorised. Attention to the spatial patterning of different power relations and techniques, and the complexities of the state and its role in society, has deeply informed the findings of this research. The concept of space, in particular an extractive space, has also been shown to be useful in capturing the multi-faceted nature of natural resource extraction.

Many historical accounts of the development of mining in colonial southern Africa have been critically evaluated. Marxist accounts of the development of mining and
underdevelopment in Africa have been critiqued through calling attention to the often divergent interests of entrepreneurs and colonial administrators and the importance of the politics of knowledge production in the development of the Copperbelt. Traditional historical accounts of the development of the Copperbelt have been critically assessed, highlighting the importance of larger economic and political processes and imperatives and the importance of early interventions in explaining the rise of the Copperbelt. Both of these accounts have been critiqued through pointing out the importance of efforts up to 1930, and the changing dynamics and capacities of the mining industry in understanding of the rise of the Copperbelt. The political ecology approach too has brought a range of critical assessments and insights, highlighting the simultaneously discursive, social and material changes that attended the development of the Copperbelt. This approach has demonstrated the importance of changing regimes of access to and control over resources in the development of the Copperbelt and the importance of the efforts of networks of colonial science in enabling the development of the Copperbelt. Few studies outside of the mining industry press pay much attention to the prospecting operations of the 1920s, but the questions political ecology brings to this kind of research have shown the importance of this process, both politically and economically. This research has further argued that the development of colonial rule and the mining industry need to be understood as co-constitutive processes in Northern Rhodesia. The techniques of power embedded in the dispersed market and coercive tools of the state were important in shaping the activities of both the colonial authorities and the mining industry. Analysing them separately, in a country fundamentally shaped by the legacies of the colonial state and copper mining, can easily lead to flawed analyses.

Research on power, rule and governmentality has also been a potential audience for this thesis through both empirical and theoretical contributions. The thesis offers new empirical material to discussions on colonial governmentality, rule and power and space through applying these concepts in a new geographical, temporal and sectoral setting. The geographical setting has highlighted the importance of paying attention to space and the mediation of power as coercion stretched to breaking point across the Zambian bush and persuasion of the possibilities of economic advancement – relying less on proximity of colonial authorities and more on individual choice – proved more effective in achieving the aims of colonial rule. The temporal setting provided an interesting possibility to
explore Foucault's work on the genealogy of rule. While the main contribution has been empirical, an implicit critique of Foucault's genealogical separation of ‘disciplining effects’ of governmental rule from ‘extractive effects’ of sovereign rule has been offered – in Northern Rhodesia these have been simultaneous and linked (Li, 2007). The sectoral setting of natural resource extraction highlighted the importance of an understanding of power which takes in both the dynamics of rule and the dynamics of capitalism. Changing power relations were central in the formation and perpetuation of both economic and political structures in colonial Zambia. The governmentality literature has been critiqued through placing the expansive dynamics of capitalism at the heart of any understanding of changing power relations in Northern Rhodesia. While Foucault explicitly argued for this, these arguments have rarely been taken up. Further, this study has shown the necessity of differing forms of power to enable economic activity, particularly extractive economic activity. Moreover, governmentality literature has been critiqued by arguing for the importance of mediation and space to power relations – a factor particularly clear in this case study, and often sidelined or fudged. Space and power are linked, but clarity about how they are linked and how different forms of power have different spatialities is important in reining in the sweeping generalisations about power and domination implicit in some of Foucault's theorisations.

This research naturally has limitations. The first is a result of contradictions within the aims of this research. There is a tension between telling a 'big story' covering an area the size of the Iberian Peninsula over a period of 50 years, and documenting the micropolitics of resistance. The overarching story here is one of colonial domination and the advance of capital. The micropolitical story is one of awkward entanglements, shuffling progress, repeated setbacks and thwarted ambitions. Reconciling these two stories and aims is far from straightforward and has naturally resulted in lapses, omissions and contradictions. The second limitation derives from a reliance on the archival record. There are simply not the sources (or they have not been found in the course of this research) to document Africans' responses to the impositions of British rule rigorously. As such, the net has been cast wide for evidence of the ways in which Africans responded to similar impositions in adjacent countries or earlier research. This is far from ideal. These stories are often contradictory and, as Lukes reminds us, like all assessments of power and resistance, they clearly come with ideological baggage (Lukes, 2005). The response has been to
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frequently emphasise that, due to the decentralised nature of provincial colonial rule and few resources at its disposal, the application of colonial rule was highly uneven and the responses to it diverse. These limitations of data serve to ensure that all conclusions from this thesis must be tempered with a healthy dose of “epistemological modesty” (Castree, 1996 p.348).

Contemporary Zambia

So what does all this tell us about natural resource extraction and inequality in Zambia today? It would be disingenuous to argue that the patterns of inequality established in the colonial period lead smoothly to the contemporary inequality and poverty in Zambia. Important changes occurred in the intervening period, not least a process of nationalisation, ‘Zambianisation’ and, more recently, privatisation (Craig, 2000, Fraser and Lungu, 2007). James Ferguson has compellingly described how the Zambian economy both grew and fell precipitously, raising and dashing the hopes of the nation for progress and development, in the intervening half century (1999). However, striking parallels remain in the attempts by the state to regulate its activities and gain an increased share of mineral rents, the role of the mining industry in Zambia and the constrained political agency of Zambians living on the Copperbelt.

The advent of big mining and a boom in copper prices from the mid-1930s saw a great deal of prosperity brought to the Copperbelt. Mining still dominates the Copperbelt and Zambian economy today. Much of the annual 5% growth of the Zambian economy witnessed in recent years can be attributed to the growth of mining in response to price rises since 2003. The increased revenue of mining companies led to a change in regulation and the attempted imposition of a 'windfall tax' in early 2008. The negotiations surrounding this process show similarities to those around the mining law negotiations

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331 The policy of promoting Zambians to the higher echelons of mine management and government.
332 The close entwining of colonial interests and those of the mining industry was a key focus of post-independence reform in Zambia with the newly elected president Kenneth Kaunda quickly moved to assert greater government control over mining (Kaunda, 1969, Larmer, 2007). The nationalised mining company, ZCCM, came to play a key role in the post-independence regime as it provided a large proportion of foreign currency for the government’s development plans and took on more and more roles and companies in response to political demands. The long term consequences of this were compounded by decreasing commodity prices in the 1970s-90s which punished the lack of investment and decreasing productivity bringing the company to its knees by the time of privatisation in the 1990s (Fraser and Lungu, 2007).
from 1924-58. Keen to gloss over glaring contradictions in its behaviour, the Zambian state, like many others, has frequently resorted to secrecy to maintain the appearance of coherence to its actions and avoid undermining its legitimacy (Jessop, 1990). In both the colonial and contemporary period the Zambian state has engaged with mining companies mainly behind closed doors. In the 1950s, when the revised mining law was finally drafted and announced, consultation was minimal, as the bill was rushed through the legislative council (Slinn, 1979). The same happened in Zambia both before and after the revised mines act in 2008 where a bellicose populist rhetoric of 'no compromise' was espoused in public while negotiations were held in secret (Fraser, 2008, Sinyangwe and Chirwa, 2008). Key legislative discussions on reforming the mining law were held in London in the colonial period. The recent Development Agreements privatising the state-owned mining companies were explicitly agreed to be under the jurisdiction of international courts based in London (Fraser and Lungu, 2007). International norms and fora have been central in shaping the actions of both the government and mining industry on the Zambian Copperbelt.

Exercising effective control over the mining industry has remained an elusive holy grail of almost every leader in Zambia since the 1930s. The dependence of the colonial state on mineral rents for much of its foreign currency and annual budget continues to produce crises for the Zambian government. In the colonial and contemporary eras, the state has been unwilling to intervene in ways which may disrupt or endanger the fiscal flows from mining upon which it has become dependent. The contemporary Zambian state would be literally unable to function in key ways if the mining industry collapsed. Police forces on the Copperbelt regularly rely on the mining companies for diesel fuel supply and the companies are willing to use this leverage to influence government. As chronically stretched and thinly resourced as ever, the contemporary Zambian state struggles to claw back even modest royalties from the mines and politicians watch on fuming as international capital withdraws with the rapidity with which it recently entered. The perpetual weakness of state regulatory bodies, and the fact that the Zambian state has struggled to maintain control over its mining industry for long periods, have meant that it has been consistently unable to secure a large share of benefits for Zambians. The weighty presence of such a large and well-resourced industry palpably bends the thin framework of the Zambian state around it. Mines repeatedly exploit weaknesses in
regulation and state capacity and their comparative economic power to their own advantage (Simutanyi, 2008). The Zambian state struggles to engage effectively with the mining industry on behalf of its citizens, highlighting the fundamental material and inequalities within which copper mining on the Zambian Copperbelt operates.

Ferguson argues that there are many parallels between contemporary patterns of extraction in Africa and Zambia and the colonial period, particularly the increasing "disconnection of mining from national level social and political entanglements" (Ferguson, 2006 p.205). This political disconnection, where the operations of mining companies are only partially politically connected to the territories in which they operate, is clear in Zambia. While the post-independence climate allows for the resentment of Zambians regarding the perceived theft of their natural resources (particularly around the recent privatisation process) to be aired more freely than in the colonial period, their political agency is similarly highly circumscribed. Perhaps not as 'containerised' or bludgeoned by 'decentralised despotism' as before, the contemporary Copperbelt resident still struggles to affect the activities of the mining behemoth in their midst. With only the 'weapons of the weak' at their disposal, petty theft and corruption in the mining companies is rampant as disempowered Zambians exact their own forms of economic justice where state level attempts falter (Scott, 1985). Many of its visible manifestations have changed and the industry has a different structure from colonial times, but inequality remains the signal feature of natural resource extraction in contemporary Zambia.

Closing word: 'this open sore of the world'

One of my favourite questions to ask Zambians while on field research was: "would it have been better if the British had never come?" Nobody said yes. Yes, there was poverty in Zambia and the British were clearly horrible in the early days, but there was also education, reading, writing, development, hospitals, electricity, television and so on. By many indices, Africans lived in poverty when the British arrived in colonial Zambia: there was little in the way of education, literacy and life expectancy were (from what we

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333 This question was inspired by a question asked at the State, Mining and Development in Africa Conference held in Leeds in September 2007. At a plenary session, after keynote speakers had lined up to denounce the disastrous consequences of mining in Africa, the conference organiser, Ray Bush, asked the conference speakers and audience if the minerals were better left in the ground. Nobody said yes.
can tell) low and infant mortality was formidable. The actions of the British clearly cannot be entirely to blame for African poverty. There is no fundamental objection to British entry into colonial Zambia or to the enduring presence of mining. Most Zambians freely acknowledge the benefits both brought. The injustice is not so much the fact that poverty blighted Africa, but rather that so little was done to remedy it. Indeed, arguably, much was done to make it more acute and force Africans into wage labour. At the same time, so much was done to enable an improved standard of living of metropolitan consumers (through cheap inputs to production) and white miners and to enrich the mine owners. Extractive mining in colonial Zambia was based upon structural and institutionalised inequality which impoverished black Africans while enriching white Europeans. In this sense, while it is practically impossible to point to individuals who were culpable, the result is criminal.

However, the cultural legacy of colonialism is as prevalent as its economic one (Mamdani, 2005). The stain of colonial attitudes towards Africans can still be seen. Today's Africa is still seen as deficient, lacking and lagging behind on the teleological path of development (Ferguson, 2006). The same belief colours the archival record, only, in colonial times, Africans themselves – and not their institutions – were seen as deficient, lacking and undeveloped. The violence through which Africans were dehumanised formed the initial, and most contemptible, act of colonial subjugation from which all others followed. At the heart of the systemic brutality meted out on Africans in colonial period was a refusal to recognise them as equals. Their opportunities mattered less than those of Europeans. As did their suffering – often described throughout the archival record the way a farmer might contemplate the suffering of his animals: unfortunate, but of only passing concern. It did not have to be this way. Numerous – though isolated – individuals spoke out against the violence and injustice they witnessed. One missionary bemoaned the ‘get rich quick’ approach of the Copperbelt miners and the lack of engagement and interest of Europeans in the Africans amongst who they lived:

"It is quite possible for Europeans to live in the midst of these people and be unaware of their struggles and of their need, see them only as a source of labour and so profit, know only of the power of endurance which lies under the black skins" (Moore, 1948 p19-20)

Africans were reduced to an economic factor or a problem to be fixed. All of the solutions proffered were based on, and reproduced, the fundamental belief that Africans were
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somehow 'less' – lower down the ladder of humanity – than Europeans. By simply recognising Africans as equals: as worthy of respect, human treatment and even of compassion and fellowship, much violence and suffering could well have been avoided.
What if the British had arrived with a greater sense of humility and equality? Would they have honoured their agreements to pay African leaders mineral royalties from the start? Would they have recognised African's right to live lives in their territory in the manner of their choosing? Would the idea of enforced taxation have even arisen? Perhaps the earliest processes of alienation and violence would have been avoided and a different path taken. This is not a call for everybody to be nicer to each other. Rather, it is a call for a recognition of the fundamental commonality of humanity. That, though we rarely focus on it, and often go to lengths to obscure it, more unites us than divides us. Perhaps if the early Europeans in colonial Zambia had worked with a stronger sense of their fellowship with Africans than their separation – had been able to pierce the veil of racism which produced difference where it had not existed before – Africa might no longer be 'this open sore of the world'.
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