



# **Why time matters for understanding the ASM-LSM nexus in south-eastern Democratic Republic of Congo\***

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## ABSTRACT

This article highlights the importance of studying the politics of time in the copper and cobalt mining sector of south-eastern Democratic Republic of Congo, where a tense coexistence can be observed between artisanal and small-scale mining (ASM) and large-scale mining (LSM). It is argued that inequality in ASM-LSM settings not only manifests itself spatially but also temporally. Faced with an uncertain future, ASM and LSM actors do not have the same capacity to control time and plan their futures. Drawing on data from several rounds of ethnographic fieldwork in Katanga's mining areas between 2005 and 2022, the article advocates an approach which pays more attention to issues of time and temporality in places where large-scale forms of mineral extraction clash with small-scale ones.

**Keywords** – anthropology of mining, Congolese Copperbelt, temporality.

## INTRODUCTION

On 30 January 2021, on a Saturday evening shortly before midnight, a tragic accident claimed the lives of more than 30 artisanal miners or *creuseurs* in Kolwezi, the capital of the Lualaba province in the south-eastern part of the Democratic Republic of Congo. When the Musonoie river suddenly overflowed its banks, dozens of *creuseurs* working illegally in a mining concession belonging to the state company Gécamines were surprised by an enormous body of water entering their shafts. Hearing a suspicious noise around 11 pm, some of them immediately climbed to the surface, while others continued to work underground, a fatal

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decision that caused them to drown. Local media attributed the overflow of the Musonoie river to the opening of a discharge valve of the Kabongo Lake by the copper mining company *Compagnie Minière de Musonoie* (COMMUS), a partnership between the Chinese mining company Zijin Mining and Gécamines.<sup>1</sup>

The city of Kolwezi, where the abovementioned incident took place, is known for its long history of copper and cobalt mining. It was hastily constructed during the 1930s at the demand of the Belgian colonial mining company *Union Minière du Haut-Katanga* (UMHK) without any form of urban planning. Today, built on top of rich mineral deposits, Kolwezi finds itself completely surrounded by industrial mining operations ‘gnawing away’ at the city’s boundaries (Geenen 2020). At the same time, artisanal mining constitutes an important source of livelihood for thousands of city-dwellers trying to make ends meet in a context of chronic political and socio-economic instability. It is estimated that approximately 60% of households in south-eastern DRC depend on artisanal mining for their income (either directly or indirectly), and that the artisanal mining sector offers employment to about 150,000 people in the region (Calvao *et al.* 2021: 6).

Throughout the Congolese part of the Central African Copperbelt, there is a great lack of areas earmarked for artisanal mining activities, where *creuseurs* can work legally. This pushes people to work in places where they are not allowed to, such as mining concessions belonging to industrial mining companies or even their own neighbourhoods. Despite a ban by the provincial ministry of mines of the Lualaba province on the establishment of mineral depots in residential areas, the phenomenon has continued to exist. Moreover, according to civil society activists in Kolwezi, the industrial guard of Gécamines, responsible for protecting the state company’s mining facilities against intrusions and mineral thefts, has continued to turn a blind eye to the presence of artisanal miners on company property.

The accident with the drowned *creuseurs* in Kolwezi offers a poignant illustration of the unequal power relationship between large-scale mining (LSM) and artisanal and small-scale mining (ASM) in south-eastern DRC. What immediately catches the attention is how this inequality manifests itself spatially. Since the mid-2000s, the region has witnessed a re-emergence of industrial mining, with private companies taking over more and more large-scale mining sites and proceeding to the gradual eviction and exclusion of artisanal miners, whose access to mineral resources has become increasingly complicated. Companies such as COMMUS have acquired property rights over the largest and best pieces of mineral-bearing land, forcing *creuseurs* to work in a clandestine manner or to content themselves with digging for ores in less ore-rich areas.

Still, issues of time and temporality also play a very significant role in the asymmetric power relationship between LSM and ASM. A closer look at the accident with the artisanal miners in Kolwezi reveals, first of all, the value of paying attention to cyclicality. Since the beginning of 2021, one of the most hotly debated topics in business circles is the imminence of a so-called ‘commodity super-cycle’, a period in which supply is so inadequate to meet the demand growth that prices continue to rise for several years. In a research note titled ‘Copper is the new oil’, released on 13 April 2021, analysts of the American

multinational investment bank Goldman Sachs have underlined the critical importance of copper for ensuring the transition from fossil fuels to sustainable energy and achieving the Paris climate goals.<sup>2</sup> In China, the world's biggest copper importer, the demand for copper has gone up remarkably after the country has started to recover from the COVID-19 pandemic. While this is in large part due to an ambitious programme of the Chinese government to stimulate the building of bridges, roads, utilities, railways and broadband within China itself, it also has to do with the pivotal role of Chinese companies in the production of hardware and technology for the global market in alternative energy systems, which are said to be five times more copper-intensive than their conventional counterparts.<sup>3</sup> Given the forecasts about an imminent commodity super-cycle, it is not surprising that the competition over copper between a Chinese-run industrial mining project such as COMMUS and local artisanal miners has intensified in recent times.

A second time-related point is the issue of seasonality. Both industrial and artisanal mining actors tend to adapt their activities to the changing of the seasons and the according shift in weather conditions. D'Angelo & Pijpers (2018) have remarked that many mining companies working in tropical areas have the habit of piling up material during the dry season while reserving the rainy season for processing activities. During the period of the rains, access to the mines and mining pits tends to become too costly. In the artisanal mining sector, the level of digging activities is much higher in the dry season because the risk of incurring a fatal accident is very real during the period of heavy rains. Many participants in the artisanal mining sector in south-eastern DRC tend to combine their mining and mining-related activities with other livelihood-generating activities such as farming, the production of charcoal and petty trading, amongst other things. This combination of different types of livelihoods, which are resorted to at different times in the year, can be seen as an indication of the persistence of what Evans-Pritchard (1949) referred to as 'ecological time' – an organisation of time based on people's adaptation to their physical environment. Already during pre-colonial times, artisanal mining used to be a typical dry season activity in south-eastern DRC. A copper mining campaign usually took place in mid-May after the harvesting of the sorghum crop (De Hemptinne 1926: 381). That being said, it is quite striking that the accident with the drowned *creuseurs* in Kolwezi took place at the end of January, in the middle of the rainy season, when chances that the Musonoie river would overflow its banks were much greater. It seems plausible that the decision of the artisanal miners to ignore the flooding risk may have been due to their lack of alternatives. People working in the sector are often prevented from finding other, more sustainable sources of revenue as a result of being heavily indebted to the sponsors of their activities, the inescapability of predatory collaboration schemes with corrupt officials, and the poor levels of payment in other sectors of the economy (Perks 2011).

A third time-related element that deserves further scrutiny is the issue of rhythms. It is not a coincidence that the drowning accident in Kolwezi took

place shortly before midnight. The *creuseurs* operating in the Gécamines mining concession were forced to stick to a night-time working rhythm because of the clandestine nature of their activities and the fear of getting caught. Meanwhile, a company such as COMMUS was able to continue its operations day and night, discharging its waste water according to its own planning. The production rhythm of this industrial mining company followed what Kesseling has described as an ‘extractive pace’, ‘driven by shareholders, traders, rates of profit and investment and commodity prices’ (2018: 238).

In sum, the preceding account suggests that a thorough understanding of the dynamics of conflict between LSM and ASM in south-eastern DRC can only be achieved if one does not only take into account the spatial dimension, but also the temporal one. The coexistence of LSM and ASM gives rise to much temporal uncertainty, both for artisanal miners and for different groups of actors in the industrial mining industry. Very often, artisanal miners are living and working in areas earmarked for large-scale mining projects, where they permanently face the risk of being physically and/or economically displaced. For their part, people employed in large-scale mining projects are confronted with the volatility of commodity prices, changing mining policies of host governments, shifting trends in the international mining industry, unexpected events in the political economy, and various security and reputational risks, amongst other things. Given that actors on both sides of the equation are faced with temporal uncertainty, develop their own strategies of dealing with this, and have their own ways of experiencing, using, organising and giving meaning to time, the question arises how these competing ‘mining temporalities’ (D’Angelo & Pijpers 2018) mutually influence and shape each other. It also raises the question who ultimately controls time in these settings.

This article argues that, until now, issues of time and temporality at the ASM-LSM interface have remained largely overlooked in academic literature. It will be shown that (1) the existing social-scientific literature about the interaction between ASM and LSM has been dominated by spatialised thinking, and (2) that, in the available literature about the time-related aspects of mining, the temporalities of LSM and ASM have been analysed separately, without paying attention to their interrelationships and without scrutinising the relationship between time and power. The article advocates an approach that pays more attention to issues of time and temporality in places where large-scale forms of mineral extraction clash with small-scale ones. The aim is to move beyond considering time as a socio-cultural construction and to shift the analytical focus to time as ‘an instrument of power with very real effects’ (Harms 2013: 346). It is argued that inequality in ASM-LSM settings does not only manifest itself spatially, but also temporally. Faced with an uncertain future, ASM and LSM actors fight with unequal arms. They do not have the same capacity to control time and plan their futures. The article draws on empirical material gathered in the course of several rounds of ethnographic fieldwork in the mining areas of south-eastern DRC between 2005 and 2022.

A BRIEF HISTORY OF THE ANTAGONISM BETWEEN ASM AND  
LSM IN SOUTH-EASTERN DRC

Katanga enjoys the reputation of being potentially one of the richest mining areas in the world. The Belgian colonial geologist Jules Cornet, who explored Katanga as a member of the Bia-Francqui expedition between 8 August and 12 September 1892, was so impressed by the region's mineral wealth that he reportedly called it a 'geological scandal' (Lekime 1992: 19–25). Apart from copper and cobalt, the Katangese subsoil boasts a wide range of other minerals, including zinc, silver, uranium, lead and germanium. Between 1906 and 1967, the industrial mining of copper and cobalt was the monopoly of the Belgian company *Union Minière du Haut-Katanga* (UMHK), which introduced a policy of corporate paternalism, offering accommodation, education, health-care and food rations to employees and their families. After Congolese independence, UMHK's successor Gécamines continued this policy, while also remaining one of the biggest copper and cobalt producers in the world (Rubbers 2013).

From the second half of the 1970s onwards, however, Katanga's industrial mining industry gradually fell into decline as a result of a series of developments in the global economy and political instability at the regional, national and provincial levels. Faced with pressure from the World Bank and the IMF, the government of Prime Minister Kengo wa Dondo embarked on a process of carefully privatising the Congolese mining sector in the mid-1990s. The agreements concluded in the course of this privatisation process made it possible to restart individual branches of Gécamines, not only in terms of exploration and the processing of tailings, but also production itself (Kennes 2000: 311–12).

After the end of the second Congolese war (1998–2003), the World Bank wanted to harness Congo's mineral resources for the country's economic recovery. Aiming to boost foreign investment, it pushed the Congolese government to further liberalise the mining sector, to create a more transparent mining registry and to launch a new mining code. Meanwhile, global demand for copper rose due to a combination of increased consumer spending and expanding infrastructure in countries such as India and China, while the global demand for cobalt went up due to the worldwide increase in chemical applications such as catalysts and rechargeable batteries (Global Witness 2006).

The revival of industrial mining in Katanga coincided with the emergence and growth of artisanal mining in the region. At the end of the 1990s, the Congolese President Laurent-Désiré Kabila threw the impoverished Katangese population a lifeline by opening up the unused mining concessions of Gécamines to *creuseurs*. Tens of thousands of men, women and children left their homes in the hope of being able to secure a livelihood through mining and/or mining-related activities, digging for copper and cobalt ores with shovels, pickaxes and other rudimentary tools (Makori 2019).

The competition between industrial and artisanal mining actors for access to mineral-bearing land in Katanga has grown increasingly tense and antagonistic

due to the spectacular rise in cobalt prices on the international market since 2017–2018. Driving this cobalt boom is the growing demand for rechargeable batteries as part of the so-called ‘green revolution’ or the search for more environmentally friendly and sustainable sources of energy. Cobalt is a key ingredient in lithium-ion batteries, which can be found in electric vehicles and various electronic devices such as smartphones and laptops. In 2018, Congo supplied more than 60% of the global mined cobalt production, with most of these minerals going to China, the most prominent player in the global cobalt industry (Cuvelier 2020).

#### SPATIAL PERSPECTIVES ON MINING

In academic scholarship, the coexistence of LSM and ASM has been analysed mainly in spatial terms, as a phenomenon giving rise to territorial disputes between large-scale and small-scale mining operators. According to Hönke (2009), transnational mining corporations have started experimenting with new ways to manage the security risks associated with their extractive activities. Instead of only investing in the territorial control and protection of their production sites, as their predecessors used to do during colonial times, transnational mining corporations nowadays combine ‘the fortress-like protection of narrow pockets of production with selective development interventions in the vicinity of the mine to transform them into a kind of protection belt’ (Hönke 2009: 4). Defending a slightly different line of argument, a number of mining anthropologists have taken issue with the portrayal of ‘extractive enclaves’ as spaces that are completely shut off from the outside world, securitised and administered outside the framework of the nation-state, and intimately connected to transnational capitalist networks. They have emphasised, instead, the political, social and cultural embeddedness of large-scale mining projects as well as the porosity of enclave boundaries (Luning & Pijpers 2017; Rubbers 2019).

Aside from the abovementioned body of scholarship about the creation of ‘protection belts’ and ‘extractive enclaves’, scholars studying the ASM-LSM interface from a spatial perspective have also found an important source of inspiration in theoretical work about the ‘frontier’. A first strand in the literature draws inspiration from Kopytoff’s (1987) classic work on the pre-colonial internal African ‘frontier’. Werthmann (2012) has identified two gold mining frontiers in Burkina Faso: on the one hand, an artisanal mining frontier that came into being in the Western part of the country during a drought in the 1980s, and, on the other hand, an industrial mining frontier that emerged as a result of changes in the country’s mining code in 2003. For their part, Côte & Korf (2018) have used Kopytoff’s theoretical insights to shed light on how mining concessions come into being and what the regulatory dynamics in and around the concessions look like.

A second body of literature using a ‘frontier’ perspective to look at the ASM-LSM interface has taken its cue from the ‘commodity frontier’, a concept coined by Moore (2000) to study the dynamics of global capitalist expansion.

Verbrugge & Geenen (2019) have argued that the global gold mining industry has tried to overcome a wide range of socio-ecological and socio-political limitations by expanding into new mining destinations ('widening'), but also by intensifying appropriation of ecological surplus through various social and technological innovations ('deepening'). Declercq (2019), while not explicitly mentioning artisanal mining, has used Moore's work on the 'commodity frontier' to gain a deeper understanding of the so-called 'red fever', a period of rapid global expansion of copper production between 1890 and 1939 caused by the large-scale application of electrification.

In the field of development studies, several scholars have examined how industrial mining companies and host governments have practically dealt with the unwanted presence of artisanal miners in their concessions. Hilson and colleagues (2007), for instance, have discussed the 2005 Prestea Action Plan, a poorly conceived and ultimately failed attempt of the Ghanaian government to transfer artisanal miners from a large-scale gold mining concession belonging to a US-based multinational to other, pre-identified areas. In a study of the interaction between the Canadian transnational mining corporation Banro and large groups of artisanal miners in the Twangiza gold mining concession in Eastern DRC, Geenen (2014) has described how the company organised consultations, offered professional training, and encouraged artisanal miners to switch to alternative income-generating strategies, all in the hope of being able to peacefully remove them from their property.

In sum, the spatial perspective on the coexistence of LSM and ASM has several merits. It has drawn attention to the fact that the attitudes of large-scale mining corporations towards artisanal and small-scale miners are to a large extent shaped by territorial considerations and, more specifically, by the ambition to protect their legal rights to mineral-bearing land. Furthermore, it has also encouraged mining scholars to put together a conceptual toolbox for making sense of how mining spaces are organised and governed, and how the spatial expansion and contraction of mining operations has provoked the emergence of new political, social and cultural formations in and around the sites of extraction. Nevertheless, there are also important downsides to the dominance of the spatial approach. Most importantly, it has led to an underestimation of the factor time. In what follows, I will first present an overview of how issues of time and temporality have been approached in the existing social-scientific mining literature. In a next step, I will identify an important research gap, which I intend to address in the present article.

#### TEMPORAL PERSPECTIVES ON MINING

A first group of scholars has examined the social and cultural significance of mining landscapes. Contributors to a volume edited by Rumsey & Weiner (2004) about the effects of industrial mining on indigenous life-worlds in Australia and Papua New Guinea have looked at how indigenous people come to grips with the changes in their environment by drawing on,

refashioning and reinterpreting their cosmological knowledge of landscapes. Halvaksz (2008) has highlighted local people's creative engagement with a physically transformed landscape in Papua New Guinea's Morobe province. Apart from serving as a mnemonic that evokes social history and memories of the past, the landscape in Morobe has certain aesthetic qualities that make people dream of the perpetuation of gold mining in the future. Wheeler's (2014) work about a former iron mining area in Cumbria, UK, has shown that industrial remains in the landscape do not only act as prompts for personal and social memories of the mining past, but equally play a crucial role in the formation of place-based identities.

A second body of scholarship about temporality in large-scale mining contexts has examined how and to what extent people's attitudes and expectations vis-à-vis mining are shaped by earlier historical experiences with mineral extraction. Pijpers (2016) has presented a fine-grained analysis of how different groups of inhabitants of the Marampa Chiefdom of Sierra Leone's Northern Province perceived and experienced the reopening of an iron mine in 2006, after three decades of closure. For his part, Kneas (2018) has examined the evolution of social identities associated with resource extraction in the 'aftermath' of an aborted copper mining project in Northwestern Ecuador. Makori has dedicated his doctoral research in the Congolese part of the Central African Copperbelt to an in-depth exploration of 'the warps and wefts, succession and overlaps between the precolonial, colonial and postcolonial eras as each of these continue to inform the present' (Makori 2019: 13). A final example is Askland's (2018) study about the negative effects of a growing coal mining industry near Wollar, a small village in Australia's Mid-Western Region of New South Wales, where people experience a sense of temporal rupture or 'broken time' due to the brutal interruption of the continuity between past, present and future.

A third body of literature concerning temporality in large-scale mining contexts deals with the relationship between time and power. In the opinion of these authors, there is need for more scholarly attention to the ways in which dominant mining actors try to define and impose a single temporal regime upon the people living in or near their areas of operation, but also for how the latter develop counter-strategies (D'Angelo & Pijpers 2018). Kesselring (2018) has provided a very clear example of how a transnational mining corporation forces people living in or near its areas of operation to adapt to the corporation's temporal logics by looking at the construction of a road by the Canadian company First Quantum Minerals (FQM) in Zambia's North-Western Province. The strategic use of time and temporal frames in the industrial mining industry has also been very well illustrated by Luning's (2012) research about a Canadian junior exploration company and its interactions with local communities in Burkina Faso.

In the social science literature about artisanal and small-scale mining, most scholarly work has been focused on the relationship between, on the one hand, the way artisanal miners experience and organise time, and, on the



other hand, their consumption practices. Several anthropologists have presented case studies of how artisanal miners develop a hedonistic lifestyle marked by conspicuous consumption and lavish spending on consumer goods such as alcohol, cigarettes, clothes and drugs (e.g. De Boeck 2001; Walsh 2003). Recently, a number of scholars have nuanced the dominant portrayal of artisanal miners as wasteful fortune-seekers. The research of Engwicht (2018) in Sierra Leone and Smith (2011) in the eastern part of the Democratic Republic of Congo shows that artisanal miners are not only driven by the hope for a better future for themselves in the form of upward social mobility, but also by the realisation that their stay in the mining environment will help them build social capital for their future endeavours.

From the preceding account, it is clear that the study of time and temporality in mining contexts is not a virgin field of study. Scholars investigating the temporal dimensions of large-scale mining have produced useful insights about the ways in which ordinary people creatively engage with landscapes marked by mining activities, how in LSM environments past, present and future experiences with large-scale mining tend to fold together, and how industrial mining actors as well as those with whom they interact strategically use time and temporal frames to stand their ground in the face of uncertainty. In the literature about the temporal dimensions of ASM, a lot of scholarly attention has been paid to the relationship between time and conspicuous consumption, but also to artisanal mining as a future-oriented undertaking. That being said, an important gap in the abovementioned literature is that the mining temporalities associated with LSM and ASM have been analysed separately from each other. There is still a lack of understanding of how both sets of temporalities mutually influence and shape each other, and how time plays a role in the dynamics of domination and resistance at the ASM-LSM interface. In what follows, I will make a modest attempt to fill these gaps in the literature by taking a closer analytical look at the politics of time in ASM-LSM settings in south-eastern DRC.

#### TOWARDS A BETTER UNDERSTANDING OF THE POLITICS OF TIME IN ASM-LSM ENVIRONMENTS

##### *Multiple temporalities in a mining context: evidence from the TFM concession*

In 2009, Freeport McMoran Copper and Gold, an American mining company based in Phoenix, Arizona, placed a 20-minute promotional video on its website to highlight its activities in the Congolese Copperbelt. Freeport had just started the Tenke Fungurume Mining (TFM) project, a large-scale programme for the exploitation of copper and cobalt in partnership with Canada's Lundin Mining Corporation and the Congolese state mining company Gécamines. The video starts with a white engineer standing in a dimly lit underground tunnel and wearing a fluorescent vest and a white helmet. Tapping against a green-coloured rock wall with a hammer, he mumbles approvingly: 'This is very good copper mineralisation'. Behind him a fellow black colleague nods in agreement. The

next part of the video shows a fast succession of images. First the spectator sees an idyllic Katangese savanna landscape, then an excavator crane moving a large amount of earth in the light of a rising sun, stock traders on a busy western trading floor, and finally a Katangese town buzzing with the activities of women selling vegetables, children playing football and young people driving motorcycles. The footage is accompanied by a Hollywood-esque commentary voice: 'These are minerals formed in the earth's distant past, in a land that was a cradle of civilisation, minerals providing a shining future, metals for a global economy, an investment in the future of the Democratic Republic of Congo'.

Freeport's promotional video nicely illustrates – albeit unintentionally – one of the key arguments of Anna Tsing's book about the global trade in matsutake mushrooms, namely the need to pay closer attention to the coexistence of multiple temporalities. 'Progress is a forward march', she writes, 'drawing other kinds of time into its rhythms. Without that driving beat, we might notice other temporal patterns' (Tsing 2015: 21). The interplay of multiple temporalities is comparable, in Tsing's opinion, to polyphonic music, characterised by the intertwining of several autonomous melodies. Her plea for a polyphonic approach to time tallies very well with my interest in the coexistence of multiple temporalities in ASM-LSM environments.

Ethnographic evidence of the interplay between the dominant temporality imposed by TFM and other temporalities in and around its industrial mining concession can be found in the life history of Laurent Kabongo,<sup>4</sup> one of my research participants. Having grown up in the rural town of Lwambo, situated 55 kilometres southeast of Fungurume, Laurent started working for TFM in 2008. His decision to look for employment at TFM resulted from nostalgic ideas about the benefits of formal employment, a set of conceptions dating back to colonial times. Thanks to Laurent's job at TFM, his family's standard of living improved remarkably within a relatively short period of time. His entire household moved with him to Fungurume, where they acquired a big compound in the Mwela Mpande neighbourhood.

Laurent's views on how to make a living were strongly influenced by his upbringing. His father, a Jehovah's witness since his early twenties, spent his life working as a petty trader and training his children to manage their money wisely through a diversification of their sources of income. Hence, already during his days in Lwambo, Laurent combined his job as a secondary school teacher with activities in the fields of farming and artisanal mining. The vegetables grown by Laurent were sold by his wife Carine, both at the local market in Lwambo and at the vegetable market of Kenya, one of the sub-municipalities of Lubumbashi, the capital of the former Katanga province. Inspired by his father's entrepreneurial spirit, Laurent sometimes called on contract workers to perform some of the work on the land, while he also had the habit of stocking a certain amount of maize every year with the aim of selling it again when maize meal became scarce on the market.

Laurent was also involved in artisanal mining. Thanks to his family ties with the customary land chief or *chef de terre*, he was able to obtain a mine pit in the Nimura copper mine, situated within walking distance from the centre of Lwambo. Especially during the dry season, when there was less work on the land, Laurent did his best to earn some extra money as a *creuseur*, which he could then use to hire contract workers and to buy fertilisers.

After the move to Fungurume, Laurent remained closely involved in the affairs of his hometown, where he even managed to become the new land chief (*mulopwe*) after the death of the previous one. Travelling back and forth between his residence in Fungurume and a rented house in Lwambo, he enjoyed being addressed as *mulopwe* and always wore certain symbols of customary authority in public, even during his working hours as an employee of TFM. In addition to constituting an important source of prestige, Laurent's position as a new land chief gave him access to revenues from customary taxes.

When I last saw Laurent in August 2019, he was working at TFM's Acid Processing Plant. By that time, the takeover of Freeport's shares by the Chinese company CMOC was causing a great deal of unrest. Rumours were circulating about an upcoming termination of contracts and Laurent complained that the interaction between executives and subordinates was completely different from when the Americans were still in charge. Apparently, the new management attached much more importance to hierarchy and discipline than their predecessors. On 29 March 2020, Laurent posted several photos of himself on Facebook, sitting next to some of his fellow employees and looking visibly annoyed with the company's harsh lockdown measures during the Covid-19 pandemic. Between 24 March and 24 May 2020, CMOC placed the TFM mine in complete isolation, ordering essential staff to stay on site and to avoid any contact with the outside world. Ironically, a month before the start of the period of forced isolation, on 20 February 2020, Laurent had posted a picture of himself in TFM outfit with the self-chosen slogan: 'Work ensures independence'.

The story of Laurent Kabongo highlights the complexity of the politics of time in the copper and cobalt mining areas of south-eastern DRC. On the one hand, the time orientations of the inhabitants of the TFM mining concession have been strongly shaped by the dominant temporality of the industrial mining company. People like Kabongo have been organising their lives on the basis of TFM's promises of stable formal employment and fast economic development. They have learned to adapt to the many contingencies and the sometimes brutally imposed work rhythms associated with industrial mineral extraction. On the other hand, however, they have also tried to keep a certain degree of control over their time. As far as his work at TFM allowed him, Kabongo did his best to keep his livelihood portfolio as diversified as possible. He organised his free time in such a way that he was able to meet the demands of the work on the land and in the artisanal copper mine of Nimura, while also trying to respect the obligations associated with his position as land chief in Lwambo. Underneath the apparent dominance of the melody of industrial mining (to

borrow Tsing's polyphony metaphor), there is thus a wide range of other, less audible melodies that deserve to be listened to. The next section will explore this interplay between the temporalities associated with ASM and LSM in more detail.

*The speed of industrial mineral extraction versus the slowness of artisanal mining*

On 16 July 2016, on a Sunday afternoon in the middle of Katanga's dry season, my research collaborator Santa and I decided to interrupt our car trip for a short break near an almost empty mineral warehouse situated along the road from the Kawama mine to the city of Kolwezi. When we got out of the car, we noticed a small group of approximately 10 artisanal miners dancing to the music of a small portable radio and sharing a few bottles of whisky. The *creuseurs* were clearly enjoying themselves and I couldn't help smiling when reading the words 'cocaine & caviar' on the t-shirt of one of them, a remarkably apt, sarcastic comment on the precarious condition these young men found themselves in. The diggers realised that the artisanal mining business was not going so well at the time, but they seemed to have collectively agreed they would remain in good spirits despite everything. When we asked them why so many of their colleagues had recently moved to other mines, they told us that a series of serious mining accidents had led to their departure. 'The spirit has exaggerated', they said. 'In the beginning, it was only claiming 30 victims, but in the end almost 130 people died.'

As can be gathered from this ethnographic vignette, Katangese artisanal miners are strongly focused on the present. They often say they are living according to the 'daily rate' (*taux du jour*), a money-changer expression intended to capture the idea of living from day to day (Cuvelier 2017). With their remarkable temporal orientation to the present, *creuseurs* have many things in common with various marginalised groups across the globe who – according to the contributors to a volume edited by Day and colleagues – use their commitment to live 'in the here and now' as a strategy of resistance against mainstream society. Through activities such as drinking, gambling and immediate consumption, they try to regain a sense of personal autonomy in contexts of exclusion, impoverishment and oppression (Day *et al.* 1999).

That being said, despite *creuseurs'* cultivation of a hedonistic lifestyle, it would be exaggerating to suggest that they only 'live in the present, with little thought for the future and little interest in the past' (Day *et al.* 1999: 2). One of the main reasons why the partying youngsters in the ethnographic vignette attributed the large number of mining accidents in the Kolwezi area to the grudges of a local mining spirit was that, in their opinion, 'the land belongs to the ancestors' (*bulongo ni ya bankambo*). From that perspective, it is very important to keep certain mining-related traditions and rituals alive. In many parts of Sub-Saharan Africa, artisanal miners continue to show great respect for all sorts of local gods and spirits, making sure to comply with the wide variety of rules, restrictions and taboos imposed by them (Coyle 2020).

In Katanga, ideas about the dangers of failing to respect traditional taboos associated with natural resource extraction have existed for a very long time. In the *Vocabulary of the Town of Elisabethville*, a fascinating piece of popular history written by André Yav and discovered by Bruce Fetter during his PhD research about the colonial history of Lubumbashi in the 1960s, a remarkable story can be found about an encounter between a French engineer and a peculiar creature called *mpumina*. The meeting between the two is said to have taken place during the construction of a hydroelectric power dam at Mwadingusha in the late 1920s:

Then he (the engineer) told Mpumina: You must get away here from Mwadingusha, go to Lupweji, we want to catch the current and send it to our factories. (Mpumina) told him: I cannot leave this place. I am tired of moving around. Listen, I was first in Kalukuluku, you made me move. I went to Kipushi, you made me move. I went to the mountain of Panda, you made me move. Then I went to the mountain of Kako(n)twe, you made me move. Now I am here at Mwadingusha and again (I am told) that I cannot (stay) and should move. But I cannot move from here. *If you want me to move again from here you have to bring ten thousand white men and 10 (thousand?) of your wives and your children. Right now I am tired of being offered black people without a reason.* (Fabian 1990: 111–13, my emphasis)

The historical context of this story is that, between 1927 and 1930, the colonial contractor Trabeka was hired by Sogéfor to carry out hydroelectric development works at the Cornet Falls in Mwadingusha, including the construction of a large concrete dam. The aim of the project was to produce electricity for the refining activities of the *Union Minière du Haut-Katanga* in its Panda facilities near Likasi (Espion & Provost 2021: 532). According to popular belief in south-eastern DRC, *mpumina* is a fat-tailed snake, moving extremely slowly and living inside mountain caves. The snake is rumoured to be dangerous, destroying all plants it finds on its way and using its breath to kill everyone it meets. Among the Luba in northern Katanga, *mpumina* is believed to be a water snake with the reputation of triggering earthquakes. It belongs to the category of the territorial spirits, which have the reputation of being very hostile to any human attempt to domesticate their space. The Luba conclude pacts with their territorial spirits, whereby the latter offer their blessings (i.e. natural resources such as minerals or salt) in exchange for the death of a human being. The person who dies becomes a mediator between the spirits and the living (Petit 2000: 156–7).

The *mpumina* story says a lot about how Katangese citizens in the 1960s – the period in which Yav's book was written – perceived and interpreted the history of their region (see also Rubbers 2009). One of the most striking elements in the story is that the spirit demands an immediate end to the European capitalist conquest and the rapid industrialisation of the Katangese interior. If one still wants to continue with it at the same scorching pace, so the warning goes, then a heavy price will have to be paid for it in the form of human sacrifices. Remarkably, it is further specified that the victims will have to be whites, because there have already been too many innocent victims among the

indigenous African population (Fabian 1990: 210). The story about *mpumina* reads as a sharp critique of the complete disrespect of the Belgian colonial establishment for indigenous ways of maintaining ecological balance. It conveys the message that the fast-spreading dominance of industrial mining since colonial times has profoundly disrupted local ecosystems, which used to be controlled by the spirit world. The failure of industrial mining companies such as the UMHK to respect transcendent time and to comply with the taboos imposed by local spirits like *mpumina* is seen as one of the principal causes of the rising number of human casualties in Katanga's mines.

Today, many inhabitants of the Katangese Copperbelt continue to believe that spirits regulate people's access to natural resources, with land chiefs acting as intermediaries between the spirit and the human world. The population of Katanga accuses industrial mining companies of disrespecting the spiritual control over Katanga's mineral wealth in their haste to make quick profits. Meanwhile, artisanal miners have the reputation of being much more respectful vis-à-vis indigenous mining traditions and doing everything they can to obtain spiritual protection against various forms of misfortune during their mining endeavours. Since they are believed to be on better terms with the ancestors and to cause less harm to the environment than their industrial counterparts, they are also spared from the curse (*lusanzo*) that land chiefs sometimes pronounce against companies suspected of violating the interests of indigenous communities.

In sum, the preceding account has highlighted the long-existing tension in Katanga between, on the one hand, the speed of industrial mineral extraction, and, on the other hand, the relative slowness of artisanal mining. Industrial mining has become associated with the large-scale and intensive exploitation of mineral resources at a blistering pace, causing massive changes in society and local ecosystems. Meanwhile, ASM has been characterised by a different approach to time. Despite cultivating a lifestyle in which living for the moment is highly valued and encouraged as a strategy of resistance, Katangese artisanal miners have been at great pains to live in accordance with a temporal regime which they imagine to have been characteristic of natural resource extraction in ancestral times.

### *Preparing for the future: the Mutoshi experiment*

While the previous sections analysed the positions of ASM and LSM actors in Katanga's mining industry vis-à-vis the past and the present, this section will shed some light on how both groups of actors position themselves in relation to the future. A good way of doing this is by taking a closer look at the so-called Mutoshi Cobalt Pilot Project, which ran from January 2018 until March 2020. Working in partnership with Congolese state authorities, the American NGO Pact and the private companies Kumi and Trafigura, the industrial mining company Chemaf gave a group of approximately 5000 artisanal miners formal permission to work on a designated area of its Mutoshi mining concession near Kolwezi ('Mutoshi Cobalt') on the condition that the latter

would sell all their cobalt ores at the Chemaf buying station. The project was primarily designed as a test case for investigating how the formalisation of ASM might lead to a more ‘responsible’ form of artisanal cobalt extraction (Johansson de Silva *et al.* 2019).

In a video released on 16 October 2018 and intended to present the Mutoshi Cobalt Pilot Project to international business partners and observers of the Congolese mining industry, James Nicholson, Trafigura’s head of Corporate Social Responsibility, expressed his confidence in the development potential of the project in the following manner:

What we’re doing here is a pilot, it’s going to take time, we have so many challenges ahead, but, working with the partners that we do, we believe that fundamentally we can make a positive change, we can actually improve the lives of the people we are working with and move them to a place, work with them to get to that place in such a way that ultimately their families, their broader communities, can benefit from the minerals that are actually extracted.

The video message delivered by Nicholson is a clear example of forecasts intended to create what Beckert (2013) calls ‘fictional expectations’. Trafigura’s head of Corporate Social Responsibility wanted to project a credible image of the future state of the mining sector in south-eastern DRC with the aim of convincing international investors, buyers and consumers of Congolese cobalt that things were moving in the right direction. The intended message was that the mining of copper and cobalt would henceforth take place in a formal, regulated and transparent manner and that there was good hope that ASM and LSM could now coexist peacefully. The other partners in the Mutoshi Cobalt Pilot Project shared Nicholson’s optimism about the future relationship between ASM and LSM in the region. In a special brochure about the project that was published on its website in November 2019, the American NGO Pact stated that the results from the experiment in Mutoshi would be of great value to facilitate ASM-LSM partnerships elsewhere in the region, in accordance with the so-called ‘cohabitation strategy’ promoted by the World Bank (for a critical analysis of this policy see Hilson *et al.* 2020).

For the artisanal miners participating in the experiment, however, the future was not as bright as one would think on the basis of the forecasts mentioned above. In December 2020, Trafigura decided to pull the plug on the artisanal mining project in Mutoshi, which it had been running with Chemaf and Pact for almost two years. The decision to end the project was due to the fact that Chemaf would start focusing on the development of an industrial mine at Mutoshi. It is expected that the industrial mine will start producing by the third quarter of 2023. In a press statement released on 18 January 2022, Shalina Resources Limited, the parent company of Chemaf, announced that it had secured a US\$600 million financing and marketing transaction with Trafigura, which would enable the ‘completion of the fully mechanised Mutoshi mine and SX-EW processing plant in Kolwezi and the expansion of the Etoile SX-EW processing plant in Lubumbashi’.<sup>5</sup>

While at the time of writing artisanal miners are still allowed to continue working on a very small part of the concession, it is likely that very soon they will be asked to leave for good. How do they prepare for the future in such uncertain conditions? In the Mutoshi area, there are roughly two ways of organising the sale of mineral ores. On the one hand, some *creuseurs* have the habit of selling small quantities of minerals on a daily basis to a local buying house or *maison*, through the intervention of an intermediary buyer or *négociant*. On the other hand, there are those who prefer to wait to sell until they have dug up a substantial amount of minerals, which they can then send off with a truck to a local *maison* directly, without having to pass through an intermediary buyer.

The advantage of the first *modus operandi* is that diggers see their money quickly. They are paid almost immediately for their minerals and in principle do not have to go into debt to make ends meet during the production process. With the second *modus operandi*, *creuseurs* have to wait longer for their money and they usually need either a considerable starting capital of their own or external sponsors to cover their equipment and food costs during the production process. Moreover, at the level of the *maison*, it often happens that several big trucks of minerals arrive simultaneously, making the process of testing of the quality of the minerals very complicated and time-consuming. The major advantage of the second way of working, though, is that the returns are much higher. This is because the commodity chain is shorter than with the first *modus operandi*, with fewer actors seeking to get their piece of the pie.

The second *modus operandi* is called *kufanya maquis*, a Swahili phrase that can be translated literally as ‘to do a bush’. The expression became really popular during the Mobutu era when rebels fighting the Kinshasa regime retreated to desolate places to prepare for their coup d’état. The fact that Kabila’s troops actually managed to overthrow a long-time dictator, after having spent several years in the bush, gave strength to popularly held ideas about the value of self-discipline and thorough preparation with a view to achieving personally defined goals (Cuvelier 2017). Today, *creuseurs* are using the expression *kufanya maquis* to describe a calculated run-up to a more ambitious and satisfying life project. By adopting an attitude of frugality and denying themselves the opportunity to be paid out on a daily basis, they hope to be able to save enough money to make a major move, such as leaving the mining sector to become a trader or a taxi driver. *Kufanya maquis* can be seen as a Foucauldian technology of the self in that *creuseurs* are actively trying to regulate their own behaviour. They impose a particular discipline on themselves in the hope that it will enable them to move ahead in life, to map out a future for themselves according to their own needs and desires, instead of allowing that future to be dictated by more powerful actors such as representatives of Congolese state institutions or industrial mining corporations such as Chemaf.

Of course, further research is needed to investigate the exact impact of Chemaf and Trafigura’s changed plans on the way artisanal miners in the



area organise their operations and manage their money. What is indisputable, however, is that ASM and LSM actors do not have equal access to the future. As Baas *et al.* (2020: 136) have argued, ‘an analysis of the future should always include the structures of power and inequality that constantly inform the opportunities and strategies that people make use of while moving towards their futures’.

#### CONCLUSIONS

The aim of this article was to explain the importance of studying the politics of time in the mining sector of south-eastern DRC, where a tense relationship can be observed between large-scale and small-scale mining operators. In the first part of the article, I have shown that the existing body of scholarship about the ASM-LSM nexus has been dominated by spatialised thinking, while the available literature about time-related aspects of mining has been characterised by a lack of interest in the coexistence of multiple mining temporalities and a neglect of the relationship between time and power in areas where ASM and LSM coexist. In order to fill this gap in the literature, I have used the second part of the article to present an in-depth analysis of the interplay between ASM and LSM temporalities in Katanga, drawing on ethnographic data from my own fieldwork in the region.

My analysis has confirmed that time is an important object of power and site of struggle. I have shown that the temporalities associated with industrial mining in Katanga strive for hegemony. Large-scale mining companies such as COMMUS, TFM and Chemaf are actively seeking to impose their ways of structuring/organising time and to uphold the dominance of their ‘extractive pace’ in the environment in which they are operating (Kesseler 2018). In spite of the presence of such ‘hegemonic temporalities’ (Iparraguirre 2016), however, there are also other, alternative temporalities, including temporalities associated with artisanal mining. My research has suggested that many people living and working in/near mining concessions, despite being confronted with corporate attempts to colonise and control their time, retain a considerable degree of temporal agency, leading their lives in ways that are temporally very complex and diverse.

A second general finding from my analysis concerns the emergence of certain hidden forms of resistance (Scott 1990) against the ‘hegemonic temporalities’ mentioned above. As Fent & Kojola (2020) have noted, history is filled with attempts to spread and normalise temporalities that facilitate capital accumulation and corporate control over land, resources and people. At the same time, however, these efforts to promote and impose the hegemony of capitalist temporalities have also given rise to the emergence of counterhegemonies and a wide variety of alternative temporalities. I have shown that the counterhegemonic temporalities among artisanal miners in Katanga are characterised by, on the one hand, a tendency to live ‘in the here and now’ and to cultivate a hedonistic lifestyle, and, on the other hand, a propensity to condemn the destructive

speed of industrial mineral extraction by invoking the need to respect indigenous mining traditions.

Third and finally, my research has also revealed that ASM and LSM actors in Katanga differ in their ways of dealing with the future. Whereas industrial mining companies enjoy the luxury of being able to draw on a broad repertoire of instruments to convince their investors and shareholders with ‘fictional expectations’, *creuseurs* find themselves in a much more precarious position. As Cassiman and colleagues (2022: 2) have pointed out in an essay about precarity in Sub-Saharan Africa, ‘the temporal horizons within which people live under these conditions are limited, and by the same token, they are supremely flexible and open to change since no long-term cumulative future presents itself’. One of the striking things about *creuseurs*’ ways of future-making is that they make efforts to stretch their temporal horizons. The practice of *kufanya maquis*, which I discussed in my analysis of the Mutoshi experiment, is a form of what Morosanu & Ringel (2016) have called ‘time-tricking’, an active attempt on the part of the members of a marginalised and oppressed group to structure their own time and to retain a sense of temporal agency under conditions of scarcity and constraint.

COMPETING INTERESTS. The author declares none.

#### NOTES

1. Lualaba: des creuseurs clandestins engloutis par les eaux dans la concession Gécamines’, 4 February 2021, <magazinelaguardia.info>, accessed 13 April 2021.
2. ‘Copper is the new oil: demand for the metal expected to soar this decade’, Business Standard, 17 April 2021 (source: <business-standard.com>, accessed 10 May 2021).
3. ‘Chinese firms position for an energy transition copper supercycle’, 5 April 2021, <blog.bakerinstitute.org>, accessed 10 May 2021.
4. In order to protect the privacy of my research participants, I use pseudonyms.
5. Press release, <shalinaresources.com>, accessed 23 September 2022.

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