Mining Collapse: Life and Labour on the Cerro Rico de Potosí

by

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Abstract

This dissertation analyzes the relationship between small-scale miners (called cooperatives) and a transnational mining company (Manquiri) as they work alongside one another in the nearly 500-year-old mines in Potosí, Bolivia. I argue that traditional small-scale miners are undergoing a process of dispossession as the metabolic relationships required by the capitalocene continue to accelerate on the mountain. As miners struggle to maintain autonomy from capital over their workspaces and lifeworlds, the historic mountain, their means of subsistence and so much more, is crumbling around them. I interrogate claims against the sector as the one responsible for the mountain’s demise, and demonstrate that, in the context of ecological collapse, small-scale cooperative miners’ resistance to being subsumed by predatory capitalist relations of production, sheds light on the kinds of post-capitalist ecological labour we need.
Acknowledgements

This dissertation is the product of many years of work and reflection that began long before my official enrollment and there are many people to whom I owe my gratitude. Early on during my years in Cochabamba I had the pleasure of getting to know Don Augusto Leon Ayma, an underground miner from Llallagua who authored a memoir about his experiences during the widespread layoffs at the State-run company in 1985, along with other short novels about mine life in the camp. His work, largely unedited, is remarkable in its detail. With Vladimir Díaz we spent many afternoons with Augusto and his wife Hortencia recording his life history. Those afternoons in Cochabamba were fundamental in spurring my interest in the privatization of the mines in Bolivia, but specifically the experience of cooperative miners during that period, since Augusto was one of the few miners who had experience from the cooperative sector to the unionized workforce. I am so grateful for his political orientation about the broader systems of exploitation, and the time and energy he and Hortensia invested in our intellectual development. If it weren’t for his encouragement, I likely never would have embarked on this journey.

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Chapter 1: Introduction

1.1 The Cerro Rico de Potosí atop the Imperial City

Depending on your vantage point, the landscape and appearance of the Cerro Rico de Potosí Mountain changes. Sitting atop the Andean Mountain range in Southern Bolivia, the “Rich Mountain” and its iconic shape is known across the world. From afar, its shape and colour remain closest to early chroniclers’ descriptions: hues of red, purple, and brown colour it, darkening as your gaze ascends to the summit; conic in shape; standing in stark contrast to the surrounding mountain ranges. Even on the most somber and cloudiest of days from the neighbouring mountain and colonial mines of Porco, it looks as though it were lit up by the sun: it glows orange like the warm light of wax candles.

This perspective changes as you approach its now built-up flanks. From Potosí’s city centre at an epic 4,090 m above mean sea level, the mountain frames the Plaza Principal 10 de Noviembre, towering over the three-story balconied colonial residences and the republican era municipal and departmental administrative offices. Its form peers suspiciously over the towers of the colonial Franciscan convent, San Francisco, and faces the Cathedral head-on. Alongside the cathedral, the tall green doors of the Casa de la Moneda open wide to a large inner plaza with the iconic and mysterious smiling face that greets visitors. Once the colonial Royal Mint, this is where the ore that was famously extracted from the mountain and subsequently refined at one of the water and horse powered mills in the city was weighed, stamped, and processed for export to Spain. Having commenced colonial production in 1545, by the end of Spanish rule, the mines of
the Cerro Rico and the mills in Potosí produced enough silver, in the figurative words of Uruguayan journalist and novelist Eduardo Galeano, to “build a bridge all the way to Sevilla.” Potosí’s importance for the emergence of a world capitalist market is irrefutable and residents and miners of the city remind you of that fact often. The mines provided the currency required at a critical moment to facilitate the flow of goods that marked “the creation of a world commodity market, the most important change in the history of mankind since the metallurgical revolution” (Mandel 1968, 106). Potosí, its mines, and its markets, were renowned the world over with the name even making its way into common discourse. Potosí became synonymous with wealth through the catchphrase “vale un Potosí” (Bakewell 2009, Deusta 2000).

Over the past five centuries, the city has expanded and contracted so fast and so haphazardly alongside the rhythms of silver production that neighbourhoods formed atop and around the mines and mill infrastructure, something that continues to this day. By only 1610, the city had exploded to more than 160,000 and it was larger than London, Sevilla, and Venice (Bakewell 2009, 191, Kamen 1971, 21). In 1987, UNESCO declared Potosí and the mines of the Cerro Rico as having “unique universal value” for world heritage.¹ According to the website: “Potosí is the example par excellence of a major silver mine of the modern era, reputed to be the world’s largest industrial complex in the

¹ The three criterion that apply to Potosí as a world heritage site are: “ii) to exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning or landscape design”; “iv) to be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history”; and “vi) to be directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance.”
16th century[...] The major colonial-era supplier of silver for Spain, Potosí was directly and tangibly associated with the massive import of precious metals to Seville, which precipitated a flood of Spanish currency and resulted in globally significant economic changes” (UNESCO 2022).

Illustration 1: The Cerro Rico de Potosí captured from the roof of the San Francisco Convent. Photo taken by the author.

The colonization of Sumac Orko and the surrounding communities by the Spanish was as much a story of violence and dispossession as it was of opulence and glory. Cerro Potosci² or Sumaj Orcko had been determined by the Incas as claimed by, and reserved

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² In Quechua, cerro translates as mountain, and potosci roughly translates as a sound akin to loud thunder rumbling from belly of the earth. It is believed that the mountain was called that due to the warnings it issued to Indigenous peasants who attempted to extract silver for the Incan empire prior to Spanish Conquest. The ground rumbled around the mountain, reminding people of its power and thereby preserving its silver for the sun. A similar scenario is described to depict another mountain in nearby Tarapaca. (Bouysse-Cassagne, 2008).
for, the sun. It was an important wak’a and one of the original sources of the “tears of the sun” by Huayna Capac (Bouysse-Cassagne 2008, 320-321). Gold and silver were key to political and cosmological power at the time of conquest, and according to Cruz and Absi (2007, 2008), the Spaniards had to dismantle its powers prior to commencing production, tellingly renaming it Cerro Rico. Silver was extracted from the mountain by mitayos\(^3\) and yanaconas, and mining wreaked havoc on Indigenous communities living within its shadows. Over 13,000 mitayos were summoned annually to work in the mines of the mountain (Bethell 1984, 419), while more still were sent from across Alto Peru to provide food for city dwellers, to work in construction and infrastructure development (the famous irrigation system was built with mit’a labour), to transport mineral out and mercury in, among other tasks (Brown, 2012, Klein 1982, Mumford 2012). The mountain literally altered the surrounding composition and landscape of communities nearby, exemplifying the primitive accumulation upon which capitalism was built (Sempat Assadourian 1980). As Marx notes in Volume 1: “The discovery of gold and silver in America, the extirpation, enslavement, and entombment in mines of the indigenous populations…are all things which characterize the dawn of the era of capitalist accumulation. These idyllic proceedings are the chief moment of primitive accumulation” (1990, 915). It also meant ecological destruction, since, as historian Nicholas Robbins (2011) notes, disease and conquest were interlinked, and not separate from the mining activities that went on in Potosí, and neighbouring Huancavelica, the major source of mercury for American silver refining. When the Spanish finally left in 1825, it was estimated that eight million Indigenous people died, directly, or indirectly, to produce 60,000 tons of silver for foreign markets (Brown 2012).

Although renowned for its at once opulent and tragic colonial history, many would be shocked to know that these same mines have continued under a near constant state of production to this day. Small-scale miners, today organized into what are legally referred

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\(^3\) Mitayos were Indigenous labourers who were forced to take part in the revamped Spanish m’ita, which continued an Incan governance practice wherein all able-bodied men of a given community had to pay tribute to the state for a defined period per month in the mines (Bakewell 2008, Mumford 2012).
to as cooperatives, have been working on the Cerro Rico de Potosí since colonial times. First organized as *k’ajchas*, they would sneak into the mines on weekends to work them and appropriate the fruits for themselves (Absi 2005b, Barragan 2017a, Flores Castro 2019). Then, throughout the silver and then tin production following independence they continued to work on mines alongside large-scale industrial production (Barragan 2017b). Today they represent the bulk of the mine labour force on the mountain. The miners, some Indigenous peasants, and others, descendants from previous generations of miners or other artisan trades, work underground in dangerously precarious circumstances to extract polymetallic ore (Ag/Zn/Sn/Pb). Every day, somewhere between 6,000 and 20,000 miners make their way into one of the nearly 200 active mines on the mountain, roughly 13% of the city’s total population (for a more detailed look at the economic importance of the mining sector for Potosí’s economy see Ferrufino et. al 2008).

This dissertation broadly analyzes the metabolic relationships between small-scale miners’ labour and the environment upon which they depend for their subsistence, the surface and subterranean mineral deposits of the mines on the Cerro Rico de Potosí Mountain in Bolivia. As I will demonstrate throughout this dissertation, through their labour, these Andean miners and their families have historically maintained a relationship to the minerals they mine and the nonhuman deities who govern them, that was not purely extractive, putting them in a unique position for navigating questions of labour and the geophysical world. But, in less than a generation, miners have experienced their trade,
their rituals, their communities, and their mountain, crumbling around them. What had happened in such a short period of time to turn their lifeworld’s upside down?

1.2 Accelerated Metabolisms

The multiple centuries of silver, tin and silver-again extraction demonstrate that capitalism cannot only turn environments into sacrificial landscapes, but its consequences can be considered a geological force that impacts the entire planet. The Cerro Rico, the origin of the silver that thrust the world into unified global currency and the subsequent globalization of capitalist markets was so significant that it didn’t only forever alter global markets, but it also contributed to ushering in a new era wherein capitalist metabolic forces have the capacity to alter geological time, the capitalocene (Haraway 2015, Moore 2015). The mining activities in Potosí are indisputably connected to global capitalist markets and have been for hundreds of years. But miners working on the mountain were experiencing and expressing significant changes in the rhythms of these markets and their work, and, in merely a generation.

In his exciting new work, The Three Deaths of Cerro de San Pedro, Daviken Studnicki-Gizbert (2022) traces changes in the metabolic rhythms of capitalist mineral extraction at the colonial mine of San Pedro in Mexico. He impressively demonstrates how over four centuries, changes in capital and developments in technology accelerated the flow of matter and energy moving through the extractive systems of the deposits of the mine, reviving profitability over and over again. What’s missing in histories (and I would argue, anthropologies) of mineral extraction, he argues, is a “view that carries us across the arcs of boom and bust,” to break free of conventional conceptions of mineral
economics. Like San Pedro, over its nearly 500-year history the Cerro Rico was written off as having its minerals depleted on multiple occasions, only to be revived again by important shifts in capital and labour relations and with evermore important impacts on the surrounding environment. Just like the archway that opens the mountain up to residents and the world in Pailaviri, this dissertation also probes the shifting and differing metabolisms—those guiding cooperative and transnational extractive practices—present at certain points during its long extractive history as they manifest themselves simultaneously on the mountain.

Similarly, geographer Martín Arboleda (2021) notes that the metabolism of capitalism to increase the organic composition of capital, thereby replacing living labour with machines, reached new heights in the 21st century. As a result, he says we are witnessing a historical stage in labour’s struggle against capital. Grounding his analysis in the fully automated, highly technologically advanced open-pit mega mines in Chile, the post-labour moment he paints is as horrific as the waste these mega-machines leave behind. This sensation that the mining industry is in a post labour moment is also echoed by anthropologist Jessica Smith Rolston (2014) who says, reflecting on the open-pit coal operations in Appalachia, “across the country and the globe miners are statistically more likely to operate multimillion dollar equipment in the open air than swing a pickaxe in a tunnel but the dominant stereotype is difficult to dislodge (56).” Their claims echo a trend in anthropological and social science literature, one that identifies the current moment as a “post-labour” moment because of the relative intensification and mechanization of the labour process in resource extraction (see also Murray and Peetz 2010, Mitchell 2011).
And yet, just like in Potosí, the last two decades have seen an unprecedented increase in demand for minerals and metals of all kinds fueled, primarily by industrial productive consumption in Asia. This period of global economic acceleration marked by the “China boom” (Hung 2015) has meant mineral prices reached never seen heights. In Bolivia, at the same time the country’s biggest, most expensive, and most technologically advanced mines entered production (San Cristóbal, San Bartolomé, San Vicente) the number of cooperative miners simultaneously exploded (Díaz Cuellar 2017). In 2021, there were nearly 136,000 miners affiliated to cooperatives, a number which had increased 27 times since 1970, and doubled since 2008.\(^4\) That number represents 88% of the total mine worker labour force in the country (Viceministerio de Cooperativas Mineras 2021, 11). According to the World Bank (2019), those explosive trends are also observed globally: as of 2019, 40 million people worked in the ASM sector, a figure which quadrupled in just 20 years. Rather than (or as well as) chugging towards a post-labour future, high metal and mineral prices have meant an expansion of the industry for all producers, small to large.\(^5\)

But the experiences of small-scale producers alongside large-scale producers demonstrate that there are qualitative and quantitative differences between cooperatives’ extraction rhythms and techniques, and those of the transnational mining company. As this

\(^4\) This number does not include day/labourers or segundas manos (see Chapter 1).
\(^5\) It is also important to not forget that even with increased automation in some sectors, there is always labour involved in building those machines, keeping them maintained, running their robotics, etc. Just because labour may slip out of view from the immediate production process, doesn’t mean it no longer exists.
dissertation demonstrates, it is not just the large-scale highly capitalized transnational mining operations which are accelerating, but small-scale miners are also facing those pressures. And so, if the acceleration of capitalist metabolism in Potosí means a “rise in throughput compensated for the progressive decline in ore grades, as well as the deepening challenges associated with extraction and processing. Speeding up, scaling up, intensifying: each revival enabled profits to be harvested, once more, from a non-renewable resource” (Studinski 2022, 2), it is not experienced the same way at the labour site. At the small-scale mines in the Cerro Rico de Potosí, this acceleration has been experienced viscerally in the way work is both performed and organized and has led to workers experiencing eventual displacement, while their source of sustenance, the mountain, crumbles, around them.

1.3 Labour Ontologies

The problem of course with only thinking about cooperative labour as an emergency escape valve in times of crisis is that it implies that it is work that is temporary. Subsistence labour also implies unskilled labour: people can just join in at any point and pick up the work. And yet, cooperative miners in Potosí frequently talk of a sort of gravitational pull that the mountain and the work exert over them: no matter how hard they try, they always end up back at the mines in Potosí. This pull cannot be understood simply by economic necessity, since, as we will see throughout this dissertation, miners are returning from jobs that are otherwise waged and stable. If indeed cooperative mine labour may absorb labour at key moments in time (Absi 2005b, Absi 2010, Francescone 2015, Widerkehr 1970), miners’ decisions to stay in that work expresses something quite
different. Just like the Cerro Rico is a symbol of what it means to be Potosíno, being a skilled miner capable of prospecting mines, identifying veins, and successfully manipulating one’s tools are considered essential for defining what it means to be a “miner” among small-scale miners in Potosí. Being a “miner” in Potosí also means maintaining its k’ajcha essence. Much like the catadores (refuge pickers) on the Jardim Gramacho dump that anthropologist Kathleen Millar describes (2018), mine work and the relationships miners forge while mining are enjoyable and are often preferred, even to more formal waged-work positions—this is significant in that a decision to return to the mine contains fodder for challenging Western understandings of precarity and formal work (Millar 2014).

But miners in Potosí also hold a unique relationship to the physical environment. Mastery of the trade includes maintaining a not-purely extractive relationship to the minerals they mine. Successive works in Andean ethnography (Absi 2005b, Nash 1979, Salazar-Soler 2002) suggest that at least historically, miners maintained a unique metabolic relationship with the minerals they mine by engaging in ritual practices and providing offerings to the pachamama (the earth mother) and Tío (uncle, devil protector of the mines) as a way of increasing their mine fertility but also protecting themselves from potential harm. Underpinning this tributary relationship of sorts was the understanding, due to the centrality of metals in the reproduction of life cycles, that mining as an extractive activity required deliberate acts of replenishment (Gose 2018). Their ritual obligations formed part of a “circular relationship between the worker and their role in the rituals; the organization of the cult depends on the organization of the relations of production which
in turn legitimizes the labour relationships” (Absi 2005b, 185). For Nash (1979), ritual practices surrounding the cult of the Tío serve to reinforce the solidarity of the working group, and then subsequently more broadly across the sector as a class. Mine work, and one’s relationship to the earth beings with whom one shares a reciprocal relationship through that labour, formed the foundation of that unique relationship to the land.

And yet, both Absi and Salazar (1996) noted that this unique ritual relationship started to change parallel to the process of neoliberal rationalization at the mines they studied in the nineties. Despite the centrality of Tíos in iconography about miners in the Cerro Rico, by the time I arrived in Potosí in 2016, miners appeared to have all-but-abandoned those practices which had been so central for their lifeworlds, expressing instead, a sense of disenchantment and dispossession.

Historically speaking, anthropology and sociology have documented how conflicts between workforces and their bosses often reveal structural processes of struggles around control over the labour process (Buroway 1979, Braverman 1996, Warner and Low 1948). Cooperative miners lament a loss of skill with changes in the production process, but rather than facing one boss at a factory they are confronting international metal market rhythms and metabolic pulses of capitalist accumulation from the outside. Their complex and battled pursuit of veins is simultaneously a pursuit of relational and relative autonomy (Millar 2018), to remain outside of the domain of total economic subsumption. And yet, it isn’t only about autonomy from capital, but also autonomy to be able to repair and regenerate their relationship to the Tío and the mountain, again mine labour and their
lifeworld’s ritual and labour practices are uniquely interwoven. At the heart of this dissertation then is the argument that recovering that relationship to the land and their labour is what makes miner’s resistance to capital so important for the postcapitalist labour futures that we so desperately need.

1.4 The Material Debris of the Ghosts of Industries Past

The entrance to the Pailaviri section of the mountain is also the main entrance onto the Cerro Rico, situated at 4,150m. Originally, the large archway marked the entrance to the state-owned Empresa Minera Compañía Unificada de Potosí (EMCUP). Now, its rusted-out sign indexes something much more profound. After three hundred years of silver production at the end of the nineteenth century the mines at the Cerro Rico de Potosí, at this time managed by Bolivian capitalists with ties to foreign investment, shifted their primary production to tin, but not before experimenting with new technological and industrialization techniques which were financed with the support of international loans and partnerships (Mitre 1981, 90-104). By the early twentieth century tin production on the mountain was consolidated in the hands of these private-National capitals. The Pailaviri mill and flotation plant—whence this section of the mountain got its name—and the Velarde foundry were considered state-of-the-art facilities at the time, representing symbols of Bolivia’s industrial revolution (Absi and Pavez 2015, Serrano Bravo 2009). During Bolivia’s transition to tin mining, Potosí figured importantly as one of the most important producers of tin metal early on due to relatively easy access to biofuels (yareta

6 Throughout this introduction I will refer to the Unificada subsidiary as the EMCUP but it is important to note that the mines, which were eventually taken over by the COMIBOL, changed hands and names on multiple occasions. I am simplifying this much more complicated corporate map for reader coherency.
and other Andean cacti), major transportation routes, and the fact that they could benefit from silver as a by-product of tin refining from tailings and superficial deposits that had already been worked by colonial activities (Mitre 1993b, 29-34). But, by the beginning of the twentieth century the advantages from which private capital had benefited butted up against environmental limits, modern rail caused prices to crash, and the Velarde foundry was converted into producing concentrates, a less refined product in the commodity chain (Ibid). Despite this, the EMCUP and the other producing mines on the mountain, continued to retain importance for Bolivia’s overall tin production. Thanks to two world wars, tin prices soared and in 1948, Bolivia was responsible for 25% of world tin production, 78% of which was produced by three Bolivian businessmen with ties to foreign capital: the famous “Tin Barons,” Patiño, Hoschild and Aramayo (Ruiz Gonzalez 1980). In the popular Nationalist novel “Metal del Diablo” from 1946, Augusto Céspedes made widely available what many who lived and worked in these mines already knew⁷: the extravagant wealth of these three magnates was being produced off the extreme exploitation of the mine worker and peasant labour (Albarracín Milllán, 2008). In 1952, the mines and installations on the Cerro Rico, along with the other large tin operations across the country, faced armed expropriation by the Nationalist Movimiento Nacional Revolucionario (MNR) with the Bolivian Federation of Mine Workers (FSTMB) at the helm. After the nationalist revolution the EMCUP became incorporated as a subsidiary under the newly formed state-owned Corporación Minera de Bolivia (COMIBOL) and the mills continued to produce, instead sending concentrates to the Vinto foundry in

⁷ Bolivian sociologist Luis Antezana (1986) notes that Bolivian literature, due to limits within the social sciences, always played a role that was quasi-anthropological or sociological in that it privileged the perspective of social actors and got at the heart of popular sentiment.
Huanuni, Oruro. As part of the Nationalization and motivated by the miners’ movement’s understanding of their underdevelopment as linked to Bolivia being a primary resource exporting country, COMIBOL took over the entire tin commodity chain, including its smelting and commercialization. Pailaviri continued to send milled mineral to Velarde for processing via gondola and both operations underwent various modifications to increase mill capacity. As the tin deposits started to wane against a cooling tin market, miners within the company began pressuring it to shift operations back to silver as technological developments made low-grade deposits feasible again, but much to their disappointment, these “diversification projects” never consolidated (FSTMB 1991).

Illustration 2: The entrance to the Pailaviri sector of the mountain, which is also the main entrance to four of the five regions of the mountain, 2017. Photo taken by the author.

Now, walking along the EMCUP rail system in the morning in Pailaviri while attempting to navigate the buses speeding to offload their passengers, you won’t hear the bouncing
“tak-tak” of the gondolas carrying concentrate overhead. Instead, you are constantly startled by the sharp “clap” or dull “thud” of pieces of Pailaviri’s corrugated roofs whenever they’re lifted by wind gusts. In 1985, as the world tin market crashed around Bolivia, the government implemented a series of neoliberal reforms backed by the World Bank to “solve the economic crisis” (Villalobos 1989). Ironically or tragically, depending on who you speak to in Bolivia, the same government party (MNR) which had expropriated private-capital investment across the country was now the one responsible for setting into motion a series of neoliberal policies that would gut the COMIBOL and its mines (Gill 2000). President Paz Estenssoro’s New Economic Policy, through a package of Supreme Decrees, the most famous being D.S. 21060, ordered the restructuring and selling-off of state enterprises and assets, including the COMIBOL, and eliminated the government’s monopoly on smelting and commercialization. It also reduced the government’s territorial control over mineral deposits by reducing the “fiscal reserve” and modified the mining code and tax regime, all with the aim of opening up the country to foreign investment (See Díaz Cuellar 2010, Ramos Sanchez 1986, Vega Lopez 1991). As a result, the EMCUP’s operations slowed to a near halt with the majority of the nearly 2,000 workers being fired in what was referred to by the unions at the time as the “paper massacre,” adding to the over 20,000 jobs already lost across the company (Ayma 2010) and many more across the public sector in general (Gill 2000, Ramos Sanchez 1986). While the ashes of the torched EMCUP were still smoldering, the newly restructured COMIBOL with the help of World Bank consultants, commenced a process to develop a “new” project for foreign investment which would include the whole mountain, and not just a select number of mines, using a combination of open-pit and
underground mining methods. Towards accomplishing this end, on November 9, 1987, the government approved Law #957 which declared the prospecting and exploration of polymetallics on and around the Cerro Rico de Potosí a “national priority.” In 2008, following years of exploration, the Empresa Minera Manquiri, operated by transnational mining company, Coeur Mines, commenced full open-pit industrial production, processing and refining the silver deposits of the “San Bartolomé” project on the mountain. Their operations and commercialization activities buying up cooperative production continue to this day.

One early morning in 2016, I sat tossing jokes back and forth with two miners at their mine on the Cerro Chico (see Illustration 5). From Cerro Chico you had a bird’s eye view of the Pailaviri mill in all its oxidizing glory. Looking out over the ruins, Omar noted “someone should film a good zombie movie here,” since, according to him because of the amount of lives the industry had claimed over the years, it was “already haunted with real ghosts.” “Imagine this place at night,” he exclaimed excitedly, “between the dogs and the ghosts, we could really make a scary movie. And [actors] dressing up as miners in COMIBOL uniforms and chasing people with drills would really add effect.” At the time we all laughed heartily but as I walked past the mill later that afternoon, I kept thinking about the prospect of COMIBOL zombies patrolling the mines at nights adding “effect” to the real ghosts, the miners who had died in the mines over the years. The decaying industrial remnants of Bolivia’s industrial and then Nationalist revolution being left to

8 The full package for the selling off of the supposedly profitable assets of the COMIBOL for tender as designed by the UNDP was called Bol/87/012, and in 1992, the World Bank financed the first extensive study of the by then quartered off projects for the company under project number: B0-92018.
weather in the harsh elements of the Cerro Rico de Potosí were not just part of the landscape that miners were forced to confront, but they were sedimented into people’s ruminations (Stoler 2013, 10) of a past which continued to haunt and shape the future. In the ruins but also the in ongoing mining operations across the mountain lies the haunting realization that the train in pursuit of economic progress which continues to extract minerals from the Cerro Rico de Potosí could run off the rails and return to economic and ecological ruin. It seemed at the time that the question on everyone’s mind was haunted in some way by these ghosts: what would come first in the eventual economic ruin? The total collapse of the mountain, or the emptying of its reserves?

Illustration 3: The Pailaviri mill as seen from Cerro Chico, surrounded by active mines, with the EMCUP entrance gates, below. Photo taken by the Author
For all this, the Cerro Rico de Potosí is a symbol of strife and dignity for the people of Potosí (Flores Castro 2011). The mountain is present on the Bolivian National Coat of Arms and the Bolivian flag. Its image was present on local monies throughout its colonial history, and it remained there well into the twentieth century. Photos of it adorn shopkeepers’ windows in the city, it is the image on the label of the beer Potosino, it forms the backdrop of logos for soccer jerseys; and residents of the city constantly refer to it in daily conversation. In all its overbearing glory and tragedy (Abercrombie 2016, 89), the mountain and its legacy of silver define what it means to be Potosino (Absi 2005a).

And yet, in August 2021, the final portion of the summit of the Cerro Rico de Potosí collapsed in a dramatic cloud of mineralized dust before the horrified gaze of the city’s residents. Filmed by several residents who were terrified by what appeared to be billowing white smoke above the city, the mountain’s collapse had residents emotionally disparaging public authorities for having failed to protect the city’s heritage site from the ongoing mining activities. By the time the summit collapsed, the Comite Civico Potosinista (COMCIPO) was reporting the existence of 114 cave-ins and 12 massive cave-ins zones around the mountain, four of which had happened in 2021 alone (El Potosí 2022). Throughout my years in Potosí the mountain’s ongoing collapse developed painfully like a dramatic soap opera. Despite everyone’s perceived concerns about the structural integrity of the symbol of “Potosino dignity,” the past continued to chase the future: what would the city do without the mountain? As residents scrambled to find someone to blame, they almost always landed on the cooperative miners. An article
published in the Guardian 10 years before the summit’s collapse, but just before
UNESCO declared the site “in danger” contained the headline: “Bolivia’s silver
mountain loses its lustre as report warns of risk of collapse.” In it the author attributes the
blame to the cooperative sector:

Behind him followed five foreign tourists, here to see an anachronism in the 21st
century, medieval mining in the Rich Mountain of Potosí. This cone-shaped peak
is at any given moment home to as many as 16,000 shirtless miners, straining in
dark caverns with picks, shovels, their own brute strength but little else (Ferrero
2012).

This understanding of the causes of the mountain’s collapse is ubiquitous both in Potosí
and internationally. Small-scale “primitive” miners in Potosí are irrationally picking
away at the mountain, resulting in its collapse. Similarly, an academic article published in
the Bolivian journal “Mining and the Environment” characterised the situation as
follows: “the extraction methods of the last decades are more and more captured by
cooperative smallholdings without any technical orientation. This has generated a notable
increase in the “instability of the mountain” (Mata Zamora y Serrano, 2019).”

Cooperative miners, using the “medieval” tools of their ancestors and without any
technical orientation are held responsible for the mountain’s ruin.

1.5 From Informal to Popular Economies

Once afoot, the Cerro Rico loses its emblematic colours. If it appeared more red, orange
and purple from the city’s plaza, up close it is overwhelmed by patches of grey, slate,
white, and brown. Here too the mountain itself often slips out of view, hiding behind
mountains of tailings and overburden, which, after nearly a half millennium of
exploitation, have accumulated and become mini hills protruding out of the
mountainside. From the drop-off point at Pailaviri dozens of roads suddenly appear, cutting through the surface like wrinkles on an aged face, some deep, others shallow, but all moving from the bottom of the mountain to the top, cutting across first its flanks, and then its body, horizontally. It is here that you start to experience the scale of importance of the mining economy which moves the city down below, as almost immediately you are struck with the realization that you are surrounded by operating mines. Dozens of them are literally within a short walk of the bus stop but each mine entrance, called an adit in English or bocamina in Potosí, is partially hidden by its individual loading bays, referred to as “buzones.” All throughout the day in Pailaviri it is common to see miners at work. Since part of minework involves moving minerals out of the mine for subsequent transport to the mills, people can, and often do, walk right up to a bocamina and look inside.⁹

For development institutions and scholars, cooperative miners in Bolivia are referred to as belonging to the Artisanal and Small-Scale Mining (ASM) category, a category which highlights both the sector’s apparent “informality” and underdeveloped nature but that ultimately serves as a social security net of sorts by absorbing employment. The World Bank (2013) succinctly sums up this characterization: “the informal nature and on the whole un-mechanized operation generally results in low productivity, the sector represents an important livelihood and income source for the poverty affected local population. It ensures the existence for millions of families in rural areas of developing

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⁹ This is in stark contrast to Manquiri’s transnational mining operations, which are actively patrolled and guarded by company security.
countries.” Despite having legal title to the concessions that they work; cooperatives are still referred to along these lines.

As the neoliberal New Economic Policy was forcibly implemented in Bolivia, the government commenced a dual process. On the one hand, it began handing its profitable mines to the private sector, and on the other, it doled out its “unprofitable ones” to thousands of the 30,000 displaced former state employees (Gill, 1997; Jordan and Warhurst, 1992). In the 1990s, foreign think tanks and international development organizations began taking an interest in small-scale mining in Latin America (see for example, McMahon et al. 1999, Evia and Molino 1997), which they characterized as informal and illegal. As Bolivian economists Juan Antonio Morales and Luis Evia (1995) explained at the time, the turn to the widespread renting of concessions to the cooperative sector should proceed with caution, and should be a temporary solution. They warned that if this policy continued to be pursued in the long-term, cooperative miners would negatively affect the potential for foreign investment. Foreign investment, as the story went, was equipped with the know-how and capital required for developing these saviour mines. And, this wasn’t specific to Bolivia. The entire continent was being slammed with neoliberal mining reforms with the hopes to attract FDI. And, both Studnicki-Gizbert (2022) and Elizabeth Ferry (2008) demonstrate that small-scale miners at two similar colonial mines in Mexico were dispossessed upon the appearance of transnational capital. Cooperative miners weren’t the only “informal” economy actors being analyzed in the region at the time (Hart 1973). As rural migrants flooded capital cities and neoliberal restructuring attacked the public sector, forcing thousands into joblessness (which in the
case of Bolivia had been the country’s most important single employer (Ramos Sanchez 1986)), “informality” grew. These informal economic actors were cataloged as a backwards threat to progress and development, and a risk for foreign investment. But as much as they represented a risk to foreign capital and the urban middle mestizo class, as Buechler and Buechler (1992) and Hernando de Soto (1986) demonstrate, highland merchants in La Paz and Lima were particularly adept at taking over the sidewalks and streets of the cities and found fulfillment in the relative autonomy that these spaces provided (see also Goldstein 2018). Similarly, cooperative miners continued to take over deposits and work them, eventually forcing the government to recognize their rights to the concessions since they were working them (Francescone 2015). As Pascale Absi (2005b) demonstrates in her seminal work on cooperative miners in Potosí, “today’s cooperative miners have inherited the ancient practices of kajcheo where workers who worked for colonial mine owners would take over the mines on the weekends to work for themselves...the notion of kajcheo translates for miners into the idea of free worker... who…in working the mine, has the right to appropriate the fruits of their labour.” (17).

Even though their skilled labour was necessary to sustain colonial and republican production (they were after all those who actually knew the mines and the veins) k’ajchas were vilified by their bosses as unruly belligerent thieves in that they threatened the systems of exploitation and appropriation of wealth upon which the extraction of silver depended. Even the etymology of the term kajcha expresses this relationship to the mine owners, which, as Barragan (2017a) demonstrates, was the quechua term which described the sound that their slingshots made when warding off unwanted administrative invigilators or mine owners from their work areas (195). This vilification about their
illegality continued well into the twentieth century (Barragan 2017b). Unlike their counterparts in Mexico, cooperative mining was not displaced by transnational mining companies, it exploded.

Recently, work has been done in Bolivia to speak back against the perceived backwardness of the “informal” economy. In *La Economía Popular en Bolivia* Tassi, Hinojosa and Canaviri (2015) argue that the proliferation of the “popular economy” in Bolivia demonstrates not a threat to foreign investment but in fact a parallel economic space worthy of investigation. They demonstrate that Aymara traders, merchants, transportistas and cooperative miners have become “economy makers” (Escobar 2001) able to “expand their sociopolitical structure” and the economy by exercising relative autonomy to conventional market practices and forces (Tassi 2016, 8). Canaviri (2015a, 2015b) argues that Aymara cooperative miners in Northern La Paz exemplify the popular economy in Bolivia—their cosmological practices like the ch’alla and their closed sociopolitical structures which prioritize kinship have meant that they have been successful in becoming a “new elite” without having to make concessions to large mining companies. Rather than experiencing a process of “culture loss” (Turner 1995), those involved in the Aymara popular economy have demonstrated “a flexibility which challenges processes of social decomposition often associated with current processes of economic globalization” (Tassi et. al 2015, 16). On the one hand, what cooperative miners demonstrate is their ability, through their labour, not to erect a parallel economic system, but to actively resist the broader disciplinary force which accompanies capitalist dispossession. And second, as this dissertation will demonstrate, despite their resilience,
they themselves are articulating a sense of culture loss because of their relative autonomy at work.

The case of cooperative miners and the transnational mining company as they work alongside and atop one another in the Cerro Rico de Potosí can give us a privileged look into the formal/informal divide. As Hart noted in revising his concept in 1985, “the informal economy does not exist in any empirical sense: it is a way of contrasting some phenomena with what we imagine constitutes the orthodox core of our own economy.” Instead of rejecting the divide, this case shows how in making cooperative miners the “face” of mining on the Cerro Rico de Potosí and accepting the commonly held understandings of the sector as “primitive,” “irrational,” “illegal” then the transnational mining company and its subsidiary Empresa Minera Manquiri emerge as the “rational,” “modern” and “legal” Other.

1.6 Methodology

This dissertation stems from over 10 years of paid and unpaid work studying the relationship between Canadian and transnational mining companies and their workforces in Bolivia. For nearly three years I worked first as a volunteer, and then as staff, on the natural resources team at the Centre for Documentation and Information Bolivia (CEDIB), primarily researching Canadian junior mining companies in the country. Subsequently I worked as a consultant for the Centre for Mining Promotion Bolivia (CEPROMIN) and then as a consultant on three rounds of collective bargaining with the largest mineworkers’ union in the country, the San Cristobal Mixed Mine Workers Union.
in Potosí. Finally, from 2018 until 2022 I worked as the Latin American Program Coordinator at Mining Watch Canada.

But it was while working as a consultant for the San Cristobal union that this project truly began to take shape. I began working with the union while doing archival research in El Alto on the former State Mining Company, COMIBOL. The union executive would recount what I came to conceive as horror stories about how the company was cracking down and micromanaging their *every move*. From on-board surveillance software and administrative real-time monitoring, to penalizing repetitive bathroom breaks, the men and women who drove the gargantuan trucks, loaders and shovels up and down the country’s largest open pit mine were even suffering severe health impacts from this panopticon dystopia-made-reality. As bargaining with the company ended frustratingly in arbitration, I headed to Potosí to commence my fieldwork. At once I was struck with the ease at which small-scale miners moved about their daily lives, taking breaks and extended holidays, not showing up to work to spend time with friends and family, without fear of repercussions. I would learn later that this was not always the case at all the mines on the mountain, but that initial shock is what eventually determined the questions and direction of this dissertation.

My formal fieldwork began in El Alto, Bolivia, at the COMIBOL National Archives office in 2016. Here I worked closely with the then-director and now-deceased Edgar “Huracan” Ramirez. Huracan was a mine worker at the Unificada mine in Potosí while it was operated by the national mining company, COMIBOL—he was also the last mine
worker to be forced into resigning following the privatization. He was also a brilliant union leader, having held executive positions in the Unificada union, as well as the National Federation of Mineworkers Union (FSTMB) and the head of the Central Workers Union (COB). In El Alto, he provided me with endless support to review the Unificada’s financial accounts, geological studies, administrative review, health and safety records and other extensive documentation for the period following the nationalization. He constantly complemented my ongoing research with many insights as to what it was like to live and work in Potosí as a unionized miner. I was also afforded the benefit of reviewing the extensive archive on the World Bank structural adjustment plan for the mining sector. This research provided me with detailed knowledge of the forces at play in dismantling the state-run mining company and its unions and auctioning off its operating mines—like the Unificada de Potosí—to the highest bidder.

1.6.1 Arriving to Potosí

The colonial residues of the wealth generated by silver are still evident in the extravagant and brightly painted balconies and sunrooms which extend outward and over the recently renovated Calle Padilla. Local lore about the “boulevard” excitedly recounts how young wealthy Spanish lovers used to reach out across the narrow street, from one balcony to another as loud and exorbitant parades marched on below. Now re-cobbled for tourists and converted into a pedestrian walkway, the laneway appears to wind up the flanks of the mountain, continuing, one imagines, to the mines themselves. This of course, you later realize, simply is not true since, often, the roads within the colonial core of the city
simply lead nowhere that makes apparent sense. The rapid insertion of Potosí into the
global stage meant that what was formerly a mining hamlet was turned into a
metropolitan city overnight (Escobari de Querejazu 2001, 61). A metropolitan city which,
unlike its counterparts in Europe, sits on the very difficult and “desolate Andean altitude
of the silver mines on the Cerro Rico de Potosí…[it was a] rare city, located in an
inhospitable place” (Ibid., 60). In the late sixteenth Century, Viceroy Toledo, after
honouring Potosí with the title of Imperial City (Villa Imperial) ordered the construction
of the Ribera canal system. The Ribera powered the series of mills that crushed the ore
coming out of the mountain to process it using the “patio” mercury amalgamation system
(Bakewell 2009, Robbins 2011). It also served as a dividing line, cutting the city in two
from East to West, with the Spanish neighbourhoods on the West and the “Indian”
parishes called “rancherias” on the East (closest to the mountain) (Escobari de Querejazu
2001, 61) (see Illustration 3). The city was subsequently re-organized to prevent mixing
between the Spaniards and Indigenous populations living in the city.

Walking along that mystical laneway towards the mountain, the momentary sense of
nostalgia is quickly replaced as you cross the Calle Nogales, which, only a century or so
ago, would have persisted as the open Ribera. Suddenly assaulted with the loud bleating
horns of minibuses echoing off the narrow streets mixed with the choking smell of diesel
fuel as their engines battle the steep slopes and high altitude, you are transported back to
present-day Potosí. Calle Nogales is one of the streets that brings miners and neighbours
to the “upper” neighbourhoods of the city. Although now paved over with asphalt, the
divisions created with the colonial reorganization of space via “La Ribera” remain as
residues that continue to divide the city along class and ethnic lines. The “upper”
neighbourhoods, as they are commonly referred to in Potosí: San Cristóbal, San Pedro,
Concepción, Santa Barbara, and San Benito, have maintained their character as “mining
neighbourhoods” “working-class neighbourhoods” or “migrant neighbourhoods” in the
city (Absi 2005b). And, although the urban sprawl has grown to accommodate the
population of now 260,000 people (INE 2022), this tendency has continued to repeat
itself, with the urban middle-class and elite Potosino population living in and around the
city centre, and the peripheral neighbourhoods consisting of the working and migrant
populations living “up” or “down” the mountain in relation to the plaza. Along these
streets, the paint chips off the facades of colonial-era buildings and adobe houses that one
imagines to be hundreds of years old, judging by the thickness of the walls which
crumble while their owners attempt to patch them with what materials they have

In May 2016, I moved into a second-story apartment that looked out over the Plaza del Minero in San Pedro, one of the “upper” neighbourhoods of the city. The neighbourhood’s narrow streets wind confusingly towards its colonial parish “San Pedro,” which then connects to the small plaza where a large monument atop of which stands a tall miner solemnly holding a pneumatic-powered drill—the symbol of the National mining company, COMIBOL. The plaza, I was told by a former COMIBOL miner, used to be a pick-up point for unionized miners on their way to shifts at the mine.
Now, in the mornings and late afternoons, it was plagued with the chugging and stalling of decades-old buses headed up to the miners’ market Calvario and finally, Pailaviri.

Here I spent the next 15 months living in the working-class mining neighbourhood of “Plaza del Minero” in San Pedro, and visiting the mines. I started by mapping out the tourist agencies in the cities and entering the mines on tour. Then, in July, with the capable research assistance of Graciela Balcazar (Chela) who accompanied me (often speaking Quechua to the guardas at the mines) on the first round of my mine visits, we spent four months visiting 140 bocaminas, 139 of which were operational. These visits enabled me to identify miners who were willing to talk further and get their contact information for follow-up conversations or mine visits, get a lay of the land of the diversity of difference between bocaminas (which is significant), and complete a basic survey which looked at workforce composition, levels of mechanization (data which I present in this thesis) but also included data collection on the working and living conditions of guardas and their families. 10 Although I didn’t make it to every mine on the mountain (140 represents about 80% of the total active mines), I did make it to all the largest.

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10 The survey data also revealed blatant violations of the guardas’ basic labour rights, and I provided the Departmental Labour Ministry with that data in an attempt to give them a panorama of the situation in order to act on it—upon request of guardas facing abuses who wanted inspectors to come and see their reality. I never saw that anything was ever done publicly with that data, nor did any of the guardas with whom I maintain contact after I left claim to have had any interactions with labour inspectors.
Illustration 5: Chela writing notes on the survey with the help of two mine kittens. Photo taken by the author.

Despite my original intention of working full days underground for a few months, I was not able to spend as much time underground working as I had hoped. ¹¹ I received many

¹¹ This was not necessarily due to my gender as some might assume, given the highly masculine nature of the work culture and due to some beliefs regarding women and their relationship to the Tío. As anthropologist Pascal Absi notes (2008), “white-woman” are considered infertile and do not pose a threat to the Tío, which made her trips into the mine feasible, whereas they might have been more complicated for local women. I never faced any comments about not being allowed underground because I might threaten the Tío or scare away the mineral—it could very well be due to the fact that I am a white-woman. But I also met many women who work underground, either as peons themselves, or as the daughters and wives who supported their fathers and brothers to make ends meet. The mines that allow tours are also overrun with
invitations to come and observe how the “mine works” but I did not feel comfortable engaging in that kind of voyeurism constantly. My past experiences in Bolivia had shown me that helping people with their work, especially if you were white and privileged, opened a door for new grounds for common conversation and understanding. If you simply watched and took notes, you were never able to overcome this perceived separation between the “observer” and the “observed.” Being willing to work, no matter how poorly at first, indexed something else and made new relationships possible. But this was particularly hard with underground mining, since, quite frankly, I wasn’t in the physical shape to do the work properly, and I, in the short instances where I was underground, wasn’t able to learn the skills necessary to not put myself, or the miners who had invited me in, at risk. I did join miners underground for several shifts (more than 10) and did assist where I could (shovelling lode most often). To complement this more ‘active’ participant observation I also collected photographic and video documentation which enabled me to capture certain iconic and indexical elements of place that can be more difficult to capture in written field notes (Taylor 1996, Cherrington and Watson, 2010) as well as the more subtle bodily movements and practices that would otherwise be difficult to observe in detail with traditional pen and paper ethnography (Pink 2001). In having my camera, I became a resource person made “useful” but that also meant that I didn’t always bring it out with me, since it changed my interactions with people (Ibid.).

Very early on I decided that I would only film once I had developed a relationship with a tourists, many of whom are women, and so miners are likely more accustomed now, than in the past, to having women present. It may also have something to do with the discussion this dissertation seeks to address in Chapter 4. Whatever the reason, having access to the mines was not limited entirely due to my gender but my overall insecurities about my lack of skill.
miner, and when it was clear that it wouldn’t interfere with their safety. To reciprocate support from miners, tourist agencies, and NGOs, I produced short films and photographs for their personal and professional uses, which, made me feel that the relationship was less one of total extraction.

Perhaps more importantly, I also worked hard to make myself useful in other settings where mining and mining-related activities happened. I took advantage of working on the surface when possible. I assisted guardas with their daily tasks of washing dishes, carrying water, taking care of kids and animals, and also chatting. I spent time talking with miners during their down time, and found ways of contributing to the conversation with “outsider information” about mineral markets, or company statements, but mostly just drinking and hanging out with them. My partner, Vladimir Díaz Cuellar (who occasionally also provided his labour to a working group within a mine) and I attended ceremonies, birthday parties, baptisms and anniversaries at the family level, but also attended many formal mining-related events like cooperative anniversary celebrations and the Federation of Cooperatives of Potosí’s bi-annual Congress (the joke at the time being that I was a white mining investor “patron” wearing a borrowed miner’s helmet and carrying a membership card from friends at Porco Limitada), as well as political meetings and protest marches. Other times, I worked above ground, sorting or concentrating mineral production as it came out of the mine, a fact which constantly received reactions of all sorts, but most common snickering and disbelief that a gringa was doing manual labour. It was during these exchanges, where I was working alongside some of the
miners’ families, where I believed I developed a more meaningful sense of trust. My real commitment to practically doing mine labour conceived broadly, as well as this “deep hanging out” (Geertz 1998) in all of its complexity and multiplicity, gave me a sense of the challenges and benefits mining families face living in the working class “upper” neighbourhoods of the city. For instance, understanding what it means to go without water for five or six days a week. It also enabled me to develop long-lasting kin relationships that persist to this day with many miners and their families in the city.

Illustration 6: Hanging out with the Montes family in San Pedro. Photo taken by Vladimir Díaz.

Beyond participant observation with miners and their families, I requested formal interviews and submitted access to information requests to all the relevant public municipal, departmental, and national mining, labour and health authorities, of which the majority of the requests were ignored, delayed indefinitely, or denied. The interviews I

12 Gose (1994) has some important reflections on mutual labour and care as assisting to overcome structural positions of power inequality in Huaquirca, Peru.
was granted were limited in scope and serve merely as context. Similarly, the majority of
the data I was granted came from the regional COMIBOL offices and was not detailed
enough to be useful. My formal initial request (and subsequent follow-up request) to
work in partnership with the FEDECOMIN—Potosí was denied on the grounds that it
was too risky given the current political moment the sector found itself in, but I was
granted an informal research relationship with the Cooperativa de Trabajadores Mineros
Central Mixto after I danced with them in Carnaval Minero.

As part of a follow-up four-month fieldwork visit in 2018, I completed 40 long-form
formal interviews with retired miners who had worked as either cooperative miners on
the mountain or as unionized miners of the Empresa Minera Unificada de Potosí mines. I
also recorded several life histories of miners with whom I have developed close
relationships.

Alongside work I completed in Bolivia I did an extensive revision of the “paper world”
of the multiple foreign mining companies who have been reporting on their operations
since the San Bartolomé project was developed and entered production, as well as the
extensive geological literature on this nearly 500-year-old deposit. Throughout this
dissertation I try to maintain a constant dialogue between miners and the external
representations of the materials that they work—akin to Katerina Martina’s (2016)
important methodological practice on colonial phosphate mining in *Consuming Ocean
Island*, since they are ultimately intimately tied and very materially impacted by what is
said in those reports.
Finally, although this dissertation works to centre the relationship of the transnational mining company with small-scale producers in Potosí, I was refused interviews with the company’s Bolivian management team in 2016. And, although I attempted to make headway with the company’s union through contacts I have with both the Bolivian Federation of Mineworkers (FSTMB) and the Department of Potosí’s Workers Council (COD-Potosí), I was unsuccessful on both occasions. A close friend who worked at the time for the San Cristobal mineworker’s union told me that the union leadership had close ties to the company and that it didn’t surprise him that they didn’t want to speak with me. The voices of the Manquiri mine workers union and their rank-and-file workforce represent a noticeable gap in this dissertation, but their absence also represents a broader tension which has persisted between unionized miners and their cooperative counterparts on the mountain for decades.

1.7 Organization of the Chapters

This dissertation mimics the conic shape of the mountain as I build the broader base of its argument assembling, building and complicating cooperative miners’ experience of labour under the capitalocene. What is it like to work on the symbol of what it means to be Potosino while it collapses around them?

Drawing from a critical discussion of how cooperatives have been understood historically in Bolivia, Chapter two examines the structure of cooperatives in Potosí. Here I present the findings of the extensive survey I completed with Graciela (Chela) Balcazar as a way of probing some of the common-held assumptions about the sector with respect to levels
of mechanization, composition of the labour force, and scale of operations. I demonstrate that the shift to polymetallic production and increasing capitalist metabolisms of ore extraction have meant that cooperatives need to shift to fossil-fuel powered methods of extraction if they want to keep up. Then, I compare the ways the cooperative sector is intertwined through international markets and in relationship to the transnational mining company, the Empresa Minera Manquiri, in ways that principally benefit the company. Ultimately I conclude that while structural analyses are important to identify broader trends of how international metal markets work in Potosí, they are limited in how those relationships are experienced. Chapters three, four and five seek to provide that perspective.

**Chapter three** looks at cooperative life rhythms, as a way of understanding why miners chose to be at work but not working. Drawing influence from E.P. Thompson and Kathleen Millar, I examine practices like the pijcheo, ch’alla and participation in festivities not only as acts of socialization but of active resistance to the pressures of a capitalist metabolic tempo which seeks to control workers’ time.

Continuing on with understanding miners’ lifeworlds and in direct response to common-sense understandings that small-scale mining is “primitive,” **Chapter four** takes mine work seriously. Drawing from work from phenomenology I demonstrate how mine work is highly skilled and sensory and serves to create a socialized work space between miners wherein principles of comradeship and solidarity are developed: being a “miner” for maestros skilled in the trade means drawing from a toolkit developed socially and over
time. But, as this chapter also demonstrates, more and more “non-mining” is taking over at the mines on the Cerro Rico, which has maestros speaking of dispossession even though they continue to work the deposits.

Chapter five takes the miners’ ecological relationship to the materials and mountains they mine seriously by asking why it is that the ritual practices that have historically characterised the sector appear to be disappearing. Drawing extensively on the ethnographic record and on miners’ reflections on their changing relationship with Tíos, I demonstrate that not only are miners’ sense of time and labour practices being challenged as capitalist metabolisms speed up, but that, since rituals are intricately interwoven into social relationships which do not prioritize the generation of exchange value as the end goal, they too are becoming manipulated beyond recognition.

Returning to the descending slope of the flanks of this conic discussion, Chapter 6 probes the question of collapse as linked to broader processes of violence. Taking the lead from miners and their families as they express concerns about the deteriorating state of affairs in the city, I examine mine accidents, suicides and an overwhelming sense of violence as a metaphorical result of the mountain’s collapse. What is at stake, I demonstrate, if changes miners are experiencing at the work site are not halted, is broader socio-ecological collapse.

Finally, Chapter 7 circles back to the mountain as I search for explanations of how to characterize this moment of apparent metabolic acceleration. Drawing influence from
discussions on the Anthropocene and capitalocene, I move back and forth between colonial production and the present large-scale open-pit operations of transnational mining capital in order to demonstrate not only the qualitative but quantitative impacts of today’s extractive model in Potosí. Yes, the residues of colonial extraction have left traces in the landscape as well as in people’s minds and bodies but they pale in comparison to the acceleration of capitalist metabolic rhythms present today on the mountain.

In Chapter 8 I argue that miners’ resistance to real subsumption, by pursuing veins as well as relative autonomy, can serve as seeds for the post-capitalist future that we need.

Finally, it is my hope that it is the powerful voices of the miners and families of the working-class neighbourhoods of the city of Potosí which ring through in this dissertation, but any misrepresentations or errors are entirely my own.
Chapter 2: Situating the Flesh and Bones of Mining in Potosí

In the early morning, the Calvario is a hotbed of activity (see Illustration 5). Known as the “miner’s market,” it is the last commercial stop before reaching Pailaviri. It looks, smells, and sounds like other open-air markets in the city and across the country with the exception that it is the one-stop shop where miners can get most of what they need for a daily trip into the mine. Miners can pick-up fried snack foods and full meals, bottles of alcohol, soda and juice, wool socks, rubber boots, batteries, coca, dynamite, shovels, wheelbarrows, and even pneumatic drills. It’s simultaneously the main market on this side of the “upper” part of the city which services the families who live around it. Because it is the last market of its kind before reaching the mine, and due to its distance from the city’s connections with the surrounding valleys, food is more expensive and more limited, which means it’s not where families will stock their pantries. Instead, the use it to buy last-minute emergency items. It’s also a main transit hub for the “upper” neighbourhoods of the city which connect it horizontally to other popular neighbourhoods in the city, but also provide transportation options to the city’s main interprovincial and interregional bus terminals and markets. Finally, it is often more “diverse” than a common popular market in Bolivia since it too is the last stop foreign tourists will make before loading onto buses and heading to the mines. Since miners don’t put on their gear until they reach their respective mines, if it weren’t for the fact that tourists are usually wearing miners’ helmets and rubber boots by the time they reach the Calvario, outside visitors wouldn’t know it was the “miners’ market.”
But miners begin to appear alongside you as you board the bus from Calvario to Pailaviri. Most are dressed in the characteristic athletic sweatpants, hoodies, ball caps, and running shoes; what often gives them away are the soccer shoe bags from which their helmets protrude. These miners, I would learn later, are mostly peones (see below) who prefer to carry their gear with them to avoid possible theft when storing them at the storehouses typically found at each mine. Once you’re off the bus in Pailaviri and walking the former EMCUP installations, you’re confronted with snapshots of what have become very typical representations of mining on the mountain: two miners wearing soccer jerseys, rubber boots and helmets struggle to steer a charging rail car out of the mountain; another dressed similarly stands atop a long slide shovelling the remaining ore from his cart into the back of a dump truck waiting below; another group of about five sit perched atop a
hardened pile of mine waste picking leaves from a bright-green bag of coca, and so on. These “cooperative miners” are the flesh and bones of “mining in Potosí.” The first to greet you as you cross through the gates at Pailaviri, their faces and bodies have been put on display for international audiences from countless photo essays, longform journalistic pieces, travel blogs, and documentaries. And how couldn’t they? As you walk around this area, which is relatively close to the city, you discover that you are surrounded by operating mines. During my time in Potosí, I estimated that nearly 6,000 miners were working over 140 actively producing mines on the mountain. Other sources have estimated that up to 20,000 make their way in and out of the mines each day. And, despite what initially feels like total unorganized chaos, similar again to some of the country’s large Andean markets, you realize quickly that things are not as disorganized as they initially feel. These miners work for what are legally defined entities as cooperatives and, at the time of my research in 2016 and 2017, there were 29 cooperatives registered as operating on the Cerro Rico de Potosí.

As we saw in the introduction, cooperative miners aren’t the only productive mining actors working on the mountain. But, before we get into the relationship between cooperative miners, commercializers, mills, and the transnational mining company, Empresa Minera Manquiri, it is important to clarify discrepancies between how cooperatives operate in theory and in practice.

Anthropologists have studied cooperatives for quite some time as a way of understanding “alternatives” to capitalist societies. In 1899, Marcel Mauss noted that “cooperatives are
foundations for future society generated within the capitalist structure...they are the strength and the resistance of socialism; they are the means by which socialism creates” (as cited in Nash, Dandler and Hopkins 1976, 3). In 1976, while the deindustrialization crisis was sweeping across North America, anthropologists Nash, Dandler and Hopkins noted that studying cooperatives across the world could bring important insights about how to organize future societies. In the Americas, agricultural cooperatives were studied extensively following the agrarian reforms that swept across the region during the second half of the twentieth century as many grappled with determining to what extent they were successful in replacing latifundio systems by becoming viable economic producers (see Alberti 1976, Aldersen-Smith 1976, Aranda 1968, Cristóbal 1982, Montoya 1980). Following the collapse of the Argentinean economy, the famous worker-led factory takeovers (Empresas Recuperadas) cooperatives were again studied extensively. Canadian journalists Naomi Klein and Avi Lewis’ documentary “The Take” (2003) championed these worker take-overs as a brilliant response to the failure of the neoliberal “shock doctrine” imposed on the region (Klein 2007). Subsequent studies sought to understand not only the economic viability of these worker-run factories (Fields 2008) but also the extent to which they were able to carve out alternative spaces within capitalist markets as well as produce new ideologies based in solidarity and collectivism (Bryer 2010, Bryer 2012, Faulk 2008, Ferry 2005).

Along these lines, in Bolivia, according to the Law of Cooperative Association (2013), a cooperative is “an association, without lucrative ends, of people who voluntarily form cooperatives, which are based in cooperation and solidarity in order to satisfy productive
and service needs, with democratic and autonomous structure and functioning.” For many years the Movement Towards Socialism (MAS) government under Evo Morales emphasized that cooperatives are “anti-capitalist” entities that form part of the “plural-economy” approach of the government based on principles of solidarity and cooperation (Wanderley, Sostres and Farah 2015). This is reflected in the language they used to describe the sector when drafting and approving the Law. The government, renowned internationally as forming part of the Latin American left leaning “Pink Tide” “socialist” governments, was thrust into power in December 2005, following the sweeping neoliberal reforms which had rocked the country for nearly two decades. Morales and his Vice President Álvaro García Linera, a former exiled member of the guerilla and well-known Leftist intellectual, were elected with widespread popular support on a platform which demanded radical restructuring of the Bolivian economy, including its mining industry (Shultz and Draper 2008, Do Alto and Stefanoni 2008). The problem though, as other research on cooperatives has demonstrated, is that cooperatives operate within the context of capitalist markets, and often at a disadvantaged position with respect to international markets (Francescone 2018). Piñierio (2009), in her study of agricultural cooperatives in Venezuela, noted that they are perceived as possible vehicles for spreading ideological and material counter-capitalist movements. Yet, the author is quick to note the difficulties the sector faces that prevent cooperatives from becoming the radical organizations that theories purport them to be. As Piñierio demonstrates, the most economically successful agricultural cooperatives ultimately develop into enterprises, contracting out their labour and maximizing profits at the expense of solidarity. Bryer
(2010, 2012) also raised this problem with respect to the empresas recuperadas studied in Argentina.

As critiques began to emerge from within Bolivia against the Morales administration for not fulfilling the radical grassroots demands of the time with respect to nationalizing and industrializing the country’s natural resources, cooperatives emerged as one of the examples used to highlight the contraction between government rhetoric and reality (CEDLA 2006, Goméz 2011).\(^{13}\) Bolivian researcher, Vladimir Díaz Cuellar (2011, 2012), was one of the first researchers to systematically map out how many of the neoliberal policies which emerged following Paz Estenssoro’s New Economic Plan were sedimented in practice across the mining industry by the MAS government, including leading to the expansion of the transnational mining boom in the country. Then, in 2013, Díaz Cuellar and I published an article which looked specifically at the cooperative mining sector in the national political magazine PetroPress.\(^{14}\) Much to our surprise at CEDIB, the article mapping out the transnational mining interests in the country never received media attention, whereas the article on cooperatives received widespread national coverage. In the article, we argued that the expansion of the cooperative sector had reached historical heights, and that this expansion was, in part, due to political encouragement from the MAS. In this article, we demonstrated in structural terms\(^{15}\) how

\(^{13}\) CEDLA argued for example that cooperative miners and petty traders were becoming the new economic bourgeoisie of the MAS government.

\(^{14}\) We wrote the article in response to the-then recent Colquiri conflict, which had exploded between salaried workers and cooperatives and resulted in the death of a peon miner, and the reversion of the contract the transnational Glencore had with the Comibol.

\(^{15}\) Ours, like much of the research at the time, was completed with very little fieldwork. We collected most of our data from others who had visited cooperative centres, but for very limited lengths of time (see, for example, Michard 2008).
the sector had benefited in terms of sector-specific legislation, and political seats in important official party positions. What we also argued, however, was that notwithstanding some of the benefits that a select few elite leaders had enjoyed, the majority of cooperative miners continued to work in an environment of “flexibilized and precarious working and social conditions” which, we argued, should have been a principle point of concern for the self-proclaimed socialist government of the people. The media though, moved in part by the dramatic displays of violence during the Colquiri conflicts, and in part by the apparent doubling down by the government on the “plural economy,” emphasized the purported benefits and quickly the sector became widely understood as being dominated by capitalist “bourgeoisie” bosses out for their own economic self-interest. Subsequent works by Bolivian-NGO Centro de Derechos Laborales y Agrarios, CEDLA (see Nogales 2014, Poveda 2014) and academic scholars (Marston and Perrault 2016) continued to repeat this general idea. Despite the polarization around this issue, there is general consensus that, from a structural perspective and in the majority of cases (but not all), cooperatives are not the central commercializers of the mineral extracted from the mine where their associates live, nor do they export directly, meaning that the profits generated from their activities are not distributed equally among members as the name suggests (Francescone and Díaz Cuellar 2013). As anthropologist Pascale Absi (2005b) notes, the only overarching role that cooperatives serve where relations are not mediated by individual partners or working groups is to sign the rent contracts they have with the government for the right to work demarcated areas in a given deposit, called a “concession.” Within the heated political climate though, public debate became narrowly focused on identifying and debunking the
“cooperative label,” demonstrating how the MAS government maintained a clientelist relationship to one of its principal political allies, and demonizing the sector as exploiters and contaminators due to its undercapitalized mines. The transnational mining sector never got the same kind of attention and fell out of the public’s view despite Díaz Cuellar’s multiple attempts to re-position it as relevant to the broader national public debate.

What is interesting about how cooperatives came to be characterized is that it spread across theoretical perspectives. Leftist developmentalist think tanks, just like the right-wing neoliberal economists before them (Morales and Evia 1995), assumed that large-scale operations (the difference being state-owned or privately-owned) would be better for working conditions, rent capture and environmental protections. Despite the narrow but targeted nature of the public debates, cooperative mining continued to expand at velocities never seen in the country, and the sector has continued to grow with respect to its capacity to mobilize and drive public policy, if not always in favour of the party in power.

In 2021, the Vice Ministry of Cooperative Mines referred to the growth period between 2005 and 2021 as the “cycle supported by the government” within the context of the “plural economy.” Certainly the sector has exploded, following trends worldwide,

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16 As we will see in the following chapter, the MAS government continued to benefit from the political support of the cooperative sector until that alliance ruptured violently in 2016. Part of why the government was so successful in garnering public support for the brutal repression of the sector was because they were already primed from these earlier debates.
swelling to represent 88% of the total mine workforce in the country (Ibid.) The majority of that expansion, though, is substantially swayed towards alluvial gold producers in the Amazon basin in the departments of La Paz and Santa Cruz, which represent 80% of the registered cooperatives in the country, whereas the other 20% are registered as what are referred to as “traditional” cooperatives, which extract base metal polymetallics and silver. These deposits are today found at mines that were formerly operated by COMIBOL, but also some mines that were considered too peripheral for industrial exploitation following the 1952 nationalization (Michard 2008). In contrast to the alluvial operations in La Paz and Santa Cruz (Calla Ortega 2015, Nogales 2015), these are underground operations in their vast majority. On the national scale, the Cerro Rico de Potosí is the largest single deposit in terms of numbers of workers, and it is the longest to be worked (Nogales and Collque Arrieta 2014). As such, in the next sections, I analyze some of these claims in order to understand how the sector is structured.

2.1 The Structure of Cooperative Mining in Potosí

2.1.1 Miners

There is no single source that points to total labour force at the cooperative mines in the Cerro Rico de Potosí—unfortunately data is scattered and often narrowed to the departmental level. A few years before arriving in Potosí (circa 2011 and 2012) I was hearing rumours of there being upwards of an incredible 10,000 miners working in the
Cerro Rico. At the time, Potosinos were describing this boom as something the city had never experienced before. Later, economists Ruben Ferrufino, Rodolfo Erostegui, and Marco Gavincha (2011) averaged the total workforce of miners working in the Cerro Rico at about 18,000. In April of 2021, the head of the Federation of Cooperative Miners of Potosí (FEDECOMIN), Edgar Huallpa, declared in an interview that there were between 15 and 20 thousand miners working the mountain (El Potosí 2021). Although we don’t have a complete picture of the total workforce in the mines in the Cerro Rico over time, it is clear from miners’ testimonies (as we will see in more detail in Chapter 3) and the data points in Figure 1 that we do have that there was a substantial increase in the workforce following the dismantling of the Unificada, which began in 1985, and the shift to polymetallic production with the collapse of tin prices. Surely those 6,000 miners that I estimate were working during my time in Potosí is an underestimation of the actual numbers and we can assume, based on the data points before and after, that it might even be double that, but even that underestimation is 300% higher than the period prior to polymetallic production.

17 Their calculations are based on average productivity estimations of a working group in the Cerro Rico that were provided to them by the COMIBOL Regional Office in Potosí. 18,000 is the mean of the range between 15,000 and 21,000 that they came up with in their estimations.

18 It is quite likely that my numbers are underreporting since I depended on socios and guardas telling me the numbers of people working at that time. Due to increasing public scrutiny and criticism about the use of peons in particular, it wouldn’t be surprising that those numbers were deflated on purpose. It also could be due to a fall in prices, something that miners were complaining about while I was in the city, which, according to them, results in a nearly immediate reduction of peon workforces to bare minimum levels. Finally, I did not manage to get to every mine in the mountain, but only 140 of the approximately 200 that were operational.
The labour force, though, is not monolithic. In general, there are at least four categories of miners who work in the cooperative mines in the Cerro Rico. The first are the socios (partners). These are miners who are affiliated with the cooperative, have paid\textsuperscript{19} (or inherited from another socio, most commonly a father) an entry quota, have usufruct rights to a work area in a mine (or a mine itself depending on its size) and pay dues to the cooperative. From these dues they receive healthcare and social security benefits. When they work, socios are considered experts in their trade. They are skilled with their hands and their senses in prospecting, developing, and mining for the minerals in their mines. They are remunerated based on how much they are paid for their production at a given time when they sell it to a mill and are responsible for providing all the upfront investment required for opening or advancing on a mineral deposit.

Next are segundas manos (second hands). According to miners, segundas manos are piece-rate workers who are hired on contract-basis for a specific chunk of work. They are often skilled in specific aspects of the mining process, either prospecting, exploration,

\textsuperscript{19} During my fieldwork I heard miners complaining that quotas were costing upwards of 25,000 USD to work in one of Unificada’s mines.
development, or drilling, and receive a percentage of their production, with another percentage going to the socio or mine owner who has given them use rights to the work area. They are not affiliated with any cooperative, and do not benefit from social security or health benefits. They provide their own tools and often their own inputs (dynamite, coca, alcohol, diesel). While I was in Potosí the going rate was around 70 (segunda mano)/30 (socio/owner) of the net return from sales. Since they are not affiliated with any mine in particular (although I met some who had worked with the same owners for years), segundas manos move around quite frequently, using their expertise as leverage to broker better conditions. I was told on several occasions that segundas manos are the “new” socios. They are skilled in the ways of the trade, but, for reasons of upfront capital or limited work areas, were never able to officially become socios.

The third are peones (peon). Peones are wage-labourers who make a day-wage for (typically) eight hours of work.20 In the past, peons were considered apprentices and it was common that a peon would work alongside a seasoned socio for a year or two, after which they would move into their own work area (see also Absi 2005b). Now, though, this trend of apprenticeship to master miner, according to miners today, is less prevalent, something we will expand on fully in Chapter 4. Today, peons are often employed to do hyper-specialized and physically demanding repetitive labour working as carters, loaders or winch operators. They are not affiliated with any cooperative, and do not benefit from social security or health benefits. Peons will bring their own personal protective

20 Although eight hours is the base, it is very common to hear of peons working extra hours, in some cases, I even heard up to 24 hours underground.
equipment (PPE—helmets, boots, head lamps)\textsuperscript{21} but are not obligated to provide any inputs. During my time in Potosí, the going rate for peons in Pailaviri, the area closest to the city, was 75 Bs per day, and that rate increased to 100 Bs (Roberto section) and 150 Bs (La Plata section). The rule of thumb was the further away you moved around the mountain from the city centre, the higher the wages were. Sometimes, depending on the mine and the socio, peons could also make a “bonus” piece-rate percentage on the overall production of a mine, which socios used as an incentive to discourage turn-over.

For the purposes of this dissertation, the main workers I will focus on are these three categories of miners above. That being said, there are at least two other categories of workers that are important to dwell on, if only momentarily, since they are often rendered invisible in the literature as productive actors. This is likely due, at least in part, to the fact that they are mostly women. They are also significant since they play an important role in the reproduction of the mineral activities and labour force on the mountain. They form an integral part of the tapestry that weaves underground and surface work on the mountain.

*Llampiris* or *palliris* work on the surface sorting and refining polymetallic production as it comes out of the mine. Palliris re-work and scour mineral waste dumps, and their work areas were substantially reduced or eliminated when the Empresa Minera Manquiri (see below) began processing these dumps to refine silver. Nearly all the palliris, some of whom had been founding members of their cooperatives working for more than 50 years, 

\textsuperscript{21} In some cases, depending on the boss, peones could be provided this PPE as well.
were displaced with the commencement of the company’s activities (See Absi 2005a).
Palliris are usually affiliated with a cooperative (some have paid the quota, others have inherited it from a spouse or family member) and have social security and health benefits. They are paid based on the price they are given from the sale of their production to a mill.

Llampiris/as work at the mine entrance in the cold wind and under the hot sun and sort the production coming out into the loading bays (buzón) and loaded onto trucks. In both cases these workers primarily identify as women, although I did meet many Llampiris who were men and doubled as guarda minas. Llampiris are paid on an individual basis by the partners or segundas manos who hire them. Llampiris can be remunerated in two ways. The first, by piece-rate, that is, by the number of loads they sort. In 2017, the rate for sorting a “double” was between 20 and 35 Bs in Pailaviri, and 50 to 75 Bs in other sectors.²² Llampiris, if they weren’t already living at the mine, would agree on a day or several days a week to come and sort. The second way is through a daily wage. At the largest mines where mineral is coming out of the bocaminas and being dumped into the buzones at a constant pace, it is common to see rocks and larger pieces of mineral flying constantly out of the buzón and rolling down the mountain. In the sectors closest to the city, the going rate for Llampiris was 75 Bs a day and at the back of the mountain furthest away from the centre, the rate was 100 Bs. It is worth noting that there was more work

²² A doble (a double) is a mineral truck which can hold between 18 and 20 tonnes of mineral. A simple can hold eight to nine tonnes. It is important to note that a doble in nearby Porco is only 14 metric tonnes, since, there is a law which prohibits the passage of trucks with heavier loads on the newly constructed highway that connects Porco to Potosí.
for Llampiris at the mines in Roberto but women expressed a disinterest in these kinds of jobs due to the distance required for them to travel, which in some cases exceeded an hour (including taking a bus, and then walking) and could be much longer (two hours or more) if just walking. 23

And finally, there are the guardas/serenas (guards/watch people), as they are commonly referred to: people whose job it is to protect the mines from thieves or unwanted visitors. During the time that I was in Potosí there were approximately 98 guardas actively working at mines on the mountain. They control who goes in and out of the mine and are very wary of the appearance of outsiders. Guardas (or their dogs) are the first people you will meet when walking around the mountain, since it is their job to recognize a potential intruder and discover what it is they want. Guardas are contracted on an individual basis either through the mine section’s cooperative or by individual socios, and are paid a wage or salary—depending on the cooperative, individually by socios, or through the cooperative. Typically, mines that employ more than three socios have a guarda living at the mine, and some of the larger mechanized mines can have two or three guardas living at the mine, spread out across the property to ensure a better chance at protection.

Guardas are primarily responsible for invigilating the mine, day and night, to guard the machinery (some of which, in the case of air compressors, can cost upwards of 10,000US$), and the casillas where miners keep their personal work items like headlamps, helmets, picks, dynamite, and other materials central to the productive

23 This sector had a large majority of larger-scale mines.
process. Since the equipment remains at the mines year-round, guardas are expected to remain permanently at the bocaminas. In the event that a guarda is not around and something is lost or stolen, their absence is blamed as a cause. In the majority of cases, guardas are not permitted to take holidays and often rely on their children to stand in their stead when they go down to the city to get groceries or other necessities. 24

24 There were two mines, both operated by the Cooperativa Minera Reserva Fiscal, who, along with giving yearly raises to their guardas, gave them two weeks holidays throughout the year.
The monthly salaries of guardas range from 0 to 2500Bs, with the average salary hovering around 800 Bs.\textsuperscript{25} They do not often receive raises and many of them are making the same salary they made 15 or 20 years ago. Despite the fact that these numbers give us an idea of how much they are paid for their services, many guardas expressed being in a permanent state of payment insecurity, with many partners, especially at smaller mines, being in arrears with their payments for months at a time.\textsuperscript{26} There are cases where the guardas I met do not receive a salary, and partners give them something in exchange as remuneration: first, they are given what is called a “picha,” which is the right to clean out the buzones after mineral has been sent to processing, and sell the product of that labour, or second, their husband or partner is granted the right to work in the mine as a peon.\textsuperscript{27} Although partners often tell guardas that this picha is to replace their salary, women do not see them as the same thing necessarily.\textsuperscript{28}

It is worth noting here that despite the common representation that guardas are *viudas de mineros* (widows of miners) the guardas who were working in 2017 were mostly women (86%), but the majority of these women were either mothers whose husbands or partners

\textsuperscript{25} The monthly minimum wage in Bolivia is currently 2000 Bs, 1 Bs = 5.40 CAD (2017).
\textsuperscript{26} According to Potosína labour inspector Noemi Coria, the most frequent labour dispute which emerges between guardas and the cooperative partners who employ them is one related to remuneration, and more specifically, the failure of a partner to pay what is owed to their employees.
\textsuperscript{27} There are two guardas who are not paid a salary and do not receive a picha on the mountain.
\textsuperscript{28} In general, the picha is also granted to the majority of guardas who earn a salary, and is described by miners as a yapa of sorts. Guardas comment that the picha really is “house cleaning,” since, if no one cleans and sweeps out the buzones between uses, the mineral will pile up and harden with rainfall, making it difficult to gather mineral in them in the future, which ultimately results in more work for miners, who end up having to dig out the channels to their original depth.
had abandoned them or were married or co-living with peons in the mines themselves. They were not all “victims of the mountain that eats men,” as NGO Musol and other foreign media outlets have described them.\(^{29}\) Instead, it seems the mines act as one of the first ways that newly arriving rural migrants can begin to earn a wage. In all cases, guardas lived with at least one of their children or grandchildren, and the average number of children who lived with their mothers was four per household.

Although I met a handful of women miners (a pair who were working underground, and several who were mining the surface as llampiris), the overwhelming majority were men. I didn’t systematically collect survey data on age or place of origin, but the majority of socios I spoke to were men over 30, some quite older, and the majority of peons were younger men, ranging from their late teens to late 20s.

So now that we know who is working at and around the mines, we can return to those most directly involved in mineral extraction. An important aspect of the labour force of the cooperatives in the Cerro lies in their composition. As we have just seen, there are at least four categories of workers making up the cooperative mining workforce in Potosí. During my data collection I asked miners and the guardas protecting the mines how many socios and how many peons worked at the mines I visited.\(^{30}\) In 2016 and 2017, according

\(^{29}\) For example, the 2015 documentary short “Minerita” portrays the guardas as primarily victims. Interestingly enough, Musol would often make statements to the local press about the “poor widows,” but their own diagnosis of the sector produced in 2008 ratifies my findings (Musol 2008).

\(^{30}\) I initially began asking about socios, segundas manos and peones, but was told that there are usually just a handful of segundas manos in the large mines, so most did not know the breakdown. It is important to note that I also solicited this information officially from the FEDECOMIN – Potosí but was denied.
to these conversations, there were 1,500 socios and nearly 4,000 peons working at the mines, meaning that nearly ¾ of the total workforce was composed of waged workers.

As we saw at the beginning of this chapter, cooperatives have been criticized as exploitative entities in that they contract out day-labourers for a wage, thereby violating their character as not-for-profit entities. According to the 2013 law, cooperatives should only be associations of equal partners (socios). In theory, the presence of wage labourers (peons and guardas) creates an unequal distribution hierarchy wherein workers are remunerated a wage that is not equal to the value their labour generates. Moreover, it is likely that the ratio of peones to socios is higher since, if any underreporting happened while I was collecting my data, it was likely with respect to the number of peons, since miners were reluctant to share exact numbers for fear of public criticism. At least at a structural level, from the perspective of the workforce, wage labourers are the most common mine workers at the mines on the Cerro Rico de Potosí. Now that we know how many miners there are and their composition, we can move on to understanding how they are organized at the level of the mine site.

2.1.2 The Mines

The landscape of the mountain felt like it was in a constant state of flux. I would visit a mine that was overflowing with activities one week, and a few weeks later, the mine entrance would be boarded up, with neighbouring miners noting that the socio had failed to break even and was forced to leave. Other times, the activity would be stopped due to festivities, or a death. But despite this variability, there was definitely a core of mines which operated consistently all year round, with only a few peripheral mines entering in
and out of production. An important part of these core mines, those I have classified as large and medium sized mines according to the size of their workforce, are visible from and close to the city limits.

Illustration 9: Dogs stand guard outside a mine in the San German sector of the mountain. The pink structure at the top is the guarda’s house (casilla), the grey and blue slides are the loading bays (buzones). Photo taken by the author.

Overall, there are important trends reflected in the survey data I collected. Out of the 140 mines surveyed, 25 of them, which represents nearly 20% of the sample, had less than five people working in them. This means that a significant number of the mines are very small. About 40% had a workforce of over 20. And finally, just 12 mines, or nearly 10% of the mines, had workforces of over 100 workers. Importantly, the majority of mines had somewhere between one and 20 workers (60%).
Once you left the bus stop at Pailaviri and began walking around this became obvious. The mines varied significantly, and sometimes within mere steps from one another. For instance, I spoke to miners like Vicente Colque at the Constancia 2 mine. A socio from the large Villa Imperial cooperative, he was working alone, attempting to break ground for a new vein, while a llampira he had hired scoured the mine’s waste dump for anything viable. Vicente noted to me that just the year before he had been working 40 peons and had a compressor and a pneumatic drill (loaned to him by a nearby mill) but then prices fell and his vein disappeared. Now, he was struggling to pay his llampira 100Bs/day and was moonlighting as a carpenter and yatiri (healer).

Just metres above Constancia 2, the Santa Elena mine, operated by two socios from the Unificada cooperative, was employing 40 peons at the time. Santa Elena supplements its miners’ income by allowing a tourist agency to use their main bocamina as an exit, as it connects with another Unificada mine in the mountain. They also share their equipment with four other mines in this section.

And, just around the corner of the mountain, perhaps 50 or 100 meters higher, the Caracoles mine is being jointly operated by the 10 de Noviembre and Unificada cooperatives. There, the guarda told me that both cooperatives had approximately 75 socios running over 300 peones—that’s upwards of 750 workers in one mine.\footnote{Caracoles, due to its proximity to the city centre, is often used as the emblematic case for worker exploitation on the mountain. Due to this political context, is it likely that these figures are underestimated.}

One of
the peons working on shift at Caracoles at the time of my visit said that, depending on the season and prices, the numbers can swell, doubling the peon workforce. Caracoles, according to my survey, is the largest of the mines in the mountain, although of the 13 mines that have workforces over 100, it is likely that they all contract and expand significantly throughout the year. Caracoles, though, is the oldest and most emblematic of the mines of this size, having some work areas that may even have operated during colonial times.

Now, when we move from overall number of people to workforce composition, we can see some more interesting trends. Only 10% of the mines had workforces that were entirely run by socios, whereas nearly 85% of the mines had workforces with 50% or less composed of socios. Importantly, nearly 30% of all the mines surveyed were working with less than 10% of its workforce being socios. So, it appears that one overall trend that we can identify is that more mines are working with more peons than socios.

And, although my survey doesn’t reflect it, I hope that ethnographic moments throughout the rest of this text will. There is notable and important variability within each mine. Even if we take the example of Caracoles, there are working groups where 40 peons are working at one time, alongside working groups where a socio is working alone. This is a common feature of many of the large mines in the mountain and is a definite limitation of the methodology of this survey, which depends entirely on collecting data at the site of the bocamina, and not inside the mine.
2.1.3 Extraction Methods and Mechanization

Another important aspect of cooperative mining that has a direct impact on the way labour is organized and happens is whether the mines are mechanized and to what degree. Although I was unable to corroborate to what extent miners in each work area within a mine were deploying mechanized methods in their work, my survey provides for the potentiality of mechanization since I was looking for machines on the surface that enable kinds of mechanization.

As we saw in the introduction, small-scale miners are often referred to as backwards or primitive, working with little to no tools, and without rational planning. Throughout the nineteenth and twentieth century, miners in the Cerro Rico used primarily kinetic forms of energy to manipulate hand tools to mine the minerals they were seeking. The common phrase “a pico y palo” (by pickaxe and shovel)\(^{32}\) is often used to describe cooperative mine labour, and I met many socios who were still using primarily manual extraction methods, which formerly unionized miners in particular (but also members of the scientific community) referred to as primitive, simple and anti-progress (Barragan 2017b).

In general, mineralized vein-structure mine work revolves around advancing from the bocamina (the mine entrance) or from within a gallery to encounter a vein and this is done by combining methods of perforating the rock surface, introducing explosives, and

\(^{32}\) This is quite inaccurate, since a pickaxe is not the go-to tool of choice for cooperative miners.
then removing debris and ore. This process can rely entirely on kinetic energy through the manipulation of tools which, as we will see in Chapter 3, requires a deep sensory knowledge of the mine and its minerals.\(^{33}\) The basic toolkit requires a long (and heavy) iron chisel, a sledgehammer, a shovel, ammonium nitrate (to make dynamite sticks), fuses, and carry-bags\(^{34}\), along with personal protective equipment, which can vary from battery-operated headlamps, a helmet, rubber boots and perhaps a face covering like a bandana or respirator (uncommon), and other “inputs” like coca leaves and alcohol.\(^{35}\)

However, many parts of this process can be mechanized to reduce the amount of labour-time and human energy expended to complete the task.\(^{36}\) This is done by shifting the source of energy from the miner themself to another source.

\(^{33}\) For the purposes of this dissertation, I simplify the mining process to the extraction and transportation of minerals. There are other labours performed below the surface that can be essential to the process, depending on the individual circumstances of each mine. We can call these preparation or maintenance works. For example, depending on how deep the mine is, building a drainage system is very important in order to prevent flooding. This is particularly true for mines that come closer to the water table—but as a large number of mines are quite high up in the mountain, drainage systems are rudimentary if they exist at all (a syphon with a hose is sometimes used). Similarly, depending on how deep into the mountain the mine goes, developing a ventilation system is important (a common fix is opening a few ventilation shafts, but these take time, just like anything else—another solution is creating leaks in the air hoses if the mine has a diesel-powered air compressor). Developing a reinforcement system, which involves building supports to prevent cave-ins, is also important. And, finally, regular removal of the tunnels and galleries of waste rock is important to avoid toxic off-gassing or drainage, and also trip hazards. However, all of these labours are not directly linked to output and require investment that does not often have an immediate return, and so, it is common that miners don’t fully implement them (especially if strapped for cash) unless it is essential to the end goal of increasing output. This directly ties to the mines’ overall health and safety conditions (see also Francescone 2018), and was a common point of criticism on the part of former unionized miners at the Unificada.

\(^{34}\) During my fieldwork you could buy the “complete kit,” which included: a shovel, wheelbarrow, bar, and sledgehammer, as well as coveralls, a helmet and boots for 1100 Bs or just over 200 CAD at the time.

\(^{35}\) For the purposes of this thesis I will not trace all of these materials to their origins, but it is important to recognize that many of these are products of other separate industrialized processes which involve other workers, inputs, raw materials, and energy sources—for example the iron used to forge the barreno.

\(^{36}\) In the means of production these are the fixed capital elements (composed of dead labour), which are activated with living labour.
From the point of view of extraction, miners can add a diesel-powered hand drill\textsuperscript{37} or a pneumatic drill\textsuperscript{38} (plus its diesel-powered air compressor). The application of pneumatic drills is particularly significant in terms of labour time and thus overall energy expended—using a sledge and a bar the process can take around four to six hours per dynamite hole (see Illustration 8). With a pneumatic drill, I observed this process to take a mere few minutes per hole. This is significant since miners may need to drill between six and 20 holes in preparation for a blast (see also Ferrufino et. al 2011); the pneumatic drill thereby reduces the time to prepare for a blast from several days to less than an hour and increases the number of blasts they can complete per week.

\textsuperscript{37} According to miners, depending on the brand and the drilling capacity, new hand drills could be purchased for 1,000 to 2,000 USD, whereas a used one might cost around 750 USD. I do not have data about hand drill efficiency but miners told me they were less powerful than pneumatic drills.

\textsuperscript{38} Pneumatic drills, since they are much larger and have more power capacity were also more expensive, ranging from 2,500 to 5,000 USD.
Illustration 10: Burro working “a pulso” in the Candelaria mine. In his hand he holds his large chisel which he then repeatedly hits with a sledgehammer, not visible in this photo. Photo taken by the author.

From the point of view of transportation, modifications like having a rail system and railcar(s) or a wheelbarrow or wheel-chart facilitate the quantity of mineral and time it takes to get it out of the mine. For example, a loaded railcar can move up to two metric tons of material at a time, if pushed and guided by two peones (usually). This is significantly more than one miner can carry packed into sacks on their back, or in a loaded wheelbarrow. Although it is also possible for miners to use a diesel-powered tractor to pull several railcars at once, I only saw this being used at the cooperative mines in nearby Porco. In Potosí, all the railcars or wheel carts I observed still required kinetic energy. Working groups could also add a mechanical winch pulley system which could be diesel or hand-powered and, when operational, facilitates the movement of the materials between working areas at different levels inside the mine, again replacing the need for a miner to carry that material on their back up and down ladders.

Finally, exterior transportation equipment like diesel-powered excavators and bulldozers (see Illustration 9) can facilitate moving larger quantities of ore and loading it more quickly and in larger quantities onto the dump trucks, which then transported the ore to the mills. These motorized vehicles replace the labour of loaders who, using

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39 Many of the mines in the Pailaviri section of the mountain had rail systems and rail carts installed by Unificada since they formed part of the COMIBOL’s operations in Potosí. When these mines were turned over to the Cooperative sector following its dismantling in 1985, they had to pay a debt for these machines. Many of these debts were forgiven when the sector argued that they were not in the financial position to pay for them. This enabled those cooperatives who were granted those work areas an advantage over others.
wheelbarrows, cart material onto the dump trucks from the exterior storage loading docks or piles.

Illustration 11: Multiple diesel-powered backhoes move ore from piles coming out of the mine into the box bed of waiting dump trucks. Mine in the Roberto sector. Photo taken by the author.

Of course, any elements of this kind require an investment of capital that can be substantial, and miners often complained that they were simply out of reach. As such, often the overarching cooperative to which an individual socio belongs, or some very large mine sections within a cooperative put up the upfront capital for these more substantial investments. For example, I attended an anniversary celebration at Rosario Bajo, a mine of the Unificada Cooperative, and the mine was given a new diesel-powered air compressor by their cooperative. Rosario then rented the air compressor to the neighbouring mine of the same cooperative, and socios there were forced to work at night to accommodate the schedules of the more lucrative mine to have access to the air
Some miners couldn’t afford to rent the air compressor and preferred to drill by hand. In other cases, wealthy socios or a group of wealthy socios will buy these machines at one mine—this was particularly the case, I was told, with mines at the back of the mountain in the Roberto section. Finally, mills and mine investors (some salaried engineers and employees from the Manquiri mining company) would lend out (the mills would call this *prestar*—lend, but in reality, it was more like a rental arrangement) compressors to a desperate socio to secure mill feed, thus subordinating that miner to less-favourable buying prices. The need for significant amounts of capital to make these kinds of investments puts socios or cooperatives with funds at a clear advantage over others.

As we can see from Table 1, at the level of all the mines surveyed it was evident that a significant portion of mines had air compressors (nearly 70%), suggesting that at least some of the areas within the mines were working with pneumatic drills and a handful of more mines had rail systems and cars. Perhaps more significant, though, are the nearly 20 mines with no level of visible mechanization, making the only possibility for mechanized work diesel-powered hand drills, whereas a few mines (3) had motorized surface equipment like excavators and shovels. This suggests a huge variation between mines.

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40 Socios at the neighbouring mine, Candelaria, were frustrated by this gift since, for their anniversary (which I also attended) they were only given some wheelbarrows and shovels. Candelaria has been suffering for several years with diminishing grades, whereas Rosario had been expanding.
Table 1: Potential Mechanization at Cooperative Mines on Cerro Rico de Potosí

<table>
<thead>
<tr>
<th>Survey Data 2016-2017</th>
<th>Mines Cerro Rico de Potosí (Potential* Mechanization)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of mines visited</td>
<td>140</td>
</tr>
<tr>
<td>Number of mines w data</td>
<td>129</td>
</tr>
<tr>
<td>Number of mines w motorized excavators/shovels</td>
<td>3</td>
</tr>
<tr>
<td>Number of mines with air compressors</td>
<td>87</td>
</tr>
<tr>
<td>Number of mines with power generators</td>
<td>18</td>
</tr>
<tr>
<td>Number of mines with a rail system and cars</td>
<td>90</td>
</tr>
<tr>
<td>Number of mines with no visible mechanization</td>
<td>19</td>
</tr>
</tbody>
</table>

If we cross this data with total workforce and workforce composition, we can start to see some interesting trends (Table 2). Looking at the smallest mines, that is, mines with workforces of less than five miners, we can see that—perhaps unsurprisingly—very few of these mines had access to fossil-fuel powered machines and rail systems. Twenty-five mines employed only 79 people, which meant on average three workers per mine. None had power generators, none had excavators or shovels, and only six of the 25 mines had compressors. The average number of miners per mine is three (1.8 peons) and if we look at workforce composition at these mines, 58% of the workforce were peons.
Table 2: Mechanization at mines with less than five workers

<table>
<thead>
<tr>
<th>SURVEY DATA 2016-2017</th>
<th>Mines Cerro Rico de Potosí (workforce less than 5)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>#</td>
</tr>
<tr>
<td>Number of mines</td>
<td>25</td>
</tr>
<tr>
<td>Number of partners</td>
<td>33</td>
</tr>
<tr>
<td>Number of workers</td>
<td>46</td>
</tr>
<tr>
<td>Average workers/partner ratio</td>
<td>58%</td>
</tr>
<tr>
<td>Number of mines with air compressors</td>
<td>6</td>
</tr>
<tr>
<td>Number of mines with power generators</td>
<td>0</td>
</tr>
<tr>
<td>Number of mines with a rail system and cars</td>
<td>8</td>
</tr>
<tr>
<td>Number of mines w motorized excavators/shovels</td>
<td>0</td>
</tr>
</tbody>
</table>

If we compare this data to the larger mines, mines with workforces of over a hundred, the trend is the opposite (See Table 3). Of these 12 mines, 100% of them had air compressors and rail systems, 50% of them had power generators, and 25% of them had surface vehicles. It is likely that having a rail system or equivalent is necessary to accompany the air compressors, since, as we just saw above, much more material can be blasted out, and thus would need to be swiftly moved out. Otherwise, we can imagine a glut of material piling up inside the mine, making it more challenging to complete tasks, thereby rendering any improvements gained by deploying a pneumatic drill redundant.
The average number of workers (total workforce) per mine was 245 (181 peons per mine) and if we look at workforce composition, 75% of the workforce were peons. In the case of the three mines with significant investment in fixed capital (the shovels and excavators), 78% of their workforce are peons, with one mine employing peons entirely. This shows that as mines incorporate larger capital investments, there is a tendency for the waged-labour workforce to increase, and in the final case, totally replace the socio workforce.

If, for example, the bulk of the labour force and time being spent within the mine is simply moving mineral in and out of the mine (since drilling time has been displaced with the addition of pneumatic drills) then we can also assume that the bulk of the labour needed would be labour to move that material out of the mine and onto the dump trucks. This could account for these higher levels of peon workforces.
Table 3: Mechanization at mines with more than 100 workers

<table>
<thead>
<tr>
<th>Survey Data 2016-2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mines Cerro Rico de Potosí (workforce greater than 100)</td>
</tr>
<tr>
<td><strong>Number of mines</strong></td>
</tr>
<tr>
<td><strong>Number of partners</strong></td>
</tr>
<tr>
<td><strong>Number of workers</strong></td>
</tr>
<tr>
<td><strong>Average workers/partner ratio</strong></td>
</tr>
<tr>
<td><strong>Number of mines with air compressors</strong></td>
</tr>
<tr>
<td><strong>Number of mines with power generators</strong></td>
</tr>
<tr>
<td><strong>Number of mines with a rail system and cars</strong></td>
</tr>
<tr>
<td><strong>Number of mines w motorized excavators/shovels</strong></td>
</tr>
</tbody>
</table>

It seems then that there is a relationship between the access and availability of machines and the deployment of wage-labour. If we return to my earlier comments about the big shift between working “a pulso” and working with a pneumatic drill, it seems necessary that with the addition of air compressors (and one can assume pneumatic drills) we are significantly increasing the rate at which material can potentially be moved out of the mine. That would subsequently imply the need for more miners to move those materials in and out, especially in the event that there are no rail systems or other means of transportation that could keep up with the ore coming out. Miners constantly told me that
minerals couldn’t just sit around inside their mines. Since work areas are small and congested, there isn’t much room for minerals to simply pile up, and if it were piling up it would mean less access to workable areas, and even in some cases, a threat to miners’ health. It is beneficial to get minerals out as soon as they are separated from the rock. As we will see in Chapter 3, this structure also implies a change in the division of labour at the level of the working group, since more labourers are needed for moving mineral out and onto trucks than are needed for prospecting, developing, and drilling.

Something important to note here that is not necessarily reflected in the data is the importance of scale between these two mines with respect to the peon workforce. Given in the first instance where many of the small mines were only employing one or two peons per socio, that generally meant that the socios themselves were working alongside their waged-labourers and in many cases, it meant that those peones were apprenticing to become miners where possible. Sometimes those peones were family members of the socio who was working the area, which also changed the remunerative relationship (sometimes they were not paid at all). The small nature of the working groups, as we will see later in Chapters 2 and 3, was important for changing the way peon labour was experienced. On the other hand, in working groups where many more peons were working, it was less likely to have a socio working the deposit, with their labour often being replaced by segundas manos. That distance is important for the same reasons alluded to above, and more, which we will turn to in the following chapters.
Finally, the significance of this discussion is relevant when we consider the volatile nature of mineral market prices. When economic conditions are most prosperous, cooperatives contract peons to scale up their operations by increasing throughput where possible (Francescone and Diaz 2013, Michard 2008). This implies that as mineral prices increase, the number of partners in the cooperative does not necessarily need to increase as much as the size of the waged-labour force, which mitigates to some extent the risk the cooperative takes on. Then when prices fall, they are able to offload the risk onto those same workers (Devisscher 2008; PNUD 2005). But as Absi also notes, it is during these times of broader economic crisis that their ranks also swell, if not proportionally, with unemployed people trying to try their “luck” in the mines. In this way, they don’t necessarily offer subsistence, but the chance at subsistence and so much more in times of crisis (Absi 2010).

This structural tendency for mines, where economically feasible, to increase the capitalization of their mines was directly linked to the deposits they are working, to which we will now turn.

2.1.4 The Deposits

At present, cooperative miners mine for what is popularly referred to as “complejo” or “polymetallics” a mineralized vein-bearing ore that contains some combination of zinc/silver/lead/tin which are then processed by third-party mills in the city and exported as slightly-more-pure although still low-quality concentrates to refineries primarily in Asia (see Francescone 2019). The mining of polymetallics coincided with the privatization of the COMIBOL in Potosí and marked a historic turning point in the
mineral economy in the city which, since the turn of the century, had been primarily centred on underground tin deposit exploitation of rich, wide vein structures using blockcaving methods (in the case of the Unificada) alongside similarities in the methods we see today with the cooperative sector. The shift to polymetallics was made possible in part thanks to climbing prices for base minerals important for industrial processes (zinc, lead, tin). Silver also benefited from these price increases due to its uses in industry but also in bullion. As Bolivian researcher Vladimir Diaz Cuellar notes (2017) the MAS government’s terms coincided with a historic boom in mineral production, not only for the usual suspects, tin and silver, but for base metals of all kinds. Thanks primarily to the installation of the gigantic San Cristobal mine, but also due to an expansion in cooperative production, Bolivia became a relevant global producer of zinc and lead (see Figure 2). Although higher prices compensated for the overall falling grade quality of the ores, this had a direct and important impact on the way mining would be carried out henceforth on the mountain. Miners were forced to reorganize their systems of production, which had previously focused on vein-pursuit of richer ores to production methods that prioritized volume (quantity) over purity (Madrid Lara 2004, 36).
With the arrival of cyanide leaching technology to Bolivia in the nineties, cooperative miners have also recently begun mining for oxides. Oxides, which are found roughly between 4,400 m and the peak (4,700 m), are the eroded remains of the once intensely rich summit of the mountain, containing disseminated silver of relatively higher grade than what is found in the polymetallic deposits. The oxidized material is what gives the mountain’s peak its notorious red hue. It is also the most unstable region of the mountain. Given its erosive nature, the materials are loose, making it prone to cave-ins, landslides, and collapses as work advances. As such, mining activities above 4,400 m have been prohibited via Supreme Decree (see Chapter 6) although many mines continue to operate, albeit under apparently much more controlled conditions (prohibition of dynamite or pneumatic drills, strict production quotas (torna guia), etc.). As I will discuss in Chapter
4, oxides mining is very different from polymetallic mining and those differences have contributed to a gamut of socio-political changes.

There are also materials no longer mined by the cooperatives themselves, but which comprise a relatively larger portion of the total output of the mountain’s resources. Aside from the oxides and polymetallics, there are also the “pallacos,” a superficial mineralized formation containing disseminated silver that form a cape on the mountain’s flanks (See Bartos 2000). Prior to the application of silver heap leaching, some pallacos were mined by cooperative miners for their tin, but that ceased as the grades decreased and the price of tin dropped. Since this formation is also prone to erosion, the pallacos can be found at the mountain’s lower altitudes (in general with the deepest deposits sitting towards its base) but also creep into and above the 4 400 m zone. Some of these deposits are up to 50 m deep. As such, some of Manquiri’s operations are literally across the street from some neighbourhoods closest to the mountain. The area of Sucumayu was mined quite extensively by the company, and some of those operations meant that rainwater and runoff mixed and flooded the streets of these upper neighbourhoods.

And finally, there are the material remnants of the dead labour/past labour of former mining operations, the sucus and desmontes. 41Sucus are the tailings from previous tin-

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41Marx’s conception of the commodity-as-raw-material also always included an element of what he referred to as “past labour” (in Capital) or “dead labour” (in Grundrisse). Past labour/dead labour recognized the social character of labour which had gone into producing the previous commodities to be consumed productively as “raw materials,” which blended or disappeared in the new product. It contributes, with its activation through living labour, to the valorization of commodities (see Marx 1990). Capitalists always benefited, especially with raw material for industrial processes, from the dead labour already embodied in the object. It wasn’t, then, simply exchange that created value but the embodied labour within each commodity, which, when combined with living labour, contributed to producing new value.
washing small-scale cooperative operations, and desmontes are the now sedimented remnants of tailings of previously uneconomical silver production from the colonial and republican periods.

It is important to note that cooperative miners do not produce refined metal from any of these deposits. Unlike during the early colonial period when refining happened using Indigenous methods and wind power (the famous huayrachinas) (Bakewell 2008, Robbins 2011), and prior to 1985 when the cooperative production was heavily oriented around richer tin deposits and cooperative miners could complete some further processing and refining, the change to polymetallic and oxides has meant that miners’ work is relegated solely to the realm of extraction. Although some purification happens at the mine site, it is minimal, which has represented a big shift in miners’ skills which, from the perspective of refining, have been totally rendered incapable of matching the current technological trends (see Chapter 4). In that way they are not able to participate meaningfully in any downstream processes, which are completely dominated by foreign transnational companies and which re-process and refine their production for export to foreign markets.

2.2 Linking the Visible to the Invisible

..one of the problems with the most difficult of solutions is excess labour…confronted with the impossibility of controlling labour costs which, in the last few years have exceeded 60% of the total operative costs we were forced to find other sources of employment which would permit the displacement of miners, without harming them or COMIBOL. In this way, starting in 1965, we have rationalized the workforce within cooperatives that already existed, and new ones were formed, made up with the excess workforce displaced from many of the companies.

COMIBOL, Annual Report, 1967
The Cerro Rico de Potosí was the first mining centre in all of Bolivia to have its cooperatives formally recognized at the turn of the twentieth century and it is considered to be the birthplace of the cooperative-mining model. Although often referred to as a sector in and of itself, cooperatives and their predecessors emerged alongside large-scale mining operations.

During the colonial period, small groups of skilled miners appropriating the term *kajchas* would enter mines of the Cerro Rico on the weekends to appropriate the fruits of their labour for themselves (Absi 2005b, Tandeter 1992).42 Following independence, these kajchas continued to work on deposits that had been abandoned by mining capitals. Once large-scale industry returned to commence its Industrial Revolution at the hands of Hoschchild and others, miners flooded to Potosí to work in the mines and mills, some of whom ended up opening new mines and working tailings parallel to the large-scale operations (Absi and Pavez 2015, Barragan 2017b). As the Great Depression sent ripple effects across the globe, this provoked massive layoffs at the mines in Potosí and across the country. These displaced workers formed unions and began working peripheral tin deposits themselves (selling their production back to the larger companies working the mountain), eventually becoming legally recognized as “cooperatives” between the 40s and 50s (Anavi 1976, 5, Barragan 2017b).43 Cooperatives, then, emerged in tandem with

42 For the etymological exploration of this term see Absi 2005b.
43 According to Antonio Alurrade (1973), the first mining cooperative to form officially in all of Bolivia was the “Ckacchas Libres de Potosí” in 1939 (248), but work area maps from the General Directory of Mines from 1932 show that three cooperatives and three unions (free unions formed by displaced workers) were mining areas by this time (UNI-036, Plano 4) in Potosí.
private industrial mining companies and continued to work alongside the state-mining company COMIBOL following the nationalization of those private mines in 1952. Between 1953 and 1956, employment at COMIBOL mines swelled from 29,000 to 36,000 miners (Godoy 1985). But by the 1960s the US-Imposed Triangular Plan policies “rationalized” the COMIBOL due to increasing production costs. During the ebb and flow of market crises following the 1952 revolution, mines, and areas within a COMIBOL mine area, began to be contracted out on Lease Agreements to newly displaced workers who formed cooperatives in an attempt to quell the economic and social impacts of depleting reserves and market decline (Poveda 2014). These displaced workers began organizing cooperatives to subsist, scraping away at the tailings, slag, and other leftovers discarded from previous private investments, or alongside salaried workers in COMIBOL mines. According to the National Federation of Mining Cooperatives (FENCOMIN, as cited in Widerkehr 1980: 154), by 1970 there were 20,000 cooperative miners operating in Bolivia, alongside the 25,500 miners employed by the Comibol (Gillis 1982). At the EMCUP in Potosí, cooperative production formed an important part of the mill feed for the Velarde and Pailaviri mills until its dismantling in 1985 (Widerkehr 1980). This is important, since the commonly held understanding of how cooperative miners emerged is through the privatization of the COMIBOL. Yet, at least in the case of the Cerro Rico de Potosí, cooperatives were already well-established and heavily depended on by COMIBOL for mill-feed many years prior to its privatization. As we can see from the opening quote of this section, COMIBOL became more and more dependent on the contracted-out labours of the cooperative sector to keep afloat—it was built into its productive structure early on. Within Bolivia, and more
broadly with respect to the ASM sector in general, cooperatives are considered to act as an absorber of superfluous employment—it provides the opportunity of economic subsistence for newcomers from the countryside, or for workers facing unexpected unemployment to make ends meet. As anthropologist Pascale Absi notes for the case of cooperatives in Bolivia, not only did they serve as an “escape valve” for companies in times of crisis to offload workers, but they also made it possible for their mills to benefit from peripheral deposits at moments when ores were found to be depleting (Absi 2005b, 21).

But cooperatives became more exposed to and dependent on a wider range of large-scale companies following COMIBOL’s privatization. Part of the broader Nationalist project of the MNR government following the nationalization of the mines was to—reflecting ongoing discussions of the time regarding resource dependency—develop a monopoly for the state in terms of downstream processing and commercialization. This meant that most of the tin extracted from the mines across the country, including the Cerro Rico, was sold to the Central Mining Bank (BAMIN) or to the Vinto smelter (Ruiz González 1980). With the aggressive neoliberalization of the mining sector in the eighties, the BAMIN was dismantled, and commercialization was “liberalized” (Villalobos 1989). Today, not only is there a fully operational transnational mining company operating alongside small-scale miners around the mountain, but since the nineties, an extensively developed mineral market, which connects cooperative miners to small-scale buyers, local mills (more than 30!), and multinational commodity traders, has exploded (Ferrufino et. al 2008, Francescone 2019). Cooperative miners in the Cerro Rico aren’t just structurally
connected to transnational mining interests, but they work directly alongside one another and sometimes even atop another.

Analyses about the Bolivian cooperative sector have tended to focus on the sector as distinct from the Large Scale mining sector, not only in terms of levels of mechanization and capitalization, formality, tributary payments and labour force, but also in terms of physical space. It is assumed that cooperatives work on peripheral deposits that have been abandoned by large-scale industry since they are considered to no longer be profitable (Absi 2005b, Michard 2008, Poveda 2014; cf. Francescone 2015, Widerkehr 1980). But, as we have just seen, large-scale operations have always operated on the Cerro Rico de Potosí and cooperative miners today are all but isolated from large-scale commercializers and producers. Part of this stems from, at least partly, development discourse about the Artisanal and Small-Scale mining (ASM) sector more broadly, which highlights both the sector’s apparent “informality” in opposition to large-scale industry, which is apparently anything but. The World Bank (2013) succinctly sums up this characterization: “the informal nature and on the whole un-mechanized operation generally results in low productivity, the sector represents an important livelihood and income source for the poverty affected local population. It ensures the existence for millions of families in rural areas of developing countries.” Despite having legal title to the concessions that they work; cooperatives are still referred to along these lines and assumed to work at mines far away from foreign investors. And, as I noted at the beginning of this chapter, it was the research on cooperatives, not the transnational mining sectors, that received significant attention in the media and political debates over the past few years. Mining cooperatives,
and due to their historical importance, those on the Cerro Rico de Potosí, have come to represent the face of mining in Bolivia. As we just saw in the previous sections, the fact that the mines still demonstrate significant variability, and are completely visible to onlookers from the city below, likely contributes to the visibilization of the sector, reinforcing the stereotypical characterizations. As Hart noted in revising the concept of “informal economy” (1973) in 1985, “the informal economy does not exist in any empirical sense: it is a way of contrasting some phenomena with what we imagine constitutes the orthodox core of our own economy.” The idea of cooperatives representing informality in the mining sector only works in comparison to ideals of “formal” mining. Keeping the discussion centred on cooperatives in the Cerro Rico serves to keep the operations of the transnational mining companies invisible. It also assumes that the two are not related, and that neither has an impact on the other’s operations.

Despite its relative invisibility in accounts of contemporary mining in Potosí—including anthropological (see Absi 2005b, 2010, cf. Absi 2005a), contemporary historical (see Serrano Bravo), economic (Poveda 2014, cf. Nogales Vera and Collque Arrieta 2014) and journalistic discussions—the Empresa Minera Manquiri (herein referred to as Manquiri)—this chapter will demonstrate that the operating subsidiary of transnational mining companies—is the most important productive actor in the city of Potosí.

Manquiri is currently the direct-owned subsidiary of a junior Canadian mining company, Andean Precious Metals. But for nine years (2008-2017), including during my fieldwork,
it was owned by one of the world’s largest primary silver producers, Coeur Mining (World Silver Institute 2017). In Potosí, the company has a two-stage operation. The first is mineral **production.** The company uses backhoes, excavators, graders, front-end loaders and dump trucks and standard open-pit mining methods (according to the Environmental Impact Assessment for the project (2004), without the use of dynamite) to move superficial mineral deposits and waste dumps from the mountain and surrounding hills to their plant for processing. According to the last technical report published by Coeur Mining in 2015, the company owned four excavators, four front-end loaders, five bulldozers, two compactors, one grader, and one backhoe (2015, 14). The company used these methods for mining pallacos, sucus, desmontes, and oxides on the mountain. If we remember from the previous section, it was rare to see cooperatives on the mountain with this kind of diesel-powered machinery, and where they did have them, they maybe had one or two. This means the company runs an extractive operation which has much more capital invested in fixed capital.

Alongside their direct extraction from the mountain, Manquiri also acts as a buyer (commercializer). The company makes purchases using spot-price buying techniques from cooperatives extracting oxides from their mines on the Cerro Rico and the surrounding rural mines. (AG Mining Investments 2020). All the labour deployed to extract and transport this ore for the company is done without any oversight on the part of the company, since these miners have no formal employment relationship with the company. This allows the company to benefit from underground production, without having to pay any of the overhead costs associated with a stable unionized workforce.
With respect to transportation, as we have just seen, the company contracts out those services to a third-party who provides the hauling equipment and the labour.

The second part of their operations is processing and refining, whereby the mineral is mixed and triturated to uniform size and then undergoes chemical processes with sodium cyanide (NaCN) on leach pads to extract and purify the silver from the mineralized ore. The Manquiri mill and processing plant is in the La Plata section of the mountain, furthest away from the city, and not visible to residents below (See Illustration 10). Access to the mill is guarded by security guards and I was stopped and questioned on multiple occasions while surveying the mines on this part of the mountain.

Manquiri’s refining process produces high-purity silver doré (99% silver 1% gold). It also produces (on par with current trends), high volumes of toxic waste, which are sent to the nearby liquified tailings pond and dry-stacked tailings facilities. To get the mill up and running, the company invested over 250 million dollars in its construction. The plant has the capacity to mill 5,500 tonnes of material per day.
According to the company, in 2017-2018 Coeur Mining had 278 employees working in Bolivia. Of those, 158 were unionized miners of the Sindicato de Trabajadores Mineros de la Empresa Minera S.A. and their labour relationship to the company was covered by a collective agreement (Coeur Mining 2018, 8). In official reporting, the company does not give details as to who is operating their surface operations, except to say that they hire a third-party contractor, who is also the proprietor of the 20-ton dump.

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44 On several occasions I requested the payroll records, and on several occasions, I was provided these records, which only included upper-level management and administrative staff.
45 The company does not publish a breakdown of rank and file versus administrative personnel, but we can calculate it since San Bartolome was the only of its mines covered by a collective agreement and the company published what percentage of its total workforce was covered by a collective agreement. The Empresa Minera Manquiri S.A. is only operational personnel and does not include administrative or managerial staff. It’s important to note that these were the only unionized miners of all of Coeur’s operations during this time period.
trucks which truck material back and forth to the mine (Coeur Mining 2015, 14). However, in an interview with Potosíno economists for a book published in 2008, the company claimed to have service contracts with 25-30 cooperative miners who were operating the exterior machinery (Ferrufino et. al, 154). It seems safe to assume, then, that the majority of those 158 workers work full-time in processing and refining at the company’s mill and not at the site of extraction—the other over 100 employees are administrative and managerial staff. The company, then, depends on the labour of others, a non-unionized workforce, to source the feed for its milling and refining operations. Once refined, the company exports the refined silver metal to a US-based refinery (ASAHI Refining) which smelts the doré to refine the gold “impurities” (AG Mining Investments 2020, 197) (See Figure 6).

By all accounts, Manquiri’s operations are industrial scale, which, on par with the industry, is able to process ores which, just a decade or two ago, were considered uneconomic and which continue to be outside the purview of the refining capacities of cooperative miners.
2.2.1 The Production Process. “Garbage Production” and Manquiri’s Strategic Position

When individual miners or working groups sell their complejo to either a buyer or a mill in the city, that complejo is sent to a mill for processing. Mills concentrate complejo first by combining production from several sources from several mines around the department. This is done to improve the overall grade of the concentrates being produced by mixing overall lower grade with higher-grade inputs. Then the complejo is submitted to the chemical separation process, which uses different chemicals depending on what is being “purified” (in the case of zinc, copper sulfate is commonly used in the mills in Potosí) in the flotation process. After flotation, what is left is a product called concentrado (concentrate), which results as a purer form of the dominant mineral, most commonly silver, zinc or tin (but it still contains by-products of the other minerals, but at lower percentages). That concentrate is then sold or exported directly to international traders or smelters, who will further purify it. I was told by mill operators that, although they have made substantial investments to build these processing facilities, the technology wasn’t sufficient enough to purify the “garbage” being produced by the cooperatives. Since the overall grade was low, the mills were simply exporting a purer, but still quite impure mineral to be refined again in (primarily) Asian refineries (see Figure 7).

46 As I have argued elsewhere (Francescone 2019), this mixing process contributes to the relative anonymity of the source of a particular batch of concentrate production. When I would ask mill operators where the feeds were from, they would often respond, “from many mines,” or they would give me a list of possible productive centres.
Figure 4: Simplified Polymetallics Commodity Chain in Potosí

The concentrates commodity chain in Potosí, according to those directly involved in it, operates within a difficult environment, given that miners and Bolivian mills are forced to compete against international capital. Foreign companies, according to mills, penalize mill owners for poor grade quality, and this, in turn, impacts the way mill owners and buyers further discount the production of miners from their mines. Producers having the most “impure” product are penalized based on the more secondary and tertiary mineral content their ore has. For example, miners who sold their complejo to a mill in the city were not often paid for the fourth mineral present in their lode—most were told they were paying a “penalty” for having lead in their lode, which meant they were only remunerated for two or three minerals.

But in the case of oxides, the story is slightly different. Cooperatives don’t have 30 mills to choose from when selling their production, since, according to mill owners themselves, the mills in the city do not have the technological capacity to process the disseminated silver content. Instead, they sell to Manquiri, which has the technological capacity to refine on site. This is significant since, unlike the concentrates leaving the mills in Potosí and heading for further processing in Asia, they have no more refining or transportation fees to pay. In theory what that means from the perspective of the seller is that they will
get better prices for oxides than for polymetallics. This was corroborated by miners working in oxides, who, although they were frustrated by the fact that Manquiri had a monopoly on commercializing, said that they were getting better prices than they had in the past.

As we have just seen, Manquiri’s mill has the capacity to produce 5,500 tons/day (depending on the time of feed) and has been processing between 4,500 and 5,500 tons/day since it commenced industrial scale production in 2008. Between 2008 and 2016 they milled over 13 million tonnes of ore and from that produced 53 million ounces of silver. On average per year, they mill approximately 1.5 million tonnes and from that produce about six million ounces of silver (Coeur Mining).

On the other hand, we don’t have disaggregated production data from the cooperatives operating on the mountain. Nor do we have a similar point of comparison in terms of mineral production, since miners are not producing pure silver. Instead, they produce complejo, an ore composed of three to four minerals. We can say, though, based on overall mine production in terms of tonnage, that cooperatives produced 2,000 tonnes of mineralized ore per day in 2021 (Página Siete, Sept 14, 2021). This data is like data obtained by Ferrufino et al. (157) in 2010, which noted overall production from the Cerro was almost 730,000 tonnes that year (1,900 tonnes/day). It seems accurate to say that the cooperatives on the mountain were producing around half of what Manquiri was processing per day—albeit with exponentially greater numbers of workers. From this perspective, somewhere between seven and 20,000 cooperatives are producing half of
what 158 unionized employees are for Manquiri, thanks to the application of diesel-powered machines.

We can calculate this crudely if we assume that all of the minerals being extracted by Manquiri are going to the mill, simply for the point of comparison. If we calculate the average production per cooperative miner per day assuming 15,000 cooperative miners, that comes to 0.13 tonnes per worker, compared to the 21 tonnes per worker at the Manquiri mill. If we follow the logic that as mining operations become more mechanized, more ore can be processed with a smaller workforce then, we can see that this rings true for Manquiri’s operations.

Now, we know that not all the cooperative production is being milled at Manquiri’s mill since it appears that the bulk of polymetallic production is still going to the city’s mills. But, a significant portion of cooperative production is serving as mill feed, since, at least for those cooperatives producing oxides, the ore is too impure for the current technological capacity at the city’s mills. In 2021, APM published that they are purchasing about 1,000 tonnes of oxides per day from cooperatives “in the Cerro Rico and surrounding rural area” (APM 2020, 58), and their website notes that 40% of current mill feed (over 2,000 tonnes) comes from cooperatives in the area. The company noted that this cooperative mill feed was important due to its higher-grade quality. As ore grades continue to dwindle in their pallaco reserves, cooperative production is mixed in with these diminishing grades to improve the overall output (Ibid). Manquiri’s operations then are, at least to some extent, driving oxide mining on the mountain since they...
providing a market for oxides sale where previously did not exist, and 2. because they themselves require the mill feed to make their operations economically viable.

It seems that Manquiri’s advantage is twofold with respect to cooperative production. On the one hand, with respect to extraction, its fossil-fuel machines increase the rate of extraction: they can move more ore with less people. Second, with respect to refining, the advantage lies first in the company’s ability to raise enough capital to invest in the construction of the mill and refining facilities on site. The refinery then gives them leverage over oxides producers to provide sufficient supply for their mill operations, which gives them control over what are otherwise untenable outcomes for the cooperative sector, including the direct export to smelters in the US. The mill is not only the only one capable of processing ore of this kind to this degree in Potosí, but in the entire country. The company is fully aware of this situation. According to a statement made by the company in 2021, this puts them in an “advantageous position” for buying cooperative production (Andean Precious Metals, 2021).

What is interesting though, from the point of the discussion of the informal-formal divide is how those characteristic distinctions break down when we look at how Manquiri is operating. From the perspective of labour practices for example, their extraction methods are arguably more rudimentary than those deployed by cooperatives, since they are merely scooping up material and loading it into their trucks—they are not using their senses to prospect, develop, and extract mineral from underground using a variety of

47 In fact, the company now sources ore from as far as Bolivia’s borders with Chile for its mill.
techniques. Second, with respect to notions of what is legal/illegal, there are also serious questions raised about the legality from the perspective of labour law in Bolivia regarding practices of outsourcing cooperative labour for a significant portion of their mill feed in order to reduce overhead costs. Further along these lines, as we will see in Chapter 6, the fact that they buy cooperative production at all raises questions about the terms of the contract they signed with COMIBOL, since San Bartolomé was not supposed to be “impacting the structure of the mountain.” Finally it seems that the company benefits from this complex disarray of mineral production in that it enables the invisibility they require to keep out of the ongoing public criticism with respect to the mountain’s crumbling summit.

Structurally, this is a snapshot of how mineral extraction and refining works on the Cerro Rico de Potosí. This reliance on other actors for processing, refining and commercialization means cooperative miners are directly connected in important ways to transnational mining companies and commercializers (Francescone 2018) and contributes to their disadvantaged and subordinate position with respect to the dynamics of international mineral markets often outside their realm of influence and control (Francescone 2019). Even if they could strike out spaces for building solidarity and alternatives to capital as the MAS administration purports in conceiving it as an integral part of the “plural economy,” they are so wound up in capitalist mineral market economies that those possibilities can only be limited to the mine site or working group. The “plural economy” that cooperative miners confront is an open-free market which
moves to the tempo of rhythms set by international mineral markets and transnational mining companies.

That being said, these structural constraints are constantly being met with the agentive forces of miners themselves. Recently, work has been done in Bolivia to speak back against the perceived backwardness of the “informal” economy. In La Economía Popular en Bolivia, Tassi, Hinojosa and Canaviri (2015) argue that the proliferation of the popular economy in Bolivia demonstrates not a threat to foreign investment but in fact a parallel economic space worthy of investigation. They demonstrate that Aymara traders, merchants, transportistas, and cooperative miners have become “economy makers” (Escobar 2001) able to “expand their sociopolitical structure” and the economy by exercising relative autonomy to conventional market practices and forces (Tassi 2016, 8). Canaviri Paco (2015a, 2015b) argues that Aymara cooperative miners in Northern La Paz exemplify the popular economy in Bolivia—their cosmological practices like the ch’alla and their closed sociopolitical structures which prioritize kinship have meant that they have been successful in becoming a “new elite” without having to make concessions to large mining companies. Rather than experiencing a process of “culture loss” (Turner 1995), those involved in the Aymara popular economy have demonstrated “a flexibility which challenges processes of social decomposition often associated with current processes of economic globalization (Tassi et. al 2015, 16).” As we will see in the next chapters, despite their overall subordinate position within this hierarchy of actors, miners are able to carve meaningful spaces for disobedience and power, but the extent to which
they are successful in “challenging processes of social decomposition” will be examined further in Chapter 4.
Chapter 3: Discipline and Time

3.1 Cooperatives and the Chains of Exploitation

On August 10, 2016, the cooperative mining sector in Bolivia commenced a nation-wide blockade of the major transportation highway hubs. They were protesting the Congressional approval of modifications to the Cooperative Law #356, which would permit the employees (in the case of mining cooperatives, peones) of cooperatives to unionize, a right which had up until this moment been denied due to cooperatives’ organizational structure. Law #823, which was approved on August 19 by President Evo Morales, states:

Single Disposition: In defense of the constitutional rights currently in effect, cooperatives will respect the union and labour rights of those associated members which includes pre-existing associates at the promulgation of this Law, as well as those who will constitute themselves in the future in the Public Services and Services sectors. (Gaceta Oficial de Bolivia 2018)

Despite the robust country-wide mobilizations, Morales pushed the legislation through, garnering support from the Bolivian Central Workers Union (Central Obrera Boliviana COB), thereby creating the impression that the cooperative mining sector did not have popular or public support for their demands. Morales insisted that miners “have the necessity to organize themselves to defend their rights, because they can’t return to those colonial and past times when organizations were condemned to extermination” (Erbol 2016). Alfredo Rada, the Vice Minister of Coordination with Social Movements and head of one of the MAS’ schools of political formation at the time, called the government’s legislative move “the greatest advance in labor rights in a decade” (Rada Velez 2016).
The government, arguing for the need to “clear the highways for transport” commenced an aggressive police-led “lift” of the blockades. Bolivian miners are no strangers to confronting the police during blockades, and historically miners were known for their use of dynamite against the police force to protect themselves during protests. What was significant, however, was that for the first time in the MAS presidency, the police opened fire on the blockades with live ammunition. As the conflict continued to escalate, the police arrested dozens of miners, and images of tear-gas-filled streets and burning tires began to flood national newspapers. On the first full day of mobilizations, 69 cooperative miners were detained by police and 38 police officers were taken hostage by the miners, with similar numbers reported by the Ombudsperson’s office the following day. After a brief recess in the conflict, while the sector waited on the government to dialogue the modifications, the conflict erupted again on August 23. August 25 a group of miners took the Vice Minister of the Interior, Rodolfo Illanes, hostage at the blockade at the Panduro locality following notification that three miners had now died because of bullet wounds. Enraged at the mounting deaths of miners, and informed that a fourth had been shot, a mob of miners acted spontaneously, beating Illanes to death with a miner’s helmet on this same day (Defensoría del Pueblo 2016). When all was said and done, five miners and Illanes were killed during the conflict, with another dozen miners wounded by live ammunition and over one hundred miners were arrested in connection with the mobilizations. As we saw in Chapter 1, starting in 2012 the public debate about the cooperative mining sector started moving quickly into heavily demonizing the sector. By 2016, those perspectives were sedimented and the government was able to take advantage
of the hegemonic understandings of the sector to repress the movement without any blowback from civil society.

Following the murder of Illanes, the leadership of the National Federation of Cooperative Miners (FENCOMIN) called a temporary lift on the blockades, which eventually resulted in miners retreating to their respective mining centres. As the smoke began to settle, the press and the government analyzed the conflict in terms of sheep being led to slaughter: ignorant peons had been herded to the blockades against their will (and own best interest) to fight for their bosses who were benefiting from their exploitation. Rada argued that the miners had been blackmailed by their “bourgeois bosses” who had apparently said to their peons, “if you do not mobilize for the government to take care of us then you will no longer have a job.” Their deception resulted in, “the leaders of the mining cooperative (who are usually the oldest partners) deceiving a social base by turning them into a group of henchmen.”

To retaliate, six days after the conflict erupted to disrepair, the government approved a series of five Supreme Decrees and various modifications to the Mining Law in response to the violent events which occurred in August and arrested ten miners in association with the murder of Illanes. Among the decrees were restrictions on the sale and purchase of dynamite (an essential input for the sector), increased bureaucratic

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48 The modifications to the Mining Law essentially repeated what had been established in the Supreme Decrees and were necessary to give them sufficient legal standing to modify the present legal legislation.
49 To this date, investigations which sought to establish responsibility for the death of the five miners at the level of the police force and State, have yet to produce results.
processes around financial reporting, revision and reversion of stagnant concessions, and a review and eventual cancellation of Joint-Venture agreements with private companies.

The final decree is the one I am most interested in analyzing in this chapter, since it became a central point of conversation between miners. Supreme Decree 2892, approved on September 1, 2016, stated:

Any person who lends their services to Mining Cooperatives as labourers is protected by the General Labour Law and associated labour legislation and can appeal as such to the Ministry of Labour for any labour law violations. Cooperatives are henceforth required to present payroll information for all employees who maintain a labour relationship with the cooperative. This documentation will be required of them upon presenting their production to SENARECOM for commercialization.

Supreme Decree 2892 legislated that workers who provided any sort of service to a productive cooperative must be recognized as employees of said cooperative. All mining cooperatives who employed peons or llampiras (day labourers) or segundas manos and guardas (contract) were required to initiate a process of formalization of their workforces which would then afford these workers recognition and rights under current Labour Legislation. On September 7, Vice President Alvaro Garcia Linera spoke directly to the conflict and what the government hoped to achieve with the implementation of this legislation. He proudly noted, “we have introduced, with these decrees, class struggle inside the cooperative sector.”

As we have just seen, peons or wageworkers now make up most miners in the Cerro Rico de Potosí, their numbers in the thousands. And, from a structural point of view, they are
paid a low wage, are not afforded health or pension benefits, and have no employment security. And, because of the state of the legislation and organization of cooperatives, up until 2016, they were not able to unionize. But, when I began talking to peons and socios during my fieldwork about the conflict, there appeared to be a consensus that they had, contrary to the government’s statements, participated in these mobilizations wholeheartedly against the government and were not in agreement about the legislative changes. They perceived them as a punishment more than a win.

Why then, when given the opportunity, would peons oppose their formalization and the chance to have permanent employment?

It is worth examining this conflict since it can reveal some of the priorities that cooperative miners have beyond, for example, their wage, or structural exploitation. Economic Historian Edward Palmer Thompson (1963) understood workers’ grievances as unfolding along a broad spectrum or field of issues which were not always exclusively related to questions of subsistence or wages. In referring to journeyman Cotton Spinner’s analysis of the changes in the character of capitalist exploitation, he lists commonly-held workers’ grievances at the time of the industrial revolution as: …the rise of a master-class without additional authority or obligations; the growing distance between master and man; the transparency of the exploitation at the source of their new wealth and power; the loss of status and above all of independence for the worker, his reduction total dependence on the master’s instruments of production: the partiality of the law; the disruption of the traditional family economy; the discipline, monotony, hours and
conditions of work; loss of leisure and amenities; the reduction of the man to the status of an “instrument” (202-203).

In this chapter I problematize the government’s assumption that cooperative miners were being deceived by their bosses and thus had no real stake in the protest or conflict at hand. This assumption implies that cooperative miners purposefully acted against their personal safety and deliberately put themselves in grave danger, some of whom, according to this logic, died in vain to protect a cause that was clearly against their own “class interests.” Given that the terms of engagement with this kind of argument are ideologically narrow, I hope to present a counter perspective of miners and their reflections and experiences with the structure of cooperative mining in Bolivia.

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50 It is not my objective here to falsify the government’s claim. It would be difficult in my mind to deny the structural economic and political hardships being faced by miners in the mines at the Cerro Rico de Potosí. But, the conflict in August 2016 produced a chain of learning experiences for me and altered my convictions, which, for the longest time, held that modifications would force a change that would be welcomed by peons and segundas manos. But, as I began to understand the sector as linked to broader actors beyond the extraction site, and how mining labour represented so much more than the act of extraction underground, my assumptions changed. I do, however, take issue with the paternalistic position that the government took with respect to the sector in arguing, in essence, that they could not possibly know what is best for themselves.
3.2  Work/Life Rhythms at the Mines in Potosí

Illustration 13: “Lamparita” in Bocamina a monthly magazine distributed State-run mining centres, COMIBOL 1965, 2

In “Time, Work Discipline and Industrial Capitalism,” Thompson (1966) explores the changes in time-sense in England with the rise of the industrial revolution. He demonstrates that pushes to standardize industrial time came not only from “the emergent division of labour and its supervision, but through bells and clocks, money incentives, sermons and schoolings, as well as the suppression of fairs and sports (1967, 90).” He demonstrates how struggles over work-life rhythms (the complex web of rituals, festivals, social gatherings, habits, task-oriented production) became, as conditions changed (and time became linked directly to productive efficiency), struggles over time itself.\(^5\)

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\(^5\) Time is one of the things I most struggle with in Bolivia. In all of its cities and for nearly all social events, and even some interviews, learning the \textit{hora boliviana} (Bolivian time) as many refer to it, is most difficult for gringos used to rigid time schedules—it literally produces a sort of ontological crisis. And it is, indeed, still a struggle for me, after over a decade of working and living in Bolivia. But I had always experienced time dissonance in social spaces, never really in productive or workspaces. When I was working in Cochabamba, it was generally understood you could be up to fifteen minutes late for your shift, but any time after that was generally frowned upon. On a daily basis in any of the large cities in the country, workers can be found running frantically to their offices since many are forced to “clock in” or swipe at the beginning of their shift. Any late arrivals are accumulated and docked from their monthly salaries. Even market women are consistent with their selling start times since the early movement of commuters heading to and from their offices makes “being on time” important for their sales as well. But for socializing, this was definitely not the case and I learned this the hard way: waiting three hours outside on a cold paceño night for friends to show up and then decide where to go out; suffering through a totally dried out meal I had prepared for people because no one showed up at the time I asked them to; or, thinking
The cartoon above shows, industrial mining operations require following industrial time without fail. Depicted in the image is a unionized miner with his pneumatic drill on the way to his shift. Hearing shouting about a soccer game going on he is stopped on his way to work, and, taking his drill, he bores a hole in through the wall, stopping to watch the game. This cartoon was placed in a section of the magazine insisting on punctuality and discipline as key to maintaining the State company profitable. On several occasions former unionized miners who worked for the COMIBOL during these times shared their experiences about learning discipline within their union, and how fellow comrades would take up the helm in ensuring that their colleagues arrived to work on time, sober, and ready to work.

During my time in the city and at the mines in Potosí, industrial time sense had not fully consolidated itself at the mines on the mountain. Peter Gose, in *Deathly Waters and Hungry Mountains* (1994), demonstrates the ways that work rhythms (albeit not industrial) are integrally intertwined with rituals and other community happenings and serve to restrain or reinforce a sense of collectivity in the agricultural plots in the town of Huaquirca, Peru. In what follows, I explore the work-life rhythms of cooperative miners in Potosí. I demonstrate how, through the *pijcheo* (a ritual practice of chewing coca and ruminating that occurs individually or among people) and at points throughout the year, miners make decisions to “be busy but not working.” During my time in the city and at the mines in Potosí, I came to see the importance of maintaining certain activities

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no one liked me because no one showed up until four hours after the planned start time of a party I had organized were all reminders that I had to adjust my way of life to the “Hora Boliviana”.

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peripheral to productive activity as part of cooperative-miner’s assertion of a work-life rhythm against a particular model of time which sought to monopolize workers’ productive lives at the mines. These often-unpredictable work-life rhythms serve to produce a sense of belonging within mines and in the mining neighbourhoods, which miners evaluate as positive for their livelihoods.

When arriving in Potosí, I began asking market women what time to go up to the mines to “catch miners” before they headed into work, and many responded that sometime between 7:30 and 9:30 a.m. miners would be heading into work. When I started walking around the mines though, I noticed I would constantly run into miners who were arriving what I perceived as being “very late” to their mines (between 10 a.m. and noon), and others would be heading out of the mines “very early” (11:30 a.m., for example). Or in other moments, I found myself alone and without anyone to talk to, not used to the work-life rhythms that informally guided miners’ presence at their mines.

3.2.1 El Pijcheo

“If we ran out of coca, then we would really have a revolution on our hands”
COMIBOL Administrator (1970s), San José Mines, Oruro
(Cited in Nash 1993, 200)

The Pijcheo or acullico is the act of an individual or collective of people who chew coca; in Bolivia, miners also sometimes say masticar coca (literally chew coca), but
anthropologist Allison Spedding (2018), herself a coca producer in the Yungas region of Bolivia, describes the practice this way:

…although “chewing” is rather a misnomer: in fact, one selects leaves one by one and places them in the cheek until a good-sized wad has been built up. This is then held in place and sucked on to extract the juice, without actually chewing it. The juice contains appreciable quantities of vitamin A as well as a variety of alkaloids, and calcium from the lejía (a paste of vegetable ashes) which, in combination with saliva, releases the active principles of the leaf…It is also indispensable in the mines, where all underground workers chew it—above all as part of the cult of the Tío, or spirit owner of the minerals, but also because the coca wad in the mouth acts as a filter for dust and foul air…Coca provides an aid to concentration and gives stamina in all forms of work…It is consumed socially between friends and visitors in the same way as tea or coffee in other societies—people say, “Come round for a chew of coca.” It is also consumed at festivals and parties, where it provides an excellent accompaniment to drinks and cigarettes and ameliorates the often-fatal effects of cane-alcohol cocktails and home-brewed maize beer. The coca field can thus be seen as a social nexus that unites all these diverse elements and activities: it is a total social fact. (590-591)

The various uses and meanings attributed to coca for Andean communities have been well documented in the ethnographic literature. Catherine Allen’s (2002) seminal ethnography, “The Hold Life Has,” demonstrates the centrality of coca chewing for the production and reproduction of rural community life (runa life) in Colquepata, and Olivia Harris (2000) describes in detail the centrality of the coca leaf and the acullico/pijcheo in every day gatherings among the Laymi in Northern Potosí. As for the mines, Anthropologist June Nash (1979) identifies the centrality of the ritual practice of the pijcheo as an important site for garnering collective political consciousness and cohesion among groups of workers before beginning to labour in the mines every day. Bolivian Siglo XX miner and novelist Agusto Leon Ayma (2010) writes how the act of chewing coca in the mornings before a shift would give workers time to complain about their health and safety, and engineering practices in the State-run mine during the seventies, and Lorgio Orellana Aillon (1998), demonstrates in his study of the Amayapampa
massacre how the company’s attempt to eliminate the pijcheo (in an effort to rationalize production) pushed workers to an uprising at the mines, the police repression of which resulted in the death of four miners and dozens more injured (12-15). Sociologist Canaviri Paco (2015) notes that for cooperative miners at the cooperative gold mines in Northern La Paz, part of the working day includes a morning pijcheo, central to commencing the day off right. Finally, at the mines in the Cerro Rico de Potosi, Pascale Absi (2005b) describes the ritual importance of coca in individual and collective rites at the mines in Cerro Rico. She demonstrates how the pijcheo is not only an important moment for collecting one’s thoughts or sharing a laugh with fellow miners, but that the leaves themselves are central to ritual offerings to the Tios of the mines, important for combating illness, and a health and safety mechanism miners use to protect their lungs from dust thrown up during the drilling process (see also Tapia Montecinos 2010, 72).

Coca continues to be a staple for miners across all the mines I surveyed on the mountain. Before heading to any one mine, I would stop at the market in the Calvario Minero and buy a few small bags of coca. Priced at five bolivianos for a bag that would last for one shift, miners could always be seen clutching a bright green plastic bag before heading into the mine. Coca and bread for the mine dogs served as my offerings when I travelled from mine site to mine site. And, although I was aware of coca as an important element for socializing, I learned that it also had relevance for miner’s time sense.

One morning, a couple of days after Carnaval Minero, Chela and I were back at our mine survey. When we finally got to the Santa Maria mine in Sucumayu it was nearly ten in
the morning. I was frustrated: it had taken us a lot longer to get there since we had struggled to navigate the terrain of the mountain, which was unstable due to a recent rainfall a few days earlier. I was worried and had nearly turned back, suspecting that everyone would now be in their mines working and we would have walked nearly two hours in vain. I wandered to what looked to be a mine we hadn’t visited before. It was a simple one-room adobe construction, but the lock wasn’t on the door, and the dogs didn’t seem that worried that we were approaching. “Maybe someone is inside,” Chela stated. “Maybe they are drinking… we should probably go back before they notice we are here.”

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52 When it rains, the hardened sediment mixed with mine waste is disrupted by water runoff which pours down the mountain. When it dries, the rocks and debris which were carried down with the rain take a while to solidify into the surface again. As we saw in “Collapse,” miners constantly express concerns about heavy rainfalls and the stability of their work areas.

53 Chela had several violent run-ins with inebriated miners while living at Candelaria. She now cuts her hair very short, and wears track pants and big sweaters like the miners themselves. She says, “by dressing like a machito I don’t get bothered anymore.” But she still was often reluctant to approach a mine if miners were drinking, except of course, if it was in her father’s section of the mountain. There, she argued, no one would touch her, afraid that he father would “kill them” if he heard about it. Here in Sucumayu though, and in other sectors of the mountain, she felt like her anonymity as a risk and we always went together.
Illustration 14: Pijcheando coca with Mario, Silvio, and Valeria at Copacabanita, Compadres 2017. Photo taken by the author.

I rummaged in my pack for some bread for the dogs, and the littlest one started yapping immediately at the sound of the rustling plastic bag. A man poked his head out of the hut. “Kris?” he said looking our way, “what are you doing all the way up here?” I recognized him from carnival but couldn’t remember his name. Judging from my hesitation, he exclaimed, “It’s me, Omar, you danced with us this weekend! Come in, come in! We are chewing coca!” Omar pushed open the corrugated tin door of the hut and inside were other miners. They didn’t look ready to work, they weren’t wearing their mineralized work clothes. Omar introduced me as his friend, the *gringuita*, who had danced as a Chola Potosína with them this weekend in carnival. I smiled at Chela. What were the odds that the first mine we would hit this morning was a Central Mixto mine? It was nice that we were running into people we knew in a sector of the mountain we hadn’t been to before, which wasn’t always our experience. The guys cleared off some space atop a bag
of mineral for Chela and made some space for me on a plank of wood next to another miner named Johnny. I grabbed a small plastic leaf-green bag of coca out of my pack and started passing handfuls of coca around to everyone while Omar started offering us a swig of ethanol mixed with water. We listened as the guys chatted, sometimes asking us questions about Carnival, Chela’s dad’s mine, my research, and the survey. We drank capfuls of the alcohol as it went around the small room, the initial burning of the alcohol eventually substituted by its warming effects. They bragged about how many days they had been drunk and their thoughts on this year’s Carnival. They talked a bit about politics and Evo’s ignorance of Potosino issues. Before we knew it, it was noon and Chela was looking at her watch worried, “Kris,” she whispered, “I need to go, I have to help mom with the food before my dad gets out of the mine.” I looked at my phone, surprised by the time. “Oh no!” I exclaimed to the men, “I am so sorry, we have distracted you, and I’m sure you wanted to get to work today, especially because of all of the downtime during the festivities!” The guys laughed in unison. Omar quipped:

We will go in later, if we feel like it, and if not, we will come back tomorrow. We are so busy during Carnival that it’s hard to come to work! Rather, we are sorry we distracted you! You probably want to get your work done today, and now look, you are tipsy and are late to make lunch for your husband. He’s not going to be very happy with us, tell Don Vladi we are sorry!

Omar, Central Mixto, Mina Santa Maria [emphasis his]

At this mine, the Pijcheo continues to serve as a moment when miners would form bonds between one another. Breaks to chew coca leaves and chat and maybe have a few swigs of alcohol helped to solidify relationships of trust between comrades. It was also the most common point where I would find ample time to chat with miners without feeling like I was disrupting their workday. I would adjust myself to their schedules depending on
when miners wanted to go into the mine—and would just follow their cues. But “if the coca is good, and the chatter is good,” as another miner would say to me one day, our conversations could last several hours with someone eventually making the call, like Omar above, to call it a day, or get changed into their work clothes.

The Pijcheo has been well documented by Absi (2005b), Ayma (1989), and Nash (1979) as a critical moment of preparation to enter the mine, and thus commence the productive process underground. It was also used to recover energies, engage in banter, and just reflect (Garcia Linera 2014, Rodriguez Ostria 2014). Later in Chapter 5, I will return to the role of the pijcheo for ritual practices, the primary focus for analysis about coca. But in some instances, as was the case with Omar, the pijcheo is what is responsible for the men not going into the mine at all. Following our first pichjeo encounter, I returned to Omar’s mine on several occasions but never encountered him again. Other men who worked at adjoining mines, and even another socio who was working with him as equals, told me that Omar was working the “night shift” and that this concerned many of them, since there was no one to help him if something happened to him. According to Tomas, Omar’s son had taken ill, and his wife had a job working as a municipal cleaner, which meant that Omar had to stay home during the day to take care of their young boy. Omar’s claim that they would essentially work when they wanted best elucidated this for me, but my repeated failed attempts at meeting people where they were “supposed to be” at a pre-arranged time at their respective bocaminas, was perhaps a clearer signal of the generalized state of their irregular work schedules.
Absi (2005b) calls coca “the true work chronometer.” She argues that in the Cerro Rico de Potosí, “without watches, without references in the darkness of the mine… every shift, called a mita, coincides with the effect of the pijchu” (Ibid., 53). Miners recognize how long they should work at a particular task based on the effects the ball of coca in their mouths produced: the change in flavour and stimulative effects are perceived to diminish, thereby affecting their ability to work. When it wears off, it is time to start a new wad, which entails sitting, resting, chewing, and preparing for the next laborious task. Coca, then, represents not only a material measure of time between work tasks, but a certain measure of collective time spent outside of work. Coca and the pijcheo produce a life rhythm outside of the productive sphere as much as it produces a work rhythm inside the mine. This is perhaps most obvious when walking around the upper mining neighbourhoods of the city, since miners can be seen leaning up against a doorway silently chewing coca, or market women in the Calvario mining market can be observed gossiping, bright-green bags of coca in hand. The fact that the pijcheo persists, despite the pressures of industrial-time cycles (see below), tells us something about how miners chose to spend their time.

Beyond the daily time interruptions, there were many other instances throughout the miners’ calendar year when off-time took precedence over work time.

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54 It would be interesting to know how much this is changing due to the widespread use of cellphones (and thus watches) inside the mines. While completing my fieldwork, coca consumption via pijchu was not as consistent as Absi describes (see Chapter “tios”).
3.2.2 Structured Downtime: San Lunes (and Viernes de ch’alla!) Carnival and Festivities

\[ El \text{ Borachito} \]
\[ Los \text{ Masis} \]

\[ El \text{ dia lunes me habia chupado caraspa!} \]
\[ Hasta los patas me habia tomado \]

On Monday I drank, damn it!
Until I lost my footing  I drank

\[ X2 \]
\[ Cerveza Diciendo \]
\[ Chichita Diciendo \]
\[ Agua del chuño me habia tomado \]

Saying, beer!
Saying, chicha!
I even drank the \textit{chuño} water

\[ El \text{ dia martes me habia chupado, caraspa!} \]
\[ Hasta los patas me habia tomado \]

On Tuesday I drank, damn it
Until I lost my footing, I drank

\[ Soltera, Diciendo \]
\[ Viuda, Diciendo \]
\[ A una casada me habia llevado \]

Saying, single lady!
Saying, widow!
A married woman brought me home

\[ El \text{ Dia Viernes me habia chupado caraspa!} \]
\[ Hasta los patas me habia tomado! \]

On Friday I drank, damn it!
Until I lost my footing I drank

Saint Monday (San Lunes) was the move to drinking and thus missing or arriving late to accomplish one’s work duties following the weekend. This drinking would often spill over onto Tuesday’s work too, and in Bolivia, as the Los Masis song above suggests, prolonged drunkenness could bleed into the whole week. According to Thompson (1967) Saint Monday appeared to be a nearly worldwide (documented cases found in France, Mexico, Stockholm, Belgium, Prussia) phenomenon “wherever small-scale, domestic and outwork industries existed; was generally found in the pits and sometimes existed in manufacturing” (74).
During the colonial period, Saint Monday was the thorn in the side of mine owners and operators. Without fail, *mitayos* (the forced labourers of the mit’a system) would come to the surface on Sunday (often having worked several days completing intense underground labour), collect their stipend, and head to their parishes, where they would drink and dance, missing work on the following Monday. This resulted in nearly complete “disruption of the production chain in the first and often the second night of the week because there were no mitayos to transport minerals outside of the mine” (Tandetter 1992, 111).\(^{55}\) Mill owners accused mine owners of not properly disciplining their workforce to ensure a steady flow of inputs for processing (Ibid.). San Lunes and the prolonged work stoppages were one of the primary obstacles to disciplining the mining work force and the practice carried on across mining regimes and epochs (Rodriguez Ostria 2014), a practice that continues to hold strong to this day (Absi 2005b).

For many miners, their San Lunes begins on Friday afternoon with the *Viernes de Ch’allá* (Friday’s Ch’allá). The ch’allá is the ritual in the mines where libations of alcohol or beer are consumed and often accompanied by cigarettes and coca, something I will explore in more detail in Chapter 5. Miners finish any pending work they may have from Thursday and prepare their work areas for a fresh start the following week. Then, alone or accompanied by other miners from the same mine (or a nearby mine), they sit down in their work areas, or in a hut outside of the mine to drink and chew coca. Friday soon

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\(^{55}\) This is especially true beginning after the Toledan reforms of 1574, where metallurgic refining shifted from Indigenous-controlled wind-combustion methods (huayras) to Spanish-owned and controlled mercury-amalgamation refining (Bakewell 1984).
becomes Monday (and sometimes, even Tuesday), after a weekend of making rounds through the canteens in the upper neighbourhoods of San Cristobal or Calvario, playing some football, and maybe even taking a trip to eat fried blood sausage or fried pig intestines at the weekend Fair. The famous huayno referenced above demonstrates both the appeal and potential conflict that miners negotiate socially when spending a long weekend drinking. I was constantly impressed about miners’ abilities to drink well beyond a state of recovery late into Monday night, and then get up, only a few hours later, slurp down a hot soup, and head off to work, coca in hand, while I struggled to recover for what felt like days.

July 11, 2016. (Fieldnotes, Early Monday morning)

The fog was hanging low over the mountain and the damp cold settled over me like a wet blanket. I blew puffs of air out of my mouth, watching it freezing as it dispersed. Fucking cold. Women, well bundled in their layers of dark and heavy shawls imported from China with knitted hats perched precariously atop their braids, shrunk into their shoulders as miners lined up at their selling posts. From a distance, they looked oddly like the pigeons that were huddled around their wheel carts whose feathers puffed up and hid their tiny heads from the cold. Their customers, interchanging a slurp of a hot oatmeal or quinoa drink from a plastic bag tied around a straw, with a bite from a golden empanada, waited for a bus to pull up which would quickly fill and then make its long crawl up the mountain past the 500m-high hills of the Pailaviri mill slag. This was K’asa, the epicentre of mining-related movement to and from the mountain. Chela arrived and we headed on foot to the Miners Field to see her father play in a football game with his section. I asked where her mother was, and she exclaimed: “Kris, as if she would come to see dad play! She hates that he goes because he disappears after—you know, he has been disappearing for a week or more lately… when she goes she just gets annoyed and has to drag him home, so she prefers to stay home with Oscar. Besides, who would watch the mine?” Walking against the general foot traffic that was headed up the mountain, we arrived at an outdoor turf field that was surrounded by half constructed bleachers. The green of the plastic field popped against the grey, brown hues of the mountain and the tailings. Men were changing into shorts on the bleachers, shouting insults at some of the players on the field: “Look at the donkey run!” and, “Come on, old man, run!” Others stood
around the sidelines in small group circles passing bottles of beer around between them, laughing and holding each other’s shoulders, bending like trees in the wind.

Many of the smaller cooperatives mines on the mountain (in terms of total labour force) still maintained the custom of Saint Monday during my fieldwork. In the case above, miners who worked in the ever-depleting colonial mine, Candelaria, of the Cooperativa Minera Unificada, organized their friendly football matches on Monday mornings. Games would be scheduled to “start” at 7:30 a.m., where men would, often after getting only a few hours of shuteye the night before, head down to one of the city’s fields to continue drinking. Rambo, Chela’s father, named for his shoulder-length black hair, which he pulled back in a bright pink headband when playing soccer, was notorious for being out of control when it came to Saint Monday. Sometimes beginning drinking on Friday afternoon after preparing the mine for the following week’s work, he would start drinking in his work area and easily breeze past Monday, Tuesday, sometimes disappearing for a “week or two at a time.” When I asked Chela if he had always been like this, she said that when the mineral “started going down he started disappearing more.” But, towards the end of my stay in Potosí, Rambo had taken over another partner’s work area and was working for himself, and was not getting lost as much as before.57

56 It is perhaps important to note that even though in 2017 Candelaria did not have enough funds to do a full-fledged tournament for their section during the cooperative’s anniversary (as is custom for many of the cooperatives in the Cerro), they maintained their weekly matches throughout this “dry” period of diminishing veins and production. Football was a constant point of reference of weekly conversations at the bocamina.

57 What is interesting about Rambo’s disappearance when prices are low (and literally below subsistence wages in some cases) is that it counteracts the idea that miners are simply working to subsist. If we follow the logic of subsistence work, when prices fall, miners would be more hard-pressed for money and would thus exploit themselves more, to feed themselves and their families. But, it appears as though this isn’t always the case. As Pascale Absi notes in her 2010 piece, “La Parte Ideal de la Crisis,” the weekly act of
Eventually I stopped going up to the mines on Mondays looking for miners and started going to different mines where I knew miners would be hanging out, spending their Mondays on the surface, or inside their huts. Or, I would spend the morning watching the incessant activities at one of the larger mines like Caracoles, which rarely seemed to stop. Or, on other Mondays, I would head up to the mines with one of the city’s tourist agencies. On more than one occasion, European tourists became very angry with the guides for having taken them into an “empty mine” when the tour clearly had promised tourists they would see “work in action.” On other occasions, some gringos would be invited to stay and join in on the fun with some miners who were hanging around outside of the mine. On one such occasion, a pair of tall English tourists joined their guide, Pedro, and a miner who often drank with his workers, from the Rosario mine. I stayed for one round with Tinku and his new drinking partners, a miner I knew from hanging around his mine, and then headed back down to the city. Later that evening Pedro called me, laughing, saying that Tinku and his young ones “had out-drunk both of the Englishmen” and that they had to call their bus driver to go up and pick them up, since they were both so full of beer that they couldn’t make the trek down to the city.

San Lunes disappeared at some mines during the commodity price boom in 2007 and 2008, a phenomenon which was later interpreted by miners as producing a social crisis in the sector. As prices climbed, so did the number of people mining in the mountain. Miners would work through their weekends, long nights and even longer days, to “take advantage of prices while they were up.” When Absi questioned miners about the crisis once prices began to fall in 2008 and 2009, miners did not interpret this moment of low prices as a crisis, but continued to interpret the bonanza as one of social crisis since many of the disruptions in the productive schedule (san lunes, patron saint holidays, etc.) that produced social cohesion were temporarily abandoned by the scramble of miners and others to produce as much as possible. The work, for some miners in the Cerro Rico, cannot only be about making ends meet.
Carnival is another example of drinking and dancing continuing for days in the mining neighbourhoods. In Potosí, carnival lasts even longer than the two-week festivities which are characteristic for February in Bolivia, since the Miner’s Carnival (Carnival Minero), commences two full weeks before the official carnival date. When I was in Potosí for carnival in 2017, I noted that work absences were nearly constant for the entire month of February, since the candlelight vigil (la velada) started on February 10 and carnival ended on March 1.

Illustration 15: Carnaval minero—Miners conglomerate at Pailaviri after coming down from their mines (2017). Photo taken by the author.

Miners are respected not only for the kinds of work they do, but also for the time they invest in socializing. Potosí, more than any other city I have lived in in Bolivia, is a celebration city, at least in its popular neighbourhoods. It felt like every week we would be jostled out of our sleep by the sound of a band parading through the Plaza del Minero to honour a neighbourhood’s patron saint, or the wall-shaking dynamite explosions being
set off at one of the mines in the mountain to announce an anniversary of a cooperative.\textsuperscript{58} In 2017 there were 29 cooperatives operating in the mountain (with some of the bigger ones having several mine-level sections who had their own anniversaries), and celebrations felt constant. Beyond annual pre-defined holidays such as these, there was a slew of unpredictable celebrations which lasted several days (weddings, baptisms, graduations). These festivities promoted a sense of belonging and relationships of mutual care, outside of (albeit attached directly to) the realm of production.

The relative persistence of the pijcheo, Viernes de Ch’allla, San Lunes, Carnival, Todos Santos and other social gatherings at the small mines in the mountain demonstrated miners’ unwillingness to disrupt their life rhythms (Thompson 1967) on account of their work. As such, miners, if not in explicitly political terms, make decisions about how to spend their time \textit{away} from work. Outside of the work itself (but directly viewed as part of the work process) the pijcheo and other more formalized acts of sharing between miners and their families provides everyone with a sense of comradeship, which is built upon a relationship of trust, mutual hard work but also mutual care. As sociologist Richard Canaviri Paco demonstrates in his research on cooperative gold miners in Northern La Paz, these practices serve as “socializing spaces where relationships and networks are established in order to have success in the trade and economic prosperity” (2015, 269). In Potosí these include important moments of “downtime,” of drinking, during my stay in Potosí I attended three cooperative anniversary celebrations, Cooperativa Central Mixto (March 8), Cooperativa Minera Unificada Seccion Candelaria (February 2), and Cooperativa Minera Unificada Seccion Rosario (October 1) and the anniversary celebration for the Association of Pailliris (October 11).
laughing and eating together. As Marco, a segunda mano said to me at an August First offering (which I will discuss further in Chapter 4), “mining isn’t just mining all the time, it’s not just taking everything out all the time, it is also this [gestures to the circle of miners sitting around drinking and eating with their families]—this is what the engineer doesn’t understand.”

Part of what was considered being a miner was fulfilling one’s socio-political obligations within the working group, the cooperative, and with other comrades across the sector. There were instances where I met socios who were barely making ends meet who were letting their other miners work in their work areas as if it were their own. Those who recognized the potential for suffering or hardship in others often tried to soften the blow by supporting one another. At the Exaltacion mine, two socios who were struggling to get by (to the point of the mine eventually closing) were approached by a socio in Candelaria (from a totally different cooperative) and were offered a place inside the mine to work until they could find something “more permanent.” These miners had met during a morning of drinking outside of Candelaria, and after a couple hours of passing around some pre-mixed bottles of booze, the two had confided that they were likely going to have to close the mine. After several more encounters like the first, the partner at Candelaria offered up one of his work areas as a temporary fix. “If it weren’t for the casual drinking encounter,” Saul, one of the socios, told me after, “we wouldn’t be here right now. Who knows what we would be doing? I have three little kids at home. I can’t afford not to be working.” I also attended several ceremonies like baptisms and graduations where socios would pin a significant amount of money to the child of their
work partner as a way of re-socializing the wealth they had made in the mine (see Illustration 15).

Surprisingly, there was even this kind of solidarity between miners and the guardas who looked after their mines. Guardas technically control entry in and out of the mine, but I never heard of one controlling time of entry. Guardas often knew when to expect a miner, based on the task he would complete that day, and often miners would let them know, as a safeguard, when they would be out. Guardas’ houses are attached directly to miners’ storerooms and often guardas can be observed sharing the pijcheo with the miners themselves, or, perhaps more common, preparing them a meal.

Illustration 16: Enrique’s (top right) daughter Vanelli (bottom right) gets money pinned on her by her ‘cake godparents’ at her graduation. Her cake godfather was another partner at the mine where he worked. Photo taken by the author.

One late afternoon Chela and I were on our way down the mountain from Roberto and we stopped in to chat with Ignacia, the guarda from the Usin mine in Sucumayu (one socio,
three peones). Ignacia was an elderly woman; she had been living and working as a guarda for 40 years. Ignacia was married, and her husband, a former mine worker turned sheep herder, tended to their herd in the nearby mountain. Even though Ignacia wasn’t receiving a salary for guarding the mine, she insisted that it was her duty to stay and take care of the miners:

I don’t get a salary even though I walk around all night. The socios say it’s because they give me a good picha and so I shouldn’t complain. As if they are giving it to me free without me having to work to collect it! Either way, I stay here because I feel bad for them. Sometimes they don’t even have enough to eat, so I make sure to feed them a meal. What else am I going to do? I can’t just leave them alone to have the little tools they have left stolen…

Ignacia, 72, Usin (Cooperativa Minera Villa Imperial), Sucumayu

Ignacia and her husband had never had children and Ignacia spoke of the miners as if they were her own children, having now known some of them, “since they were young boys.” When prices were higher, and conditions were better, she noted, they would have parties here in the hut and the miners would invite her and her husband to join in. In some mines, she noted, “the guardas are treated very badly by the socios, but here we are okay, we have respect.” As much as Ignacia was upset about her economic relationship to the socios at the mine, there was something about her emphasis on care and feeding which demonstrated the ways that life on the mountain required mutual care and respect to function.59

Similarly, care between partners and their workers become evidenced when an illness or death strikes a working group. When Aniceto, a partner from the Cooperativa Minera

59 See Gose (1994) for more on how feeding is an important part of creating and maintaining kin relationships in the Andes.
Unificada, took ill after a long month of rain and cold, he was admitted to the Pneumology clinic of the State-run hospital in Potosi. He ended up staying for nearly a month. After he didn’t show up to work on Wednesday, the section started talking in the morning before work, and some partners at the Candelaria mine spread the news about his absence. Before Aniceto knew it, he was receiving visitors, older past miners, new younger miners, former-miners and their families, in the crumbling building on University Avenue. Most arrived to heckle him, telling him he looked like he was “faking it” and that he should hurry up and get back to the soccer field before the “team lost any more games on his account” (he was a very good soccer player for the cooperative’s team). One former miner, Efrain, visited him nearly every other day, arguing that what would make him better was cheer, because, if a miner isn’t visited by a lot of friends during his stay, he was signing his death warrant. Aniceto and some of the other partners who worked in Candelaria alone often spent hours sharing stories and joking above ground before and after work.

Some Potosinos attribute their propensity to party and parade around the city to the curse their Spanish forbearers left them, whereas others note it part of their rural peasant heritage. Whatever the origin may be, the persistence of public work stoppages was unusually widespread in the city’s popular and mining neighbourhoods and caused residents who lived in the city’s centre to complain about traffic jams and the chaos they produced, which impacted their ability to get to work on time. This ability to disrupt the

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60 In Arzáns de Orsúa y Vela’s (1965) 3-volume collection, *Historia de la Villa Imperial de Potosi*, the reader can refer to what feels like hundreds of descriptions of opulent parades honouring Patron Saints, Mining Magnates and Royalty, snaking through the narrow colonial streets of the city.
middle-class Potosinos’ schedules, as well as their importance for building and maintaining relationships of mutual care and trust are essential parts of what being a maestro (or aspiring maestro) miner means in Potosí.

Anthropologist Kathleen Millar (2015b) asks what kinds of life rhythms are required for contemporary forms of precarious labour in the aftermath of neoliberal labour market reforms. She demonstrates how something she calls “woven-time” enables garbage scavengers in Rio to “earn a living while attending to the other demands and desires in their lives (35).” Kathleen Millar argues that garbage-scavengers on the largest garbage dump in Rio de Janeiro operate on something she calls “woven time”: “a time-sense that diverges both from the clock time of industrial capitalism and from the ruptured time increasingly associated with post-Fordist and precarious employment.” For Millar, “woven time,” is different from industrial “clock-time” which divides leisure from work. Instead, it “threads activities together into a single tapestry of the everyday. In woven time, work and social life can alternate… But more commonly, work, and other aspects of everyday life merge, occurring in the very same moment. Such moments make woven time a micro-temporality of the everyday at the scale of minutes, hours, and days” (Millar 2015b, 35). And, although we could certainly conceive of the pijcheo, San Lunes, holidays and overall daily and annual efforts to live outside of work as “woven-time,” for miners in Potosí their time-sense was in constant conversation and conflict with members of the mining industry who depended on industrial time—they are albeit the first link in a much longer international commodity-chain metal market and form an important part of a local and global market economy that is most certainly dependent on capitalist
relationships. If small-scale miners’ time is woven time, then that fabric is constantly being tugged and torn at by attempts at appropriation from “bosses” and commercializers who expressed constant disdain and frustration about miner’s “downtime.” As I began conversing with mining actors outside of the direct sphere of production, I began to encounter narratives of “time wasted.” It was during these moments that I began to understand why “being late” or “not showing up” mattered for them too.

3.3 Time Sense and Discipline

Caracoles is the first mine you see when setting out on foot in Pailaviri. It is the first due to its central location in your line of sight, but also due to its size. Even before approaching Caracoles, like the other mines of similar size (in terms of number of workers, and also in terms of their external mineral storage areas) my body would start to tense up and I would get nervous. It was a dangerous place to be simply walking around. The ground underfoot was interwoven with a complex rail system that terminated at the head of several buzones (external mineral storage waiting to be picked up by trucks) which overlooked the city, and there were piles of two-tonne rail carts strewn about, in need of repair, or awaiting activation by a working group. Every few minutes you would hear the roar of a loaded mineral cart being guided like a rabid bull by two men out of one of the adits, and a peon would shout, “Get out of the way” if you happened to be in their sights. These cars were impossible to stop once they were rolling and there were many stories of miners but also some rare tourists who had been run over and crushed by these metal beasts on wheels. The carts would peel out and come to a crashing halt atop of one of the buzones. Here it would be emptied, and just like that, be pushed back into the mine to repeat the process. The work at Caracoles felt rushed and I rarely had the
opportunity to stop and chat with a miner here (unless I caught them before or after a shift on their way up to or down from the mine). In fact, aside from the mine’s anniversary, there was barely a day that went by during my fieldwork that miners weren’t working. Here even the guardas\textsuperscript{61} were busy doing administration, since they oversaw keeping track of the number of cars unloading material into the buzón. And it was the buzones and their trucks that emptied them that apparently kept the miners constantly needing to “run” in the mine. One peon, Justin, was quickly chatting with me one morning as he and I crossed paths on our way to the mine. “Everything here is on a schedule,” he noted, shoving a handful of coca into his mouth\textsuperscript{62}. “Each working group has a time when they need to unload their material into the buzón. If we don’t unload when we are supposed to, we lose our spot, and we must wait. There are so many of us working, and there is so much material coming out that the trucks can’t keep up.” It was a rare occurrence that I wouldn’t have at least one or two workers interested in stopping what they were doing to chat with me about what I was doing hanging around, but like Caracoles, there were a few mines where I struggled to have conversations with anyone.

At the La Plata mine, another mine with a workforce of over 100 miners, there were hardly any miners above ground. Here, the buzones were built into the mine entrance and mini-excavators did the work of moving the material and loading it into the trucks—the mine seemed to work like a well-oiled machine. Ore would be dumped into the buzón,

\begin{footnotesize}
\textsuperscript{61} This was what shocked me the most since, if all else failed, I knew that at most mines I could simply chat with a guarda or her family. At Caracoles, this was impossible, since they were just as busy as the miners themselves trying to maintain the chaos of the production schedules.

\textsuperscript{62} Even this act of shoving his coca into his mouth was “wrong” from what I had experienced with miners. Part of the pijcheo is taking and examining each leaf before placing it into position between the teeth and cheek. Justin didn’t sit at the casilla and ponder before work, he arrived, threw his coat in a casilla, and headed over to a group of other workers to get instructions for the day.
\end{footnotesize}
the excavator would be there to load it into a dump truck. And, when it was full, another was there waiting to be filled. No downtime, no miners hanging around, barely any bodies above ground at all.

As we saw in Chapter 1, there are only 12 mines with workforces of over 100 workers, and at these mines, it was challenging to have the longer kinds of discussions I was having during “downtime” at the smaller mines around the mountain precisely because the peons (remember at these mines, at least 70% of the workforce are peons) were always rushing. They didn’t have the luxury, like the maestros and peons at the smaller mines, to hang about “wasting time” talking to a gringa. That pressure appeared to be exerted, at least in part, from the downstream processes which depended on their production.

The pressure of the prospect of having ore “back up” inside the mine, and thus prevent working groups from advancing, seemed to propel the mines to work as quickly as possible to get ore out and into circulation. While visiting a friend at his mine in the Roberto section, I was struck by his frustrations with his working group one morning. Arnulgo is a socio who no longer works in the mine himself, and instead contracts out the work to peons (at the time I was visiting him he had between six and ten under his auspices). The miners refer to him as the dueño [owner] of the mine. On this morning, I had snuck into one of the casillas to change into my mine clothes while some of the men stood around chatting about a soccer game they had played that weekend. When I came out, ready to enter the mine with them, they were making fun of one of the youngest of
the miners for being too drunk to play properly, while slopping up some soup they had
ordered from Hortencia, the guarda. Suddenly, Arnulgo, reappearing from another casilla,
snapped at the group, “Are you guys planning on working today, or are you going to just
sit there?” The guys laughed in response, appearing to take the comment as a joke, but a
few of them stood up slowly and went to change into their work clothes. Later, after
coming out of the mine, I asked Arnulgo if he was having problems with his workers.
Sighing, he responded:

The cooperative’s mill is very backed up, there is a long lineup, we have to
anticipate when we are going to have our mineral ready for it. If we don’t produce
our mineral for flotation in time, we lose our queue in the line, and then “whoosh”
a month goes by again. If these guys don’t hurry up, I won’t make my
appointment, and they won’t get paid, and then they will be bothering me for their
adelanto (advance) which I have already given them.

As noted in the previous chapter, cooperative mine production from the Cerro is sent to a
mill in the city or one just on the outskirts for concentration. These mills largely employ
waged-laborers and operate on industrial time with two or even three shifts through the
night. For producers who sell to their cooperative mills, the lineups are often long and
strict, and if you miss your turn, as Arnulgo mentions, you are sent to the back of the line.
Arnulgo felt that he didn’t have time to waste and was concerned that his workers were
slowing him down.
Illustration 17: Ore crushers spin in the Cabezas mill, where they operate 24 hours a day. Photo taken by the author.

In another instance I accompanied a mill mineral buyer, George, on the back of his motorbike on several of his buying expeditions. George, whose family comes from the old elite in Potosí (and who moved away from the city to live in the much more comfortable valley city Sucre), was constantly complaining about the miners with whom the mill was forced to negotiate to secure feed for their mill. According to George, there was a shortage of “good-quality” ore and so they were forced to “put up with a lot of shit” from miners to ensure their tight production schedules were met. He complained of insecurity they faced when trying to buy concentrates for their mills. Not only were the environmental factors like water a huge concern for them operating on a consistent basis in the city but supply was a constant worry. Finding miners who were “reliable” and
well-mannered ("educado")\textsuperscript{63} and not just “getting drunk and not working because they didn’t feel like it” were reasons they cited for not having a constant and secure supply of concentrates that would keep the mills running all day (along with the severe droughts that plagued the city during the winter months).\textsuperscript{64} Apparently, according to a mill owner who was trying to diversify his supply to other mining centres in the department, miners from the Cerro were \textit{the worst}. I rode along with George for a week, as he “chased down” a miner who had promised to sell his concentrates to him. He constantly called him, drove by a place where he was known to congregate with other miners and even attempted to track him down through other acquaintances. In the end, the miner had “disappeared” and it was rumoured that he had sold his production to another mill that was offering better prices. George hypothesized he had ultimately sold his production to one of the new “\textit{compadre} commercializers.”\textsuperscript{65} These commercializers were former miners themselves, and apparently did a better job at “understanding their ways” and “garnering trust.” George did his best to form relationships with these commercializers, arguing it would make his life “much easier” because he was “tired of chasing everyone around,” a feat which to the present date he has been unsuccessful in completing.

\textsuperscript{63} Use of this terminology is racialized. Residents of the city usually use it to refer to the difference between being “civilized” and “uncivilized” even if it literally means “educated” in the formal sense.

\textsuperscript{64} The other most common complaint from the mill sector about their low productivity was the ongoing drought. Water, like a permanent labour force, was in high demand. Droughts were a common occurrence during the dry winter months, but recently the city had been under a state of permanent water rationing which meant that water was being restricted (although not completely withheld) from the mills.

\textsuperscript{65} According to anthropologist Alison Spedding, \textit{compadrazgo - parentezco} is a kin-based relationship that is not sanguine or biological, but is, in fact, a social relationship wherein mutual economic and labour obligations are performed between \textit{compadres}. This relationship is often hierarchical in nature, where both compadres come from different economic positions (2003, 64). Olivia Harris argues that compadrazgo was essential for facilitating important commercial relationships between mestizo intermediaries and Indigenous herders (wool producers) following colonization (1995, 362). For more information about compadrazgo and its importance for small-scale mining in Potosi, see (Absi 2005b).
What this contrast demonstrates is the ways in which rationalized industrial production and industrial time is challenged by, and simultaneously challenges, other time-sense organization and practices which some have referred to as coming from the “popular economy” in Bolivia. And the impacts were significant. A study completed by Potosino economists in 2008 noted that there were two months of the year where overall cooperative production took a dive: February (Carnaval) and August (The August 1st offerings, see Chapter 5) (Ferrufino et. al 2008).

According to Tassi et. al (2015) and Canaviri (2015b), (Indigenous) practices like the ch’alla, kinship relationships like compadrazgo, and spectacular displays of festivities are key elements which make up the parallel “economy making” spaces of the popular classes in Bolivia. Referring to Aymara merchants, traders and cooperative miners, they note that those sectors have been successful in making the economy work while not compromising their socio-political and cultural structures. Drawing influence from Anibal Quijano and Arturo Escobar they claim that as makers of the Indigenous “popular economy” they don’t represent a threat to foreign capital and markets but have demonstrated being successful in permitting the emergence of equally powerful economic markets within and outside of the country.

And yet, what George is noting is significant in that he is explicit about these practices representing a threat to the larger economic movements of the city’s mineral industry. Although practices like the pijcheo, alcohol consumption, and partying continue to persist and thrive among maestros at the smaller mines, those practices are being challenged at
the larger mines where peons make up most of the workforce and where massive quantities of minerals are being moved around the clock.

As I have alluded to throughout this chapter, there is a definite element of struggle around time and balance between miner’s work and livelihoods. That struggle occurs not only exclusively at the production site, but also when miners encounter buyers and mills who operate on exclusively “industrial” production schedules. It is understandable, then, in the eyes of small “bosses,” some individual producers, and mill owners and operators, why “idle” time is perceived as “wasted time.” Time “not productively spent,” as we see from Arnulgo, accumulates and becomes a point of contestation between owners and mills looking to maintain industrial schedules, and miners who consider the pijcheo, carnival, or other downtime, to be essential for building and maintaining relationships of mutual care and trust, as well as some sense of coherence about what it means to be a miner.

3.4 Coming Back to the Mines. Miners’ Inability to “Adapt” to Wage-Labour

Silvio and a couple other miners were sitting around one morning chewing coca and chatting about travelling before heading into the mine. We were sitting outside the casilla. It was a rare warm, sunny morning, and I had my back to the city. The four-foot-high hole which bore into the side of Cerro Chico darkly glared back at me, foregrounding their discussion. I shifted my gaze back and forth between the men

66 In Capital Volume II, Marx demonstrates how idle time in the productive process can affect the magnitude of capital accumulation. Capitalists strive to quicken turnover time in the cycle of capitalist production and circulation and interruptions in the capital’s productive cycle, produce losses (1992, See Part 2 in particular).
chatting and the scrawny female guard dogs sunning themselves, deep in slumber. One of
the pups of this year’s litter wandered back and forth between my bag (which had been
filled with bread that morning) and his mother. Don Julio, a partner in his fifties, was
telling everyone how his niece kept “bothering him to go to Argentina to live with her
and work,” and that he “wasn’t really thinking it was a good idea, but was reluctant to tell
her no.” Maybe, he said, “It wouldn’t be that bad after all,” but then retracted, saying,
“But, I am old! What is an old man going to do starting anew in Argentina?” Silvio
listened quietly, as he often did, opting to speak up only when Julio finished. Silvio, I had
come to realize, was well-respected among the other men in his cooperative. Often when
people spoke of him to me, they echoed his wise qualities while simultaneously referring
to his father who had been “one of the founding members of the cooperative” and a
“fighter for the rights of all miners.” When Julio had finished speaking, Silvio began,
everyone shifting their attention and bodies to him as he spoke:

I went to Argentina. I was there for several years. I even had the card—you know, the one that allows you to work there legally. Valeria and I went together. It was not easy. I stood in line every day for the first couple months we were there, just waiting for work. Since I had the card, I could go line up at the office where people who were offering work would come, and I would wait, with so many other people, for a job. For the first few weeks, I went home without work, but with the meal. The Argentinian government was good for that—even if you didn’t find work for a day, they would send you home with soup and bread. Since we weren’t working, this was often all we had to eat, and we went on a long time like that. Eventually though, I got a job with some chinos working at their grocery store. The markets are different in Argentina, they aren’t like our markets here, they are organized, everything is labelled and has a price. I worked stocking the shelves of the grocery store in Buenos Aires and my boss was a chino, he, his wife, his brother and his parents all lived there and everyone spoke chino (a

67 In Bolivia the use of the term “chino” is ubiquitous and used as a general racialized category essentially describing anyone who “looks Asian.” That being said, it is well known that Chinese immigrants opened up grocery stores throughout Buenos Aires.
couple of the men snicker at this statement). The work was so boring, all I did was put food out and walk around between the warehouse and the store! My boss refused to speak to me in Spanish unless he was giving me an order, and they always spoke chino in front of me. He never trusted me and would always tell me that we were stealing from him. He would monitor my every move, and his mother would sometimes hide in the aisles to try and catch me. It was so frustrating to see this old woman (vieja, used pejoratively) peering out from behind the aisles. I worked hard for him and even developed an inventory system that made his work a lot easier, but I never got used to living there and working for him. That’s why I came back. Maybe our mines are running out and maybe the work is harder but here we are our own bosses, we work with our hands. I only depend on myself for my money. No matter what jobs I have had in the past, I have always come back to these mines.

Silvio wasn’t kidding when he said, “no matter what jobs I’ve had in the past.” He had worked in everything. He had worked for the State telecom company, ENTEL, installing phone lines throughout the hot and humid lowlands (Valeria, his wife, had worked alongside him, cooking for the crews); he had provided security and prospecting expertise (and Valeria had cooked) at an isolated mining camp in Potosí for Canadian mining investors who had attempted to get a project up and running; he had worked on small mining consultant contracts for the government; he had travelled and worked for small mining companies around the department; he had worked as the leader of the Departmental Federation of Peasants and, had even worked in several factories, for an even shorter stint, in Santa Cruz. He emphasized having a particularly hard time “adjusting” to work in the factories, noting that he couldn’t endure the conditions there.

The last trip he had made from the country for work was in 2007. He spoke of the choice to leave with disdain and regret:

I left the mine here to Estevan to work while I went to Argentina. Prices were low and I had heard that there was work in Argentina through Valeria’s sister. We went there together, Valeria and I, we left our kids here with our relatives since they were in high school. We left and then prices went up, just like that! I didn’t even know! There they weren’t broadcasting mineral prices on the radio like here, you had to know someone who knew. And so, when I checked in with Estevan, he
didn’t even tell me they were up! I found out through Julio in 2009… By then they were going back down, but we decided to come back, anyway. I had had enough with my boss. It felt so good to quit that job. You should have seen my boss’ face, he practically begged me to stay, but we couldn’t be convinced.

A few years earlier, Silvio had been diagnosed with Polycythemia, a blood disorder, which according to Silvio, means your body produces more red blood cells than normal. Doctors instructed him to move to a lower altitude city like Sucre or Cochabamba. He had been forced to strictly manage his diet (called a “white diet,” generally used to refer to non-fried foods cooked basically without oils, spices or salt), which Valeria managed on a daily basis, but despite their best efforts he couldn’t get well. Silvio repeatedly noted that despite his constant working around the country, he always ended up back in the mines in Potosí. The mines he said, “called out to him.” Silvio, like many other maestros I spoke with in Potosí, made frequent reference to a certain pull or hold that the city, and its mines, had on their being. Miners were constantly being told by doctors to leave the altitude and head to the valleys or lowlands when their health deteriorated. The high altitude made oxygen flow and breathing particularly difficult for miners suffering from mal de mina (lit. mine illness, which is used to describe an array of symptoms that can be physiological but also psychosocial (Tapia Montesinos 2010)) or silicosis, but despite their discomfort due to the harsh climate and altitude, miners appeared to end up “stubbornly returning to the city and eventually to their death,” as one pailliri told me.

Silvio was not the only miner to reference the link between “being your own boss,” and “working with your hands” in contrast to being invigilated and controlled. Chivo, another miner, a segunda mano who had honed his skills for many years in the trade, said this
about his time in the factories in Santa Cruz while we were sitting around during compadres:

I worked in the factories in Santa Cruz for a year, and sometimes I go back, but I won’t ever be a factory worker! At those factories they pay too little, I made 1,200 Bs a month\(^{68}\) working all day! Can you believe it? All that work and you only make 1,200 Bs, it’s embarrassing, I can’t support myself on that kind of money, and imagine if I had a wife! And you have to go to work every day: if you are sick, you lose your job. At the factories, you are just the same as everyone else, you don’t have any control. At least here in the mines, I work for myself, with my hands. And if I want to drink on a Monday, I do. If the boss doesn’t like it, I move to another mine (looks around to the guys and laughs). If I get sick, I don’t go to work, but there will be work somewhere for me in one of the mines because I know what I am doing. Here we are jodidos (fucked) but at least we have our pride, we are miners. I am a good miner, and I am proud of that.

*Chivo, Mina Requerida, COMPOTOSÍ*

Another segunda mano, Chino, working with his brother at the Rosario mine in San German, had recently quit his permanent job at the San Lorenzo mine (operated by a subsidiary of Glencore-Xtrata) and had returned to the mines in the Cerro. One day we were drinking during the cooperative’s anniversary, and I asked him why he had decided to come back to Rosario. He launched into a reflection about his experience, between gulps of canned beer:

I worked here when I was a child, you know. Not in this mine, up there (gestures above us to the mine towering over the section) in Rey Socavon with my uncle. One afternoon I was working with him and he got crushed. I saw him in pieces when they brought him out. I wasn’t there with him, I was moving mineral out at the time. I was lucky, but after that I left—I couldn’t go back in. When I was old enough to get a proper job, I applied and got hired at San Lorenzo! I was so excited, it was permanent, and I was in the union and had benefits. But I was bored, and I started getting into fights with other miners (*shows me a scar on his hand from a bar fight*). I would want to go drinking and stay out, and then had trouble making it into work at the right time. I got two warnings and then was told not to bother coming back. The foreman was a real son of a bitch. He called me a borracho (drunk). I may like to drink on a Monday, but I’m no drunk. So here I

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\(^{68}\) At the time of my fieldwork 1 CAD = 5.4 Bolivianos (Bs). Minimum wage is now 2000 Bs, or 375 CAD approximately.
am, and now I work with my little brother. I am a single father (smiles proudly and lifts his beer can up to cheers me), that’s right, *my wife left me*. This way, I can be with my baby more, this way I’m free.

Chino, Mina Rosario, Cooperativa Minera Unificada

Miners who had previously worked in permanent wage-labour positions commented on their inability to adjust or their incompatibility with the structure of these positions. They emphasized their relative autonomy, and identified, as is especially clear with Silvio, a boss who did not understand them or their work, making the conditions unbearable. Here at many of the mines, even some of the peons I spoke with didn’t see their partner employers as bosses unless they are partners who never go into the mines and who don’t work with their hands. As we saw in Chapter 1, most common in smaller mines is that older miners who are socios are perceived as the maestros or capos of a working group, and peons consider their day-rate labour as a necessary part of the apprenticeship process within the trade. Bosses were often perceived as external to the production process, so a socio who didn’t work, a buyer who didn’t work, or a mill that wasn’t involved in mining could all be referred to as a patron (boss) depending on how miners saw their work and relationship to that person.

Ethnohistorian Rossana Barragan (2017a) argues that k’ajchas and trapicheros (small-scale processors) of 18th century Potosí were not only passive victims to the force-labour system, but they successfully organized a parallel popular economy wherein they extracted and processed ore (sometimes more in terms of quantity than the parallel industrialized operations), thereby exerting economic agency. Although she does not have the data to probe the kinds of time/labour relationships on the mountain she does
say that k’ajchas and trapicheros “seem to have sought not to become wage-workers wholly dependent on their salary but instead to establish a greater degree of economic autonomy and independence.” (219). Anticipating this claim, Anthropologist Pascale Absi (2005b) notes that maestros continue to demonstrate residues of their colonial past in the way they organize time and space within the mines. She says, “today’s cooperative miners have inherited the ancient practices of kajcheo, where workers who worked for colonial mine owners would take over the mines on the weekends to work for themselves...the notion of kajcheo translates for miners into the idea of free worker… (17). The free worker didn’t only mean taking over the mine to benefit directly from the fruits of your labour, it also meant failing to show up to work the following Monday, even though you had a tributary obligation, in order to meet your external obligations. Miners don’t just resist discipline; they actively oppose it.

When I spoke with miners about why they came back to the mines, the answer was nearly always, perhaps incomprehensibly, centred around a sense of stability and autonomy: the mines have historically been a stable source of work in their time of need, and if you already knew the trade, you could just go back and jump in (see also Absi 2010). This itself seems almost counter-intuitive from the perspective of traditional mineral economics which see mineral operations as contained within a boom-bust arc. But for miners, the work was familiar and based on conditions they could somewhat control. For new migrants, there was the pre-existing structure of cooperatives which could absorb your labour and teach you the trade—if in fact you wanted it that way. If not, well, you
could work for whatever you wanted and then go somewhere else. As one former miner told me, “the mines don’t discriminate: you can be young or old, weak or strong, with or without skill. It doesn’t matter, you just have to have a will to do the work.” And for those who knew the trade well, well, there was nothing better than the sense of fulfillment one got from not having to answer to a boss, for being able to be free to choose to just hang out and with your friends or relatives to shoot the shit, to be able to work at your own pace.

After first speaking with Silvio and then learning other miner’s histories like the ones I mention above, I began to question my assumptions about what cooperative mining meant for miners—particularly I was questioning my own assumptions about formal work and exploitation. As I began to recognize the overlap of discussions of informality with notions of autonomy, the conflict broke out in August.

### 3.5 Subsuming Notions of Autonomy

As I noted at the beginning of the chapter, following the violent conflict that erupted between the MAS government and the cooperative mining sector, which resulted in four miners being killed, along with the Vice Minister of Interior, the government approved five Supreme Decrees which directly affected the organization and administration of mining cooperatives across the country.

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69 As we will see in the next chapter, this is changing due to an overwhelming sense that they have been displaced from their workspaces (either via diminishing deposits or collapsing mines).
Once the decrees were approved, it was expected that their implementation would take some time, but that they would go through. Some impacts were felt immediately, whereas others, it was assumed, would take some rolling-out. As a result of the DS 2888, immediately after the conflict many shops in Potosí that had been selling dynamite to miners were forced to close their doors. The price of dynamite doubled nearly overnight (from 600 Bs a case to 1,400 Bs), and miners complained of their inability to work. Some began leaving the city. As one miner said to me, “Without dynamite we can’t advance, and if we can’t advance, we can’t produce and sell” (Francescone 2017). Although the restriction on the sale of dynamite was claimed to have been put in place to prevent its use in protests, there was already existing legislation which accomplished this. It ended up merely hurting frontline miners the most, the ones the government was purporting to protect.

But the more structural changes to the State’s role in administering the sector weren’t as immediate. This was the case with the legislation that proposed that workers become permanent salaried employees of cooperatives. Either way, the decrees, and modifications (Law #845) were approved, and implementation was expected to have commenced by mid-November of 2016.

70 A friend of mine works for the government institution Autoridad Jurisdiccional Administrativa Minera (AJAM), the organization which would now, according to the Mining Law’s modifications, oversee all of the financial accounting measures of all the cooperatives at the national level. According to him, the institution was in a state of chaos; no one in his office really knew why they were now having to become an accounting agency when they were already overwhelmed with a several-year backlog of contract approvals and were primarily lawyers whose mandate was to draw up legal contracts, not monitor financial statements.
On the evening of October 27, my partner’s friend visited us from La Paz. Alvaro worked in the Ministry of Labour’s Vice Ministry of Cooperatives office and had been sent to investigate a case of tax evasion at a cooperative mine in Porco. Alvaro defines himself a “militant revolutionary,” wears a green Che Guevara-style ball cap to all of his work meetings, and is convinced that he is going to “fix the problem with peons” in Potosí. On his way back through, he “decided to take advantage of the trip and examine the labour relations in the Cerro Rico.” We sat and listened to him tell us about his first ever visit to the mines earlier that day, while sipping tea and eating bread:

I took a cab to a mine I had heard a rumour about having lots of peons. It was a COMPOTOSÍ mine. I showed up to the bocamina and someone asked me what I was doing there. I asked if their boss was around and when the workers answered in the negative I asked them about their labour status. They were peons, obviously! And so, I asked them if they knew about the new legislation and if their boss had registered them as full-time permanent workers. They apparently had heard something about the legislation, but expressed some concerns about where they would work if they chose to unionize. I told them not to worry, if they unionized, the COMIBOL would give them their own work areas where they could work by themselves.

I interrupted him there, asking him, “Have you talked to someone at COMIBOL about this? My understanding is that all the work areas are saturated up there—can you really just tell them it’s that easy?”

No. I haven’t talked to anyone in the COMIBOL about that, but that isn’t the point. The point is that workers need to unionize. They need to believe that it is possible. I want to come back here. I think I can make a lot of headway. Don’t you understand? This is pure exploitation! Have you seen these mines and these conditions? We need a group of people from our office to come down to get things done. I don’t care if I have to stand in front of the bocamina and yell, these workers need to know about their rights, they need to unionize.
When we had finished our tea, Alvaro headed off to his hotel downtown, Hotel Colonial, one of the most expensive in the city, just a block off the main plaza. He would be off to La Paz tomorrow, but would get in touch with us if everything worked out. I kept replaying the night over in my head “they need to unionize…I don’t care if I have to yell…we will send some people from La Paz…” On one level I completely agreed that these mines were dangerous, some miners were being exploited, and profit was leaving the mountain. But I wasn’t sure if the tactics he was proposing were going to work, or even if they would resonate with miners on the mountain. The fact that he was a university-educated man from La Paz coming to tell them what to do certainly wouldn’t help.

In 2013 while working at CEDIB, we heard rumours that peons were trying to organize a union in the Cerro Rico, and that their efforts had been violently repressed by their bosses. Later, in 2014, I heard similar rumours about a group of miners trying to organize a union in Siglo XX, which was met with similar consequences. One of my initial reasons for doing work at the mines in Potosí was precisely because I myself perceived these miners as an emblematic case of the hyper-exploitative nature of mine labour in Bolivia. But, during my fieldwork I never heard any talk of unionizing, and I was more used to hearing peons complain of lack of work than of being exploited. In cases where peons or segundas manos complained about an unfair economic relationship with their socio or

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71 In 1979 Burroway reviewed the anthropological and sociological literature on transitions from cottage-industry or manufacturing labour forces to industrialized workforces and he argues that actually, perhaps counter to what we would assume, workers resistance to subsumption vs. calls for unionization are actually quite varied and distributed between the two possible outcomes.
dueño, it was founded in an unfair percentage distribution of lode when a profitable vein was struck. Miners felt that becoming permanent would limit their ability to make “extra money” if a good vein was encountered or would restrict their mobility, making them more vulnerable to abuses from their bosses. Further, they were not willing to sacrifice time spent outside of their workdays, which included parties, health emergencies, or political responsibilities outside of the mines.

When the DS 2892 was passed with the objective of formalizing the workforces and making all hired labourers permanent, my initial reaction was that it might be devastating for miners who were not in the economic position to hire professionals to produce their financial statements, and complete the paperwork required to formalize their workforce. I kept thinking of the socios I knew who worked in small sized mines and were barely making enough to cover their costs. What about those peones who don’t have an Identity Card? How was this going to work?

Immediately following these legislative reforms, I attended the Annual Congress of the Cooperative Federation of Potosí from November 16 to 18, 2016. I was initially shocked at the lack of apparent attention and care to the significance of the legislation (which I imagined as potentially catastrophic) for the leaders of the cooperatives, just two months after the legislation had been approved and only three after the conflict. Sitting outside under the scorching sun on the first day, I chatted with several miners about the decrees as we watched a makeshift, informal soccer game. Many didn’t know they had been passed, and those who did, were unsure as to whether it would be detrimental. I was so
confused. If Potosí was considered the epicentre for peons, why wasn’t anyone concerned? On the second day of the Congress, I attended the Political Commission discussion and I observed how little discussion there was about this legislation. If peons were such an important part of the workforce, and if they were an exploited class that needed to be unionized to confront the mine owners, then why weren’t delegates concerned about this possibility?

One peon who was hanging around outside of the coliseum (since he couldn’t attend due to restrictions around voting) was frustrated at the central government’s approach. “Why are they concerned about what happens to us out here? They never really care, what does Potosí have? Why do they want to tell us what to do? If I don’t like my work, I will leave. It’s that simple.”

Freddy, another peon, explained his thoughts on the law in this way:

Why would I want to become a permanent worker? What am I going to gain? What happens if I get sick, will I be able to take time off? What happens if I don’t like my boss? Now I will have to do all this paperwork in order to change mines. And, I will make less money! Sometimes when we are on contract we work for long days and nights for a long period of time and get a certain percentage of the overall value of the minerals being sold. If I am an asalariado (miner on salary), I won’t be able to work and get a percentage of the overall lode. I won’t be able to have as much flexibility—I will be stuck. It won’t work for me, or for my brothers. We still go home, you know, back home every month to tend to the llamas, the fields, our parents are old and they need help. One of us could get elected as a political leader in the community and then what? What would happen to our work? No, I don’t think it would be beneficial.

Mina Amorosa, Cooperativa Minera 21 de Noviembre

And contrary to the common understanding that these decrees were going to hurt exploitative socios or patrones of the mines where peons were working, I was shocked
when I learned why they were perhaps skeptical, if not happy about the decrees. One afternoon I had spent the morning observing peons at a mid-size mine in Porco and driving around to see the cooperative’s mill and extremely long queues with two socios. Afterwards, Enrique\(^\text{72}\), his friend Javier and I headed back to Potosí for lunch in Enrique’s new Toyota Hilux. Enrique and Javier thought my concern for the sector comical as we shared a lunch and beers in an expensive popular restaurant near the city’s cemetery. Javier said that there was no need to be worried since nothing would come of it, but noted that, apparently it would make his life much easier if he just had a workforce he could “count on.” Javier taught mine engineering at the State University Tomas Frias and managed his mine “from a distance.” Confused, I said, “I don’t understand? I thought this law was meant to attack you guys.” Gulp my beer back, Enrique leaned in and tried to explain. He is another partner\(^\text{73}\) in Porco and like Javier also depends on hiring day labourers and contract labourers for extraction at his mine. He was similarly less concerned with the perceived threats the new legislation would exert. But he also noted, as a boss himself, what implementing the legislation would mean for them in terms of benefits.

Ha! That law will blow over. The government doesn’t have the capacity to come to Potosí and walk around the mines and make sure we are doing it right. They know we can’t do the accounting ourselves. How do they expect us to do it?! Do you know how much money it will cost me to comply with the legislation? I have to hire an accountant, I have to hire a lawyer, I have to do paperwork that I never do. And my workers? They don’t want to be salaried. In fact, I have proposed this to them several times in the past. It’s true. I offered to pay them all 2,500 Bs a

\(^{72}\) Tragically, Enrique died in Guadalupe on November 18, 2020, when the winch operating the lift he was using to move between levels broke, and he fell 30 m to his death.

\(^{73}\) Enrique is commonly referred to by other miners as a patron (owner) other than a socio (partner) since he no longer works in the mine himself, instead completing, in his own words, “the management tasks required to run the mine.” At the time I knew him, Enrique hired between five and 10 peons a day. He struggled at ensuring the same workers would return. Enrique died tragically in 2020.
month, that’s twice the minimum wage and they won’t do it. It is actually a big pain for me the way the labour market is currently structured. Miners come and go, they drink and don’t come to work, they move around looking for better wages. Making them formal employees would help me out since I would always have the same ones around, this is more reliable. But do you think they want that? If they don’t like an agreement on a contract, they leave. If it’s harvest time, they leave. During carnival, they are gone for two weeks… three weeks. They refused to sign. It’s a pain for those of us who are trying to mechanize, trying to become real companies, we don’t have as much control over them as the government claims. This is a real problem for us.

Just like the mine workers referenced above had their doubts about the government’s will to implement the decrees, the patrones who would have been affected by them had similar reservations. Aside from the fact that the government likely does not have the physical capacity to enforce much of the modifications it made, the legislation seemed doomed to fail because of when and how labour happens on the mountain. But beyond any analysis of the feasibility of implementation, miners were not thinking about that when they formed the blockades outside of the city of Potosí. According to Omar, “we went to blockade because we were sick of the government trying to control us, tell us what to do and how to act. We get enough of that here with the mills robbing us, but this was the last straw.”

In her ethnography, *Reclaiming the Discarded*, Kathleen Millar (2018) demonstrates how catadores (garbage sorters/collectors) who work at the garbage dump in Jardim Gramacho in Rio, when faced with the possibility of working for a wage-labour job, end

74 The ministry of labour office in Potosí, for example, only has three labour inspectors for the entire population of workers. According to the Director of the departmental office at the time, Dra. Eugenia Flores, they are terribly behind in programmed inspections and cannot keep up with the demands they already have. If peons begin to unionize they will fall under the purview of the ministry enforcing the legislation, which will evidently further complicate matters.
up “not being able to adapt” and ultimately go back to the dump. She argues that catadores strive for something she calls, “Relational autonomy.” Relational autonomy, is a co-dependant “relative degree of control over work and time enables catadores to sustain relationships, fulfill social obligations, and pursue life projects in an uncertain everyday” (71, emphasis mine). Miners I spoke to seemed to be holding on to less permanent forms of work in the mines because of what they gain socially in doing so (see also Millar 2017). This was expressed most clearly in cases where miners had worked in permanent waged positions, which they deemed incompatible with their livelihoods. It appears miners viewed the legislation to formalize their status as a threat to their livelihood-making practices which involved, as we have just seen, an array of relationships that are constantly at odds with industrial capitalist productive schedules which seek to separate work from life. Along these lines, in the recent ethnography, Shifting Livelihoods: Gold Mining and Subsistence in the Chocó, Colombia, Daniel Tubb examines miners’ lived experiences of the freedom, creativity, and flexibility that informal and unsalaried labour provides while simultaneously situating this within a broader structural discussion of racialized violence, displacement, and inequality. Tubb uses the term used in Colombia rebusque—which he translates as shifting—to describe the insecure forms of work which have millions of Colombians creatively developing and shifting strategies to make a living and find work. He uses rebusque since he views it as a concept which enables agency but also recognizes structural limitations. He says, “stories

75 In her article, “Towards a politics of precarity,” Kathleen Millar probes social-worker and activist Dorothy Day’s 1952 claim that “we need more precarity.” Millar notes that Day is reflecting on the kinds of social relationships that were lost to waged forms of permanent employment. She notes that instead, it might be productive to ask what is gained in precarious situations.
of living through rebusque are stories of a creativity and optimism that are a counterpoint
to alternative renditions that would focus on lack of choice, lack of opportunities, and on
the legacies of slavery, poverty and war.” (24). He doesn’t underplay the structural
conditions which ultimately make those experiences of choice and freedom limited. The
challenge is meeting miners where they are and, ultimately, seeing what it is about their
informality that makes work more enjoyable. Miners were choosing to resist
industrialized forms of labour because of what it might do to their lifeworlds with one
another, and, as we will see in the following chapters, their skill, and relationship to other
than human beings.

In *Capital Volume 1*, Marx (1990) describes the tension between what he calls formal and
real subsumption in the labour process. Formal subsumption took place when capital
assumed complete control over the objective conditions of labour but had yet to take
control of the labour process. As capitalism began to install itself as a system, workers
became reliant on a wage for subsistence but continued to work in the cottage-industry,
as skilled tradesman and petty traders, which still afforded workers with life rhythms that
were not dictated by industrial discipline and time. Only large-scale industry could
complete the process wherein, through disciplined and strict management of the labour
process, workers would face the possibility of real subsumption wherein the external
forces of the capitalist metabolism to continue to extract more and more surplus value
from the workers no matter their physiological limits (See Braverman (1976) for how this

76 These are the journeymen, the tradespeople and the drifters that E.P. Thompson so beautifully brings to
happened in the United States). In 2014, Alvaro Garcia Linera, during his term as Vice President of the Plurinational Government of Bolivia, published a history of the workers’ movement in Bolivia in which he describes the mine workers’ movement in terms of formal and real subsumption. Small and cooperative miners, he notes, “were and are the synthesis of a social tapestry, that is of the stubborn and chaotic nature of formal subsumption in techniques, bodies, habits and collective dreams. (18)” He juxtaposes them with the large-scale State mining company’s workers’ unions at the time which, according to him, “build the epic, martyrrous and sacrificial history for Bolivian society.” The large-scale COMIBOL unions had marked history with their collective class consciousness, according to Linera, since they faced real subsumption at the large, industrialized COMIBOL mines.

From here we can now return to where we started off with this chapter, with the initial questions posed about the government’s position. With this reading from Linera we can see the same logic that Alvaro had: in order for miners to develop class consciousness and be the revolutionary vanguard once again, they need to undergo a process of real subsumption. The policies the MAS government sought to pursue to rid peon miners of their chains of exploitation were likely motivated by this logic. At least that is what mill owners hoped, and miners feared. By installing a system where miners would be obligated to register as waged-labourers and in doing so submit to specific contractual obligations that established a more disciplined control of time, would have simultaneously helped to promote a sense of consistency that the external metabolic tempos of capitalism were demanding.
As we have seen in this chapter, time and the experience of time and its links to experiences of autonomy from capital as they play out at and around the mines are important factors that encourage miners to continue returning to the mines. Having the time to just hang out, shoot the shit, and share some coca and drinks fosters relationships of trust and mutual care, and come to form part of what it means to be a good miner—as Absi (2005b) notes so clearly in *Los Ministros de Diablo*—part of what being a miner means is embracing their k’ajchas roots in all their belligerent glory. Part of the reason that miners return to the small mines to work as socios or segundas manos is because they *enjoy it*. And these conditions played an important role in motivating miners to oppose their own formalization—thus challenging the government’s assumptions that their structural exploitation would translate into experiences of it. Instead, at least some miners appear to prefer their informality within the overarching structural conditions as they exist.

And yet, as we have also seen, this experience of autonomy is not without tensions, since, due to their position within the commodity chain, cooperative miners are ultimately dependent on bosses and mills that operate with capitalist time sense, and that are pushing to discipline the sector to meet their own production schedules.

But beyond the sociality of the space of cooperative mining that we have explored in this chapter, miners also expressed a particular affinity to the work itself—and often lamented changes in their experience of mining as a whole, referring to the times prior to the shift
The next chapter seeks to explore how mining happens in the cooperative sector, to further understand these questions of autonomy and discipline, and the changes that appear to be occurring at the mine site.

3.6 Postscript—The Gendered Limits to Autonomy

Gina was up at 6 a.m. She slowly rolled out of bed, throwing the warm fleece blankets onto Amber as she delicately placed both feet on the floor. She touched my shoulder whispering, “Good morning Kristy.” Nikol stirred beside me and, doing as Gina had done, I rolled the blankets back confronting the biting cold and quickly rolled them back over her trying hard not to wake her. I headed into the kitchen around the corner. The room which Gina and her husband Wilson rented for 400 Bs a month, was all-in-one. The two twin beds that they shared with their two daughters faced the small television which was propped on top of a collapsible plastic wardrobe. The beds were partitioned from the kitchen and dining room by a wooden, glass-panelled buffet which sat behind the small kitchen table and propane stove, whose oven, I had learned earlier when attempting to make cookies for the girls, was no longer functional. Instead, Gina stored extra plastic plates and bowls on the racks inside. We set to quickly readying breakfast. Gina rummaged about the mini-fridge, taking out carrots and turnips and celery while I ignited the element on the stove for tea, scooping water out of a plastic bucket, which was perched beside the only window looking out onto the street. The elements were worn, and the blue flames blew out and around the one I had lit, rising high off the top of the stove. I set the kettle down on top, smothering the flames with the massive stainless-steel bottom: these kettles had just recently arrived in Bolivia from China, and their “German” brand screamed high quality. Gina started chopping up the vegetables and throwing them into a pot with a small amount of water to boil, while I, grabbing a serrated steak knife, peeled potatoes in my hand like I had learned from Bolivian women years ago, making sure to just nick the peel from the surface, leaving only the yellow fleshed potato behind. We tried to quietly scurry about, getting the soup ready for the day. To the cooking vegetables, Gina added squash and onion, finishing it off with peas, and lastly, noodles. They would eat this with a small piece of fried llama jerky that Gina’s mother-in-law had brought from Sucre, chuño (freeze-dried potato), and the boiled potatoes I was peeling. With the lunch boiling away, I went around the corner and began trying to wake up the girls, placing my cold

77 E.P. Thompson demonstrates how workers’ mobilizations were also commonly grounded “sentimentally” in notions of a “golden age,” not because “material goods were more plentiful…but from nostalgia for the pattern of work and leisure which obtained before the outer and inner disciplines of industrialism settled upon the working man (357).” Thompson spoke out against economistic understandings of labour which I think continue to underlie our understandings of work, labour, and life (See Millar 2015).
hand on their necks. It was now 7 a.m. and Gina had to start getting herself ready for work. Nikol was up first, greeting me, happily repeating, “I am so glad you stayed here last night.” Amber, the eldest, was much harder to wake up: once asleep, this one was impossible to bring to life, which meant Gina faced a constant struggle of coaxing, nudging, and introducing cold every morning before work. “These little pests sure try my patience,” she would often say jokingly. Once awake, the girls scurried around the buffet and, plopping themselves down on their chairs, began drinking their hot grapefruit tea, which Gina had prepared by straining grapefruit and chamomile tea together back and forth to cool it down, to rid the fruit of its bitterness. (Fieldnotes, July 15, 2017).

I had met Gina through her brother-in-law the second month I had arrived, and we had been friends ever since. Gina was a year younger than me, and had two girls, aged ten and five. Gina’s father was a miner who had died when she was young, and her mother, after his death, had migrated to Argentina for work, leaving her to care for her four older brothers, all of whom were miners. “Before, I didn’t know how to do anything, I had to learn to do everything alone,” she would humbly tell me when I would complement her on her impressive juggling abilities. Gina hadn’t seen her mother in over ten years, and her daughters hadn’t met their maternal grandmother.

Gina worked as a guide assistant for her brother-in-law’s tour company in the mines. Her tour would start at 8:30 a.m., meaning she had a short window of time to get her husband fed and the girls clothed and doing their homework before she journeyed up the mine. She would return home around 1:30 in the afternoon, when she would run up the stairs to their apartment, sit the girls down and coax them into eating quickly while simultaneously combing their hair and readying their bags, all the while serving her

78 Literally plagas, a term of endearment Gina’s brother-in-law began using and that now the whole family used to refer to his children and their 10 cousins.
husband, who often just returning from a tour, would be ravenous for lunch. By 2:15 p.m. she was running down the narrow streets of San Cristobal to get on the bus, the two girls in tow, usually shrieking and giggling the whole way. Nikol started classes at 2:30 p.m., and Amber at 3 p.m. It seemed to Gina that no matter how early she started trying to get them eating and ready for school, they were always late, a fact that constantly resulted in Gina getting scolded by the girls’ teachers. Sometimes, if Gina had an afternoon tour (starting at 2 p.m.), Amber would take her sister to her kindergarten and then walk the three blocks to her school, both of which were situated downtown. Other times, if Amber had band practice and had to carry her instrument, Gina would have to turn down work to accompany her.

After her second tour, which would end at about 6:30 p.m., Gina would quickly change out of her mine clothes, wash her hands and run a comb through her hair and run down to the tourist agency office where the girls would be waiting for her, having walked there after classes. Accompanying them home and strategically avoiding their pleas for hamburgers or fried chicken, she would set the girls up in the house, give them tea and bread, and then head off to class, which started at 7 p.m., but she never made it on time.

79 Wilson, Gina’s husband, didn’t always have Gina serve him, but almost always. This was a constant point of struggle for my partner, who took it upon himself to bother Wilson for being “lazy” and not helping out his wife enough, often making a joke about Gina running around like a chicken while “King Wilson” sat on his throne.
80 San Cristobal is well-known as an “upper” neighbourhood in Potosí, which primarily, albeit not exclusively, houses miners.
81 In Bolivia, in response to a lack of teachers, children who attend public schools attend in shifts, meaning all students attend “half-time.” Both of Gina’s girls were on the afternoon shift, which meant that she had to constantly worry about arranging childcare for the mornings she was working. It also means that parents and students are overburdened with “homework,” often suffering for hours to pick up the slack of what is lost in the school room.
She was studying in a small private institute which would eventually certify her to work as a guide on her own. She was trying to learn French (the majority of tourists are from France) on her cellphone on the bus rides to and from the girls’ classes to give herself an “advantage” over other guides, and was also studying English, a necessity, at the institute.  

She was worried though, that after all of this, she wouldn’t be able to work as a full-fledged guide in the mines, since she was wary that the companies wouldn’t hire a woman to do the tour, despite the fact that, as she said, “I grew up in the mine with my father and brothers, I know the mine, I am not afraid of it.”  

On days when she didn’t have tours in the morning or afternoon she would wash clothes for her brother-in-law and would work odd jobs with the catering group one of her brothers was involved in.  

Around 10 p.m., Gina would climb onto the bus which would take her home. She would arrive at their apartment exhausted and chilled, check the girl’s homework, and quickly ask them about their days. Then, putting them to bed, she would climb in alongside one of her daughters, her husband would do the same on his side of the room, and they would both grab a couple hours of sleep before sunrise.  

Gina’s story is not unlike that of other young women living in the upper neighbourhoods of the city who are struggling to juggle their home, childcare, and now waged-work positions. Throughout my entire time in Potosí, and even now as we continue to chat over

82 Some nights, Gina, too exhausted after a full day’s work and wanting to spend time with her girls, would “skip class” which would ultimately result in her getting publicly berated by her professor, who according to Gina and others studying at the institute, had “horrible English” and was “rude and demeaning to those living in the upper neighbourhoods of the city, the next day.  

83 At present, there are only a pair of women who operate as tour guides in the mines.
WhatsApp and on visits back, Gina continues to relentlessly tackle every obstacle that is thrust in her path. Her biggest struggle is with unknowns, she explained, not knowing if there will be work tomorrow, not knowing if Wilson’s silicosis will flare up, not knowing what will happen if the girls get sick: how will they pay their bills if these unanticipated expenses come up? How will they pay their rent if he didn’t get enough work in one week? How will she get the washing done if there is no water on the weekend? The insecurity of wages, work, and the environment sometimes made her days agonizing. She often dreamed about getting a “stable job with benefits” and justified her long nights in the classroom as a means through which this end might be obtained.

In January 2018, Gina let me in on some important news. The municipal police force had posted an advertisement over the radio in the city that they were hiring full-time municipal enforcement officers. When the posting and the application due date went up, Gina was frantic: the local civic association was on strike, opposing the newly passed Criminal Code, and traffic was paralyzed, meaning her commutes to and from the centre to pick and drop off the girls at school were thwarting her ability to apply. Frustrated, but not discouraged, Gina got her application in, nervously confiding “Hopefully… It would be great to have secure work since there isn’t much of that in the city. They say that there is insurance, and this is what interests me because of the girls but I must wait and see. I don’t think, to be honest, that I will get lucky, but we will have to see. Hopefully…”

Shortly after, Gina called me talking excitedly when I answered. She completed both oral exams, an interview and passed the physical exam. She got the job! She was just waiting
for confirmation on the start date, and details of the contract. She would go into work tomorrow. A few days later, though, her tone was discouraged as we spoke on the phone.

In the end, I am not going to work with the police. The salary was very little [1,800 Bs] and the work was a lot! Sunday to Sunday, and all day! You know that with the girls I cannot be working like that every day, and that schedule doesn’t work for me because, who would go and get the girls? And, beyond that, they wanted us to work night shifts on the weekends controlling in the bars—with our men, that bothers me. And do you know what made me furious? The day that they called me to tell me to come to work, it was to repress the protests that were marching on the street. They had contracted us for that! I thought, I am not going to go and [tear]gas my neighbours, and so I left it there…

For Gina, becoming a permanent wage-labourer was considered the ultimate goal, and on some level, she is still hopeful that something more permanent will come up, so that her children might then have medical benefits, and some security. But, after having got the job, she was struck with the realization of what a permanent wage-labour position would look like for a woman who wasn’t able to adapt to the rigid schedule. Further, the sacrifices she would have to make in order to “fit” the schedule were not worth the stability the job might provide (i.e., spending less time with her girls).84

I wish to belabour this point of uncertainty every day. Millar (2018) explores the way that the precarious life projects of catadores include constant struggles with “everyday emergencies,” which she goes on to describe as: a work-related health emergency; a last-minute debt-obligation to a friend; a flood (Ibid, 87). These everyday emergencies

84 Part of this “inability to be flexible” is, at least in part, a result of the eroded social fabric within which Gina lives—whereas other young mothers have their mothers, grandmothers and sisters to assist with childcare arrangements, the death of Gina’s father, and subsequent migration of her mother, mean she is dependent on her mother-in-law (also a widow to a miner) for help, which isn’t always possible, as her mother-in-law must care for her other grandchildren and suffers from an illness (chagas) that forces her to travel to the lowland region quite frequently.
demand flexibility in one’s schedule, a constant flow of cash on a daily basis, and important social ties to mitigate crisis. In the case of Potosí, the burden of “everyday emergencies” is often borne by women.

Whereas miners emphasized autonomy and flexibility as the main motivators for not being able to adjust to wage-labour, women’s experience demonstrates how, due to their essential and primary role as caregivers for their children, siblings, and parents, are truly restricted in the kinds of work considered options. They aspire to permanent waged-labour positions but cannot take them on in many cases due to constraints that require constant attention. Their mobility and autonomy are restricted by their social obligations. This is further exacerbated for women in Potosí, due to the truly limited nature of work options available to women with children. Although the notion of permanent, waged-labour remains a dream for most women and some men living and working around the mines in Potosí, the precarious nature, particularly of women’s livelihoods in the city, makes “adapting” to wage-labour, a gendered experience. Autonomy and its relationship to precarity, as was the case of Potosí, is navigated within specific terrains of racialized (and gendered) experience.

85 It is also often a racialized one. As, Anna Tsing, in *The Mushroom at the End of the World* (2015) demonstrates: Lao and White-American pickers use notions of freedom to describe what draws them to the seasonal (and thus precarious) labour in Oregon. Tsing is careful to note, however, that these discourses of freedom did not resonate among a minority of Latino pickers, who were constantly being monitored by the State and faced certain threats of deportation.

86 This is in fact quite an old discussion among feminist political economists and the role women play in social reproduction as exacerbated by neoliberal restructuring. See for example Kate Bezanson and Meg Luxton (2011), Tithi Bhattacharya (2016). For a case on how that is also a racialized experience, see Silvia Rivera Cusicanqui (1996).
Chapter 4: Labour as Embodied

4.1 Chasing Veins Underground

We had been a solid three hours underground, chewing coca and taking turns shovelling with Marco, Silvio, and Antonio. The day before they had drilled and set off their dynamite in search of mineral and today they were clearing out the rubble to see how close they were to hitting the vein they had been chasing. For a month, a mine engineer from the Empresa Minera Manquiri had lent them a diesel-powered air compressor on the condition that they would commercialize their production through him (and he would take a 20% cut), and so, they were trying to advance as quickly as possible with this new, diesel-powered, benefit.

For a while, the work was strikingly physical. Marco and Silvio alternated with their peon, Antonio, who was “putting in his time to eventually start to work on his own” to shovel loads of mineralized rock into the half-tonne wheel carts and push the cart out to the buzón, where they emptied it into the slide. Even though this kind of physical manual labour was often exclusively reserved for peons, Silvio the socio and Marco the segunda mano did just as much loading as Antonio. It was hard and strenuous work to be bent over at the hip for such a long period of time lifting the heavy mineralized rock. The person wielding the shovel would bend just enough to fill the shovel blade, and in one motion, would swivel about 25 degrees upward to toss the rock into the cart. Rarely did they fully extend their backs until they had fully loaded the cart, which took about 15 minutes to fill. As they got close to the floor of the area where they were working, Silvio
suddenly noticed a change in the grade of the mineral being dumped into the cart and, waiting until the cart was out of the way, he and Marco sat down on their heels and began poking and prodding at the higher-grade zinc, running their eyes up and down the rock face, digging with their shovels into the ground and tracing their fingers along the vein. Silvio was excited. He had been reflecting with Marco about where to drill next, to catch wind of the vein that they had stumbled upon, and didn’t want to waste any time. While they were planning their next position, they scraped away at the vein, digging down another few inches and collected the *puro* (pure literally, but used to refer to a richer grade mineral) quickly into a few pails and then into a sack. “This will be ours alone,” Silvio said when I asked him what they were planning on doing with the sparkly, purple flecked dust, “The Ing (short form for Engineer) isn’t here and has no idea what to even look for, so, we will forget to tell him about this find.”

After thinking about the direction of the vein, and where they could crosscut it to improve their overall production, the pair decided on an area which was, to my surprise, behind us and the place of the strike, about 20 meters away. “The veins will travel in this direction,” Marco noted when I seemed confused. “The trick is to catch it before it disappears. Sometimes they can become so narrow so quickly that we will lose it again.”
After they had decided on the next blasting area, we left the mine to sit and catch our breath. Everyone spit out their coca, which now tasted bland and metallic, and passing around a fresh bag we breathed in the cool outside air, chewed, rested, and chatted about the mine engineer. After about thirty minutes, Marco said, “It’s time to prepare for drilling.”

Marco readied himself, bringing the drill and its long iron bar into the work area in pieces from outside. He carried the large and bulky drill with ease. He stood and looked at the rock face for a few minutes, while Silvio hooked up the power and air hose lines. Then, he and Marco’s peon, Antonio, wrapped two pieces of fabric bandana around their faces, Antonio added an N95 respirator on top, and put the rest of the materials they would need.
within reach: a white plastic sack filled with ammonium nitrate and a pile of dynamite sticks which they had rolled themselves out of paper, complete with their long fuses.

Silvio turned to us. “Ready?” It will be pretty loud, so, don’t be startled, it’s part of the process. Kris, make sure you have the camera pointing to where Marco’s shoulders are pointing, and don’t be afraid to get right close to him.”

Outside again, Silvio fired up the diesel compressor, bringing the air hose to life and causing a loud rumbling roar to fill the cramped worksite and bleed out into the mine tunnel. Then, Marco braced himself. He started the drill, and placing his hand on the iron, diamond-tipped iron chisel, thrust his weight behind the drill into the rockface. Antonio, his helper, put his body close to the wall, and grabbed tightly onto the barreno, pushing it into the space Marco was directing, to get it started. The sound became so much louder upon contact and filled the senses with a repeated tinny jackhammer noise which, when combined with the compressed air, made the chamber disorienting. Once the hole was started, Marco climbed over the tubular leg which allowed him to swivel the drill and using his back as leverage, he held one hand on the drill and one on the stand, gyrating his body to move the bar in and around. Antonio watched closely, often grabbing hold of the bar to prevent it from slipping or jerking out of Marco’s control. Dust began to fill the chamber, our clothes, and I could feel my throat filling with a metallic and earthy taste. Marco cut a long hole into the rock face, about 1.5 inches in diameter, and about a foot in depth, moving closer and closer to Antonio, as the barreno disappeared behind the rock.
A shout jostled me from my fixated gaze on the pair, and I jumped back away from them both, frantically looking for Silvio. I was on edge. Even though Marco was only shouting to Antonio to get ready to move to the next target, I immediately thought something bad had happened, an accident perhaps. Silvio saw my reaction, and laughing, shouted close to my ear, “Don’t worry, Marco knows what he is doing, get in there right beside him, and get some good video.”

Marco and Antonio continued this well synchronized dance for about 25 minutes or so, but for me it felt like a flash. As Marco continued to drill the last holes, Antonio set to work with the dynamite sticks and ammonium nitrate. He quickly yanked another air hose loose, and with one hand gripping the hose frantically wriggling and spraying air, and a large cut-off plastic bottle in the other, he scooped the ammonium nitrate from the sack in one hand with the bottle and angling it towards the rock face, he began spraying the tiny, bright orange balls into the holes Marco had prepared. As he did this, he wove over and under the drill, still in motion and in Marco’s capable hands. I was amazed—the dust was so thick now, we could barely see detail, if not just the silhouettes of the two, and the odd stream of light from our headlamps. The camera couldn’t focus anymore. So, I dropped my viewfinder view to focus on his agility, on his movement as he blew the toxic chemical, with the clumsiest set of tools at his disposal, with accuracy and grace. Then, Marco finished, and Silvio turned off the compressor, and Antonio took to setting the dynamite into the holes with the fuses. A lull of silence settled on the group as Marco caught his breath and wiped the caked-on mud that had formed from the sweat of his brow. When all the dynamite was set, we headed down the tunnel, as Antonio lit the fuse.
When we were all outside, we heard the low rumble and pop of the explosions going off one by one. Thirteen holes had been drilled, and 13 explosions erupted, making the ground underneath our feet vibrate and shake.

Illustration 19: Marco and Antonio’s "dance." Española mine. Photo taken by the author.

4.1.1 Recognizing Skill and the Apprenticeship Process

Entranced at once by their skill and grace, I scoured the anthropology of mining literature for discussions about labour practices. But, as I read across time and space, it became more and more clear to me that, although extensive in breadth and scope (see Godoy 1985 and Ballard Banks 2003), there is very little engagement with providing ethnographic description and analysis about mine work. Perhaps apart from Jessica Smith Rolston’s (2014) ethnography on labour and kinship at the open-pit mines in Wyoming
and Daniel Tubb’s (2020) recent ethnography of small-scale miners in Colombia, the anthropology of mining literature seems to have taken mine work as a given, and not as a point of interrogation. And yet, as I alluded to in the previous chapter, miners were telling me there was something about the work itself which drew them to, and kept them mining in Potosí. Perhaps some of the explanation has to do with preconceived notions about artisanal and small-scale mining. Indeed as Walsh (2019) has noted, small-scale mining is often considered primitive and thus written off as unskilled (and thus the actual practices of the trade are under-explored by scholars) due to the kinds of materials and tools that miners use in their repertoires, or due to the fact that it is often done in association with industrialized forms, which are capital intensive and perceived to be highly advanced in technological inputs—thus, the more rational and advanced of the two. For development institutions and scholars, cooperative miners in Bolivia are referred to as belonging to the Artisanal and Small-Scale mining (ASM) category, a category which highlights both the sector’s apparent “informality” and underdeveloped nature. The World Bank (2013) succinctly sums up this characterization: “the informal nature and on the whole un-mechanized operation generally results in low productivity, the sector represents an important livelihood and income source for the poverty affected local

87 Smith Rolston’s *Mining Coal and Undermining Gender* (2014) returns to the miners and the kinds of work they engage in at mining operations at the large-scale open-pit coal fields in Wyoming. Echoing other concerns expressed by anthropologists concerned with the turn to “the community,” Rolston expresses the need to redefine our understanding of what mining labour looks like today in America. In contrast to what she describes as typical “nostalgic Appalachian” notions of what miners and mining labour look like, she argues that miners in Wyoming desire to be understood, not only as operators of new-age technology, but as keystones in everyday American life. With the initial desire to focus on gender production, she instead learns to see kinship emerge as the central important component of people’s experience with their jobs, women or men. Miners related to each other as kin, and attribute their closeness to the shared suffering and joys they experience while on the 12-hour shift—their identity is one that is formed in direct relationship to the material realities of their production. Although Tubb spent extensive time with subsistence gold miners in Colombia’s Chocó region, he does not analyze in detail the relationships between work practices.
population. It ensures the existence for millions of families in rural areas of developing countries.” Implicit in this description is that the work is rudimentary and backwards and people do it because it is necessary for subsistence.

Due to their visibility, the miners of the Cerro Rico de Potosí themselves have become symbols of persistent exploitation and backwardness as their bodies are put on display by international media and by the tourist industry. For example, an article published by the Guardian in 2012 notes:

Behind him followed five foreign tourists, here to see an anachronism in the 21st century, medieval mining in the Rich Mountain of Potosí. This cone-shaped peak is at any given moment home to as many as 16,000 shirtless miners, straining in dark caverns with picks, shovels, their own brute strength but little else… Chewing wads of coca to ward off hunger and exhaustion, some heft huge bags of rocks to the surface on their backs. Smaller, nimbler miners specialise in burrowing into tiny crevices to place dynamite charges. Most spend the workday like their ancestors did: breaking through rock with a hammer and iron chisel (Forero 2012, emphases mine).

In Bolivia, it is very common to hear the cooperative sector referred to as “primitive” and the mining methods as simply “rascando con pico y pala” ( scratching with pick and shovel). This comes not only from academics (see for example García Linera 2014, Espinoza 2008) but also from workers who form part of the industrialized mining industry (Barragan 2017b). I spoke with many former and present workers at industrialized mining operations and the vast majority equated cooperative mining with backwards or primitive mining methods that were in stark contrast to their capital-
intensive operations. Many noted that cooperative miners operate using the pirquiñeo\textsuperscript{88} or kajcheo\textsuperscript{89} system, ways of labouring that are looked down upon for their seeming dependence on manual labour and the colonial past.

Before we continue, it is important to note a change in the categories that we have come to learn in the previous chapter. In Potosí, socios and even some segundas manos who work in the mines are called capos or maestros by peons and other less-experienced miners. Maestros are mining experts who can identify, plan, and extract mineral from their mines through the deployment of knowledge rooted in collective knowledge and the visceral attuning of one’s senses. Miners who are referred to as maestros or capos carry that label with pride. Both Silvio, Marco, and Rambo (below) were maestros by the standards of their fellow comrades. Maestros or capos is sometimes substituted for “miner” since, as we will see later in this chapter, the term patron (patron or boss) or dueño (owners), are terms reserved for socios who do not work and instead deploy others to work in their mines or work areas. Although general, the term miner refers to these

\textsuperscript{88} Pirca was the term used to refer to the mine work that took place starting in the colonial period in Potosí consisting of building tunnel structures—pirca literally means “walls”—and it was the act of constructing tunnels from stones to prevent collapse in weak areas (Garcia de Llanos, 102). Good pirquiris—we can imagine them as being similar to good stone masons—were held in high esteem due to the importance of having stable tunnels and apparently, the “best were in Potosí” (Ibid). Over time, though, this specific form of work shifted to represent cooperative production in general, according to a former unionized miner in Potosi and labour leader, a system which “was against long-term mine development. Basically, just going in and selecting the good mineral and leaving all the rest—at the expense of mine stability.” In 1993, Antonio Mitre defined the Pirquiñero system as “the mine owner leaves the mine for others to exploit it, and without spending any capital, shares the spoils of production with them...this produces immediate benefits, but this ultimately destroys the mine.” (132). In 2014 Pablo Poveda, an economist from La Paz, would refer to the mining methods deployed by cooperatives as per this definition (34).

\textsuperscript{89} Mitre (1993) defines kaccheo as the system wherein “the owner leases out his mine to individuals who work it as they wish, and then give the owner 1/3 of their production in kind” (132).
kinds of workers, and explicitly excludes peones (sometimes referred to as

*trabajadores*—workers), patrones, and *dueños*.

While observing and sometimes working alongside miners in Potosí, I discovered that contrary to popular beliefs, the work was *complex*. Not only was it physically challenging—something that is recognized broadly—but it was highly skilled, heavily sensory and, even in circumstances where minimal tools were applied, the maestro’s ability to use their full range of senses was exceptional. One afternoon, I partook in some moderate purifying surface work with Rambo\(^{90}\) at Candelaria. A large part of my time at the mines on the Cerro Rico was spent with Rambo’s youngest daughter and family. I accompanied him into the colonial Candelaria mine on several occasions, but also spent countless hours outside of the mine with him and his family. Despite having worked in the Unificada Cooperative for over eight years, and on the mountain for over a decade, Rambo never became a socio. Instead, he worked as a segunda mano but was considered by many as a maestro.

At this particular time, through my practical engagement and incompetence, I was again struck by the ease at which he manipulated his rudimentary tools and his focused attention to the materiality of the ore he was working. As the following excerpt from my

\(^{90}\) Tragically, Rambo died on April 16, 2020, while working as a peon in one of the largest active mines on the mountain, Encinas. He drowned when the pump he was monitoring ceased to function. He had been forced to leave Candelaria in 2018 when the family was falsely accused of robbing tools from one of the work groups who owed Rambo backpay. Being forced to move mines meant losing his connections to people and having to return to work as a peon.
notes demonstrates, even what appeared on the surface to be the simplest of tasks (hitting a rock with a hammer) required so much more than kinetic force.91

I sit and watch Rambo attentively, desperately trying to mimic his gestures and see what his eyes see, what his hands feel: I don’t want to make his work any harder by having him have to keep teaching me, but it is hard to notice the difference in the minerals he is describing. We have been sitting for about twenty minutes refining, by hand, the mineral he has just brought out of the mine from a week’s work. Rambo’s processing always happens in the same place, just outside the front door of the house where he, his three children and his wife, live for “free” in exchange for their collective labour. Their pair of dogs protect the bocamina, just 10 meters away, from jukus (thieves) looking to take the tools or sacks of purified mineral left under lock and key by the other miners of the section.

Rambo plans on selling what he refines to one of the mills just a short distance away but wants to purify the grades first since he’ll get better prices that way. He lifts up the small sledgehammer he holds in his hand, and, using its weight and his strength as momentum, he brings the head down precisely onto the large piece of complejo (a mineral compound containing zinc, silver and tin) along the mineral he has identified and wants to separate from the caja (garbage). The rock splits along the vein, crumbling under the pressure and leaving larger chunks alongside tiny pebbles and dust. “See?” he asks me, gesturing to the sparkled purplish-grey insides which have become visible in this manipulation, clearly enjoying my inability to skillfully yield the mini-sledge I hold in my hand. He runs his finger along the rough surface, clearly satisfied with his work “this is zinc, and this darkness here, see the chocolate colour, this tells us it’s of good grade.” I shrug and he grabs another rock. “Look at these two rocks, they are about the same size are they not? Well pick them both up, what do you notice?” I did as he instructed, holding both rocks in each hand. “This one is heavier,” I said, gesturing to the rock that had yet to be hit. “Yes, it’s heavier because it has what we are looking for.” I was still confused and couldn’t figure out the relationship between the weight and the grade—if both rocks were mineralized, how was I to figure which was richer? Rambo, his youngest daughter Chela, his wife Norma, and I continued like this, for another 45 minutes until the sacks were empty and we were surrounded by a mixture of larger mineralized rock and garbage. Then, Oscar, his youngest, began throwing the larger pieces back into the sacks, and we, using hard bristled plastic scrub brushes imported from China and dish soap, washed our hands, and faces of the dark grey sediment that had since settled into our skin.

91 This excerpt was previously published (2019) in an article about production and circulation in the journal Economic Anthropology.
Beyond observation though, I found it challenging to get maestros to talk about the kinds of practices they had learned while apprenticing. For example, I would ask a maestro to describe how they knew certain skills—for example, how they knew how to identify a particular mineral and often, they would simply say, “I just know,” or “from practice” or “from my maestro,” but without much more detail. If I asked them to detail a particular process, like, for instance, how to do you know to drill in this place, and can you walk me through the steps, they would say, “That’s where the vein is.” And, although I entered the mine on multiple occasions and smelled, tasted, touched, and felt my body become part of that space, I wasn’t exposed to the same kinds of interactions that an apprentice would be exposed to. Try as I might, I never had enough practice, and thus practical knowledge, to understand the macro (identifying a potential mine site, prospecting work areas or vein systems) or micro (for example, how to purify and separate minerals or how to identify noxious substances to mitigate health risks) labour practices involved with cooperative mining in Potosí. By the end of my fieldwork, I did become familiar with some (but not all) of the language used to understand the mining process underground and could start to visualize the mining process and could by the end of my fieldwork identify zinc and lead. Silver, though, (aside from the notorious chocolate brown rosicler) remains a mystery to me.

My incompetence coupled with my observations led me to consider the embodied and sensory nature of mine labour at the cooperative mines in Potosí. As I struggled to scrub the shiny mineral dust from my hands or get the metallic taste of mineral out of my mouth after any kind work, I was reminded of the perhaps now cliché but profound
insight from Nash’s book—“we eat the mines, and the mines eat us.” The residue hang-ons of working with mineral continued to be a daily reminder that the work that miners do is deeply embodied (Noga 2012).

Illustration 20: Rambo purifying grades at Candelaria mine. Photo taken by the author.

Maurice Merleau-Ponty’s work on the phenomenology of perception develops an understanding of human practice which does not adhere to the traditional Cartesian distinction between mind and body, but rather roots subjectivity in our bodily being. He

92 For two summers during my undergraduate degree, I worked at an Exxon Mobil plastics factory in my hometown. I worked in the “metallizer chamber,” which sprayed aluminum dust onto the plastic sheets to make metalized film. We would come out covered with aluminum dust and I remember guys who had been working there for years joking about how they were scared to go through metal detectors at airports for fear of setting them off. I do not think, therefore, that this applies only to mine labour. See also Seth Holmes (2013), Fresh Fruit and Broken Bones, for a similar example with respect to toxic chemical use among migrant agricultural workers in the US.
uses “corporeal schema” to explore this practical grasp that we have of our environment. The corporeal schema is developed through social interaction over time and is in part derived from the image we have of other people’s bodies and their movement as well as through their reactions to ours. Maestros repeat that they learn the trade through practical engagement with their environment, as well as careful observation of their peers underground. In this sense, the mine site becomes the phenomenological field which allows for the possibility for maestros to become maestros. That is, people who can master their skills based on a finely attuned and developed sense of their environment. It’s not static, but this field provides for the possibility of recognizing that things we take for granted due to the sheer perceived “reflex” nature of a movement (for instance, habits) are skills that have been developed over time in practice (not through intellectual synthesis as classical philosophy would have us believe). My inability to “reason” my way through identifying minerals, for example, was likely due to my lack of habitual practice in these fields or environments. Clearly, then, the apprenticeship process, as miners note, is central to their formation as miners.

Polymetallic miners who are referred to as maestros, like Rambo, a first-generation miner and former bread maker from Villazón, and Silvio, a third-generation miner who has worked in manufacturing, construction, and sales, will tell you they depend on the skills and knowledge they acquired over time from other miners, family members, and friends, while working first as apprentices in the cooperative mines. Rambo had learned the skills that working on your own requires while working in the nearby Santa Rosa section. He had started out as a mineral carter who loads, operates, and unloads the one-tonne carts
from the blast site to the buzon) but had had a good boss who had taught him little tricks of the trade. Silvio, on the other hand, had learned directly from his father, who learned from his father, while working for one of the oldest cooperatives in Potosí, the Central Mixto.

Maestros use a variety of skills that they pull from a toolkit they have assembled socially over time working intimately with the materials they mine. Those skills are practical and concrete, as in the case of Marco knowing how to turn on, assemble, and operate the pneumatic drill, but they are also sensory, attuned, and abstract, for instance, like learning how to manage its weight and feel, and react to the composition of rock at the end of the metre-long chisel. Enrique, whom we met last chapter, is a third-generation miner who learned how to mine and identify potential mines alongside his father in the nearby mines of Porco. By simply observing the landscape, he demonstrated the ability to apply knowledge about geological formation, especially that specific to the very complicated vein mineralization systems like those present in the Cerro Rico de Potosí. From this knowledge he was able to open his very own mine, Guadalupe, from scratch. One day, standing outside of the mine chewing coca before entering, he stood gesturing to the surface of the mountain growing out around us: “People thought I was crazy when I said I was going to open up my mine back here. But, I learned, walking around this mountain with my father all those years, that that kind of formation [gestures to what appears to me

93 Enrique named the mine “Guadalupe” two years after opening it. He told me he named it after the Virgen de Guadalupe following his historic strike—he had prayed to the virgin for a whole week as he neared his breaking point, drowning in debts. Convinced he was close he prayed to the virgin all night before the strike. That morning, they hit the vein, and in her honour, they named the mine Guadalupe.
like a bump surrounded by fallen rocks], when combined with the direction that the veins here move, should point to a mineralized vein. And—he smiled proudly—I was right.

Two years later I struck a two-metre wide vein of zinc and all of my worries and doubts about not knowing what I had been looking for dissolved.” As another maestro told me one day, “There are no mining textbooks, at least for the kind of mining we do…we rely on each other for that.”

4.1.2 The Work: Kinetic Sensitivity and the Aesthesiological Body

By far the most challenging part of the process of understanding how miners learn to mine from others is without a doubt asking them to orally recount the knowledge they hold. Adelaida, a 78-year-old Paillira who has been working for over 50 years, first as part of the pre-revolution industrialized workforce, and then as a cooperative partner at the Unificada cooperative, identifying, selecting, and processing polymetallics, gave me what was a quite common response across the sector among seasoned miners:

Well, mining is hard work if you want to make money. The hardest part was always knowing (conocer) the mineral—silver, zinc…it’s not easy. But, after time one learns and then it is easier. I went [to the mines in the Cerro] with the pailliras, they showed me, “This is mineral, this you will select, this is not” and in this way I learned (saber) and more, and more, and more I became aware of how to find mineral, working and talking with my comrades.

More than miners describing the learning process, they described experience and repetition with a more experienced miner(s) as they key to their learning process. Adelaida’s response was common. At nearly all times maestros would point at the reference point on a rock face inside the mine, or would point at rocks they were sorting, and would say, “See? That is X, Y, Z mineral.” Often, they would make references to colour to describe the mineral they were identifying or ask me to run my hand along its
surface or pick it up to assess its weight. As I continued to speak with experienced miners about how they know what they know, the more it became clear to me that the socialized and collective knowledge they hold is both habitual and sensory.

Unlike other professions, the mining that maestros engage in is likely the most necessarily reliant on the deployment of all of one’s senses, since the majority of the work occurs underground and in cramped environments where the taken-for-granted conditions like daylight, relatively constant temperature and airflow, are turned upside down.

In the *Visible and Invisible* (1968), Merleau-Ponty uses what he calls the aesthesiological body to describe the “cohesive orchestration of synesthesia, kinesthesia and body-world symbiosis” (Chisolm 2008, 32). The body is both sensory and motor and acting upon the world is not an internal exercise of conscious intellectual reflection but rather a skilled bodily response in direct dialogue with, and of, the world: “every habit is simultaneously motor and perceptual because it resides, as we have said, between explicit perception and

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94 Miners in the State-run mining company, COMIBOL during Nash’s time in Oruro use similar language to describe how they identify minerals. For example: “The only rock that carries mineral is one we call allatullu. In the cupriferous zones one often sees something green that makes the rock look as if it is going to cry and you can find silver or copper, but rarely tin. Sometimes we don’t know what the rock is, but we know that we are going to encounter mineral in that zone. You might call it intuition; whether it comes from our own knowledge or the blessing of God, we don’t know, but we know when we are going to come upon the mineral. It is the combination of many factors, and we live constantly with the hope of coming upon it” (Nash 1979, 188).

95 We can perhaps understand this lack of need or ability to articulate the labour process using language with phenomenology. Ponty notes: “I am not in space and in time, nor do I think space and time; rather, I am of space and of time...My body has its world or understands its world without having to go through “representations,” or without being subordinated to a “symbolic” or “objectifying function.” (2012, 141).

96 The experience of one of your senses through another.
actual movement, in that fundamental function that simultaneously delimits our field of vision and our field of action (Merleau-Ponty 2012, 149).”

And the manipulation of tools does not replace the need for sensory engagement with our world, but expands it, building off a mastery of objects outside the body as they become an extension of it. Merleau-Ponty (2012), providing an example of a person learning to use a cane, argues that the skill is as much motor as it is perceptual, and that, over time, “When the cane becomes a familiar instrument, the world of tactile objects expands, it no longer begins at the skin of the hand, but at the tip of the cane.” (154).

Through my observations and some practical engagement I have created a short list (by all means not complete) of some of the ways that maestros used their aesthesiological body in underground and surface work—deploying what I believe to be an attuned deployment of various senses at one time, including: listening carefully for sounds and detonations or using their feet and hands to sense vibrations or movements from other teams working nearby; 97 using their sense of smell for strange or known odours or using the taste of their coca to assess possible toxicity; using their hands to feel the rockface (often in the dark) and feeling the pressure of a rock face at the tip of the chisel or how much the rock face pushed back at them) to assess where to advance and how deep to penetrate; using their sense of balance to assess mental clarity and thus possible gas

97 This is particularly important in some places where hundreds of miners are working underground at once and mines are piled precariously atop one another. There were several incidents where miners told me that what happened in one working group area produced an effect in their area (a cave-in for instance).
intoxication⁹⁸; using the sense of weight of minerals to assess grade; and using their sight (when possible) to identify colorations and contours of rock faces or veins. It is through this very practical and repetitive engagement with the materials that maestros mine that they develop “good mine sense,” in conjunction with their peers.

In some cases, the material conditions of the mine and mineral make deploying these skills challenging. Some minerals, for example, are harder to readily identify using observation, due to a process of overall declining grades in the polymetallic mines as noted in Chapter 2.⁹⁹ And miners noted having to make a shift from tin mining to polymetallic and having to learn new skills and refine their abilities due to an increase in “difficulty” or “complexity.” In this case, miners use a process of identification by association. Here they would use the geological formation terms like pyrite, or cassiterite, to refer to a vein or rock they found to assess whether it would be likely to have silver, zinc, lead or tin associated with that formation. Again, though, they identified this associative relationship visually and/or using tactile techniques.

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⁹⁸ Gas intoxication is common in underground mines since it is often released from the mineral compounds as ore is opened up during extraction. This is why ventilation shafts are so important for worker health and safety. But, due to high cost, and the organization of the adits, they are rare, causing miners needing to maintain heightened awareness. Most gas, though, is odorless, which means miners depend on other senses (like dizziness) to assess danger.

⁹⁹ Others are simply “unseen” by the naked eye; this is the case with oxides and sulfides, which I will discuss next, but also other metals like indium and Gallium (see Francescone 2018).
It is important to note that maestros not only use their senses to identify the mineral composition they are seeking, but as we have just seen in the short list above, they also use them to identify risks to their health and safety (Noga 2012, Tapia, 2008). One day I was walking on foot to Candelaria through Pailaviri when a woman stopped me. She was a guarda who lived in one of the huts closest to the transport drop-off point for workers but also for tourists entering one of the former-COMIBOL mines in this sector. She was carrying a wooden box with slots filled with brightly coloured rock crystals: aquamarine, purple, silver, translucent mustard yellow, and pink. She was selling them to

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100 Health, in general, is often under discussed in the literature on mining and, in particular, the relationship between work practices and health and safety. For two exceptions see Nash (1979) and Rolston Smith (2013).
tourists as souvenirs and I bought the first that caught my eye, a bright seafoam green crystal that was nearly transparent, for 2 Bs (about 0.40 CAD at the time). Proud of my purchase, I continued along to Candelaria and showed the stone to Rambo as he was readying to go into the mine. “Don’t touch that!” Rambo said, catching a view of my treasure, “that is copajira (commonly used to refer to acid mine drainage), it’s poisonous!” He made me put it in a black garbage bag, tie it, and throw it away immediately and then scrub my hands with dish soap. Another time, I was helping Burro to shovel rock after a detonation in his work area in Candelaria. I had been forewarned by another miner that I needed to be sure to wear a mask and long sleeves in this work area since the air was “toxic,” but, as we started moving rock and my body temperature began to rise (this work area was also known to be particularly hot), I followed Burro’s lead and took off my long-sleeved shirt, thereby exposing my arms. In between loads I was leaning up against the tunnel entry to the paraje when Burro returned and shocked, he grabbed my arm and pulled me quickly away from the wall. “You can wear short sleeves here, but if you do, you cannot touch the walls.” He gestured to the wall telling me to look closely. Along one of the ledges I could see a fibrous crystalline structured dust that had settled on the rock. “That’s arsenic, you need to be very careful here.”

Beyond identifying toxins, careful observation, communication, and being in a constant state of awareness were critical to identifying weak spots or fissures in galleries and workspaces which could potentially become sites for cave-ins or collapse. Miners also taught each other how to identify structural faults which could become fatal. This was an important part of the apprenticeship process. Taking time to assess one’s work area,
before and after detonation, but also while working to develop a vein was important to
preserve the safety of you and your team—being mindful, being sober, and being alert,
especially if you were a maestro, was an act of care for those around you.

Damian, a maestro who worked in the Bolivar mine with the Unificada cooperative told
me one afternoon that accidents were inevitable if miners didn’t learn how to listen to the
signs that the minerals and tools were giving you:

The thing with mining is that you need to know how to work, to pay
attention to everything you do. If not, you could die since there are so
many ways the mine can kill you. For example, if you don’t know what
a worn-out diamond tip on your drill bar sounds and feels like, then you
won’t know when to change it. If you don’t change the tip, the drill will
spin on the surface and then kick back into you and punch you in the
chest or face—this can kill you. In and of themselves the mines aren’t
dangerous, but they are dangerous if you don’t learn how to listen and
feel your surroundings.

As we have just seen, the apprenticeship process and miners’ enduring and practical
engagement with the materials they are mining affords miners learning the work with the
necessary skills not only to work in ways that can prevent accidents and minimize the
risks the work poses for health, but it also provides them with the toolkit, if matched with
a good maestro or capo, to be able to make a (albeit modest) living. Francisca, a pailliri
and llampira who worked for several decades in mining well into her seventies, told me
that she

liked selecting mineral with my dad. He told me, this is silver, this is
tin, this is worthless, and I helped him as a llampira that way at his
mine…I didn’t make much money, just enough to survive. I tried to be
a merchant once but it made me scared to invest the money I had
suffered to earn like that. It was preferable for me to work with my own
hands and know with security how much I was going to earn and spend
from that sacrifice than taking a risk and trying something new…Now I
have arthritis and my hands are hot and sore, but that is an illness I wear with pride.

Maestros often told me that especially in the past, even though they made a modest living, it was enough to survive and provide for their families. Many I spoke with aimed to put their children through school, and some had. Most were proud of their bodily sacrifice which led to their children becoming professionals (Noga 2012). Jeronimo, a retired cooperative miner who had worked for decades at the mines in 9 de Abril cooperative walked with a limp and was hunched over as he sat in the recliner at the retiree’s office one afternoon. “I got this from a fall,” he said, gesturing to his leg. “I almost died that day, but it was because I stopped being careful. But ultimately it was a small price to pay, I was able to go back to work and get my boys to study. One is in the mine, but the others are professionals. Today I limp with pride because of that.”

The structure of the apprentice model within the small-scale polymetallic producers of the cooperatives fomented very important forms of solidarity and support, without erasing, however, the hierarchy, the structure of power and respect those maestros or seasoned socios have in training and forming younger and less experienced miners. Hierarchy exists among small-scale miners in Potosí, but it is not one that is necessarily exploitative even if structurally it has that potential.  

101 For an extended discussion on how hierarchy within the cooperatives was changing in the nineties due to a breakdown in the social relationships that surrounded mining, see Absi (2005).
For maestros who carve out a living (albeit challenging, strenuous, risky and dangerous) working in the small-scale polymetallic mines in the Cerro Rico, the ability to strike a vein or to make a living with one’s own hands and skills was a central source of pride.

4.1.3 Working with One’s Hands as Liberating

I was sitting on Julia’s front stoop in the upper mining neighbourhood of Calvario, chewing some coca and gossiping about the women’s pailliri association and the heavy-handed management one of the local NGOs was applying over the leadership. I had been curious about Julia since I saw her drinking with the guys at the Central Mixto Anniversary. Even though she was retired now and in her 60s, Julia was obviously strong. She was broad shouldered and stocky, outspoken, and hard, but was clearly respected by the men in the cooperative for her opinions, which she shared regularly with them whether they “wanted to hear them or not.” Julia had worked as an underground miner, a socia, working in tandem with another woman, Isabel, for nearly a decade. As we were chatting on her stoop, Julia was showing me her hands and describing her daily routine. She would wake around 4 a.m. to prepare the day’s food for the children in her house, would have some breakfast, and then would head off to the mine where she and Isabel, after a chat and pijcheo, would work “like any other man” for eight hours in the mine. Then, they would head back down the mountain to their respective families, prepare the food, wash their clothes, and crawl into bed around 10 p.m. to start all over again the next morning. She confided in me:

I have cancer you know, uterine cancer. The doctors say it’s from me working in the mine. It cost me a fortune. I’ve spent all my savings to have the treatment and surgery. Now they say it’s gone. I must keep going to my check-ups though. I guess we came into contact with a lot
of bad stuff in there, breathing it all in—that’s the miner’s sacrifice. But at the time I wasn’t thinking about that. I was thinking about the work. I was obsessed, really. I was obsessed with becoming as good as my comrades. Isa you know, she couldn’t handle the drilling. She was good at planning and finding the mineral, but me, I was good at drilling. I was very strong—not like now, the cancer really has me weak—I was very strong and good at it. And, hey, we did okay. I was able to buy this house, we both put our kids through school. At first, all the guys said we wouldn’t be able to do it, and called us machitos (lesbians, but literally means little machos).

I interrupted her. “If the guys made fun of you, how did you come to work underground? Did you just do it one day?”

No, I was determined to prove them wrong. Since I was a pailliri first, I knew something about the mineral, and one of my friends from the cooperative helped me, he didn’t care those others made fun of him. Once I learned how to hit the barreno and not get too tired, I just practiced and got very good. We were motivated by our families, by our hunger. And I’m very stubborn. After a while it became clear that we weren’t going to fail and by working with our hands and suffering like our compañeros, we earned respect in the cooperative. I became a leader—not just a leader in the pailliri association, but a real leader in the mining cooperative. Now I’m respected and I often get re-elected because I am terrible (jodida). But I earned that because the guys could see I know how to work, with my hands. Isa is softer but I am hard, but we both know how to mine, and everyone knows that now.

Although I never heard anyone refer to Julia or Isabel as a maestro, many of their compañeros referred to them as miners, not as pailliris or other specialized categories.

They had, it appeared, gained respect by knowing how to do the job. Mario, a socio of the Central, told me, “We don’t mess with Julia. Sometimes we joke about her liking women, you know, but it never goes beyond that because well, she knows the work just like us.”

Even though Julia never really shook the labels that questioned her sexuality, they didn’t bother her anymore, she knew she had proven herself—she even worked (but not for very long) alongside some men before she got too sick and was forced into retirement.
Adelaida, another woman, this time a pailliri, also expressed a similar experience of working through or overcoming gender-based norms and biases by developing hard skills through mine work. She noted to me in an interview that she felt like she was working as an “equal, alongside the men” since she often worked alongside men on the surface as they purified their grades before selling the tin to the centralized mining bank. She confided that she even taught men to be better at refining since she was able to fine-tune her “mining sense” of mineral identification working above ground—a skill that she felt more equipped to teach to her underground comrades.

This was a common theme for all the socios or maestros I spoke with. The mine work, although challenging and dangerous, was also liberating. And, as we have seen in the previous chapter, being a good miner provided a sense of comradeship, which is built upon a relationship of trust, mutual hard work but also mutual care which includes important moments of “downtime” of drinking, laughing, and eating together as well as periodic sacrifices and offerings.

When combined with this socio-political context then, mine work provided maestros like Silvio “to work independently to refine his skills and overcome challenges without the

102 In Climbing like a Girl, Chisholm (2008) notes that similar to Julia and Adelaida’s experience, free-climber Lynn Hill was able to earn respect in the primarily masculine-dominated field by becoming exceptionally skilled through a long and practical engagement within the free-climbing environment. For Chisholm, practical embodiment of skill has the potentiality to overcome structures of gender-based discrimination.

103 Gose (1994) describes how processes about feeding and spending time with labourers during the minga in Huaquirca, Peru were essential parts of labour exchanges, beyond the simple lending out of labour services.
pressure of a boss overseeing his productivity”; it gave Enrique the ability to carry on the family legacy, something which afforded them “respect since I, like my father, am well-known for my skills of being a real miner, a good miner (emphasis his),” and it gave Marco the opportunity to do a job which made him proud and allowed him to work with “dignity.” Being a skilled driller made him feel, “useful and smart, unlike when I worked in the Chapare\textsuperscript{104} where I was bored and always following someone else’s instructions or running from the police.” The more maestros had control over the productive process, which included an important process of working the materials they mine, themselves, the more it contributed to their sense of pride and mastery of the gamut of skills required. But not all the work done on the mountain is considered “mining,” and this, more than their own labour practices, is what maestros wanted to talk about.

\section*{4.2 That is not Mining}

As I noted above, it was always challenging to get socios to describe their work. And, we have determined that this could be attributed, at least in part, to the deeply sensory nature of their work. But the same was not true for getting a socio to talk about what they considered was not mine work. When asking them about the way that mining practices had changed, or the ways that the changes in regimes of mining on the mountain had changed and thus impacted their work, I often got much more detail about how the mining of “today” was not mining. At first, I didn’t seriously consider these comments,

\footnote{The Chapare region is in the tropical part of the Cochabamba department where coca is grown, primarily for cocaine exports.}
equating them to old-timer nostalgia and inter-comrade jealousy, but I started to notice patterns wherein miners were equating particular kinds of mining, or work relationships, to “non-mining.”

I commenced this chapter with the deep skills and knowledge that miners in Potosí have about their mines and the minerals they extract from them. The previous vignettes all come from miners who considered themselves to be maestros, socios who had been trained in the “old ways of the trade,” who had worked (or continued to work) in working groups with less than ten other people (between socios and peons). These miners had also spent most of their trajectory mining for tin and its by-products but re-trained themselves to search for silver/lead/zinc/tin (polymetallics) during the last stage of their careers. They exclusively worked in polymetallic mines. Many of the miners with whom I developed close relationships were these kinds of miners, miners who referred to themselves as “a species on the brink of extinction,” as explained to me by Aniceto, a long-time maestro who worked in the Unificada Cooperative for over three decades. If we recall Chapter 2, on a structural level, mines that had less than 20 people as the total workforce represented 59% of the total number of mines, but only 15% of the total number of miners on the mountain—they definitely represented a minority. In nearly all the conversations I had with these self-defined miners on the brink of extinction, they often coupled their analysis of their own experiences with the work that, according to them, was not mining. The following three encounters summarize what I would say were
the three common subtexts for discussions about “not-mining” from within the cooperative sector. 105

I was walking out of Candelaria with Aniceto after having been underground chatting with him and moving carga for a few hours. We were hot and he was tired (having done most of the heavy lifting) and a group of tourists were about to arrive to visit his and Burro’s parajes. He wanted to rest a bit before the “show” he said. As we were leaving, we heard shouting coming down the main tunnel. “Get out of the way!” shouted one of the young men running ahead of a loaded cart that was headed out of the mine—he snarled at Aniceto, shoving him out of the path. We jumped to the side while two young carters struggled to corral the cart which weighed about a tonne out of the mine and to the buzon. The two worked for Tinku, the most important (and hated) socio in the mine, who at the time was deploying between 15 to 25 miners to work for him. Tinku, who would show up at the mine to drink with his workers, had a segunda mano operating a pneumatic drill, and the rest were peones who were acting as loaders and carters. We continued down the tunnel, with Aniceto clearly bothered by the boys.

These kids today are spoiled (derogatory). And why wouldn’t they be? They just treat this like a holiday. They don’t know us, they don’t respect those of us who have been in this mine since we were younger than them! And why would they? They’re only doing donkey work (brute work). They’re here to make some fast money and it’s perfect for Tinku because he is only interested in becoming rich. There’s no fun in that, there’s no chase.

105 I also had several conversations, as I mention above, with members of the unionized COMIBOL workforce, both active and retired, who noted that the work that cooperative miners do is not mining, often comparing it to the capital-intensive mines they work/ed at. Their justifications were nearly all based on observations that the pirquineo system is irrational, dangerous, and inefficient.
As we learned in Chapter 2, since miners were forced to transition from tin mining to polymetallic mining due to low tin prices and overall diminishing grades, the mode of production also changed. Now, miners are forced to focus on quantity over quantity, which ultimately requires more capital investment within working groups, and which has the effect of increasing the number of hyper-specialized workers—peons—to keep up with the pace of the pneumatic drilling and explosions going off. These peons, according to Aniceto, are not in it for the long-term prospects of becoming skilled maestros but are simply looking to make some quick money. In this working group, the chilenos (the Chileans\(^{106}\)), a family of young brothers, had all started working to save up to buy motorbikes (whose prices were quite low now thanks to increased exports from China), which were becoming all the rage among young men in Potosí.

As many more workers are entering the mines, but without having had the chance to acquire the skills, know-how, and sensitivities of their predecessors, their roles become specific (hyper specialized) and unchanging. I spoke with many peons who worked in the larger mines like Caracoles, Don Roberto and Encinas and had been peons for several years, and who didn’t see a future for themselves outside of working for patrones as specialized carters or loaders.

In another instance and at an oxides mine at the back of the mountain, I met Alfredo sitting outside of the 25 de Mayo mine while speaking with friends of ours that we had

\(^{106}\) They were not Chilean, they were from Caiza D, a small town close to Potosí.
gotten to know during Carnival. Alfredo was an older miner, who had worked for many years at the neighbouring Milagro mine but had, over the past decade he noted, made the decision to leave the mine when oxides became the dominant form of production.

Milagro, he said, was a huge mine, which crept up and up inside the mountain, but that was like a giant cheese inside, and at permanent risk for collapse. When I asked him how the mine work was done in Milagro, he said to me, “What they are doing there now isn’t mining.” He elaborated:

Today in Milagro you are not looking for veins, since your objective is to just move as much material out of the mine as possible and so you have lots of peons who are just constantly running mineral out. Everything in there Manquiri will buy so the guys aren’t looking for veins. Basically, I was working on my own for most of it. I would prep my area manually since we’re not allowed to have drills or air up here. After an explosion, I would tuck myself into an area that I thought looked secure enough, and I would just start banging the shit out of the rock face, and just hope that as the rock came down around me, it wouldn’t crush me. That’s not mining. Then I would have to move the material out—so I’d get a couple buddies or their peons to help me, and we would load it into the Manquiri trucks. After a few near misses, I decided I couldn’t do it anymore. You see, we can’t do anything with oxides, and the mills don’t have the capacity to do anything with it either. We are stuck, Manquiri is the only company that will buy from us, they know it, and this forces us to gift (regalar) our production.

Many socios I spoke to often were quick to distinguish oxides mining from polymetallic mining methods since it did not require any vein pursuit, and simply required the movement of material from inside to outside of the mine. Oxides are mined for their silver content, which, unlike in the polymetallic mines which follow a vein structure, is disseminated due to both environmental and social factors. According to an early geological study from 1946 commissioned by the Empresa Minera Unificada prior to its nationalization, French geologist Turneaure was the first to identify the important superficial silver deposits (pallacos, see more below) as well as the oxides deposits.
According to Turneaure, the original vein structures in the oxides zone were exploited due to their high-grade quality during the colonial production period. What was left of the silver, now in much smaller “little veins (vetillas),” through a process of erosion during heavy rainfalls in the city, became “detached due to the high concentrations of iron as dust, and disseminated with erosion…the silver minerals in this state [as oxides] can rarely been recognized…” (Turneaure 1946, 37). This means that, instead of being able to readily identify a vein using the sensory methods that maestros depend on, that skill is rendered redundant. Instead, it is replaced by the sheer ability to move massive quantities of earth out of the mine and onto the trucks, which in turn requires more hyper-specialized labourers, in this case, peones, working as loaders and carters.

Back at Candelaria, Rambo and I were sitting out on top of the loading bays at Rosario chewing coca and chatting. Dukey and Tarzan, their two guard dogs, lazed out beside us soaking up the sun’s hot rays, and their six chickens, the “rockstars,” ran about desperately picking bugs out of the piles of refuse (mine and human) which had sedimented another super-surface that was hard and compacted from the rains. He had just come out of the mine from doing some pre-drilling prep and was calling it quits. He still had his thick, pink headband plastered to his sweaty forehead, making his hair stand up wildly behind it, thus giving justice to the nickname his fellow comrades had given him. We sat quietly looking out over the downward slopes of the Cerro Rico and out onto

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107 During the first phase of production at the Cerro Rico de Potosí, silver grades averaged an incredible 7,000oz/t, which if we compare it to the overall mass of a tonnes of material, represents nearly a quarter of the mass! Not only was silver visible on the surface, but it represented a quarter of the material being extracted from the mountain. I will examine this more closely in Chapter 6. (See: Wendt 1890).
the narrow valley which cropped up again to meet the Kari Kari mountain range, into which the series of colonial-era dams had been built, providing the city and the mills with water. As we sat in the mid-afternoon sun, the cold wind blew mineral-laden dust all around us. Directly in front of us, and to our left, we could see that the diesel-powered loaders had nearly removed the top off the hill that sat between us and the highway out of the city. “It’s impressive, isn’t it?” I said to Rambo, “Just three days ago the company wasn’t even there, and now, half the mini mountain is gone. I suspect they’ll be done there by the end of the week and moving on to mine somewhere else on the mountain.”

Illustration 22: Looking out from Rosario as Manquiri removes a hill. Photo taken by the author.

108 All throughout 2016 and into 2017 these dams had dried, and the city was facing a severe drought. Mills had periodically been ordered to shut down and houses in the upper sections of the city were forced to ration water to once a week, depending instead on any water collected from the makeshift tanks that had been set up and filled by cistern throughout the neighbourhoods. Manquiri’s operations had not, and the plant continued to draw water from the precarious watershed.
“Mine?” Rambo repeated to me, almost annoyed, “That’s not mining, not even close. Do you see any miners in sight? Those “miners” are truck drivers. The shovel scoops the dirt into the dump truck and the dump truck drives it to the plant. There is no planning, there is no searching, they are just taking it, taking all of it. Manquiri, like the COMIBOL, is a bureaucracy. Run by professionals, people with degrees, who have no idea what mining is—maybe they’ve never even seen a vein. And yet, they make it seem so complicated, giving them all special positions—big truck driver #1, driver of an even bigger truck #2 (he laughs at his own joke). And, at the same time, they are ruining the structure of the mountain. Look,” he said, turning around and pointing up to the upward rising ridge in between the Santa Rita and Rey Socavón mines, “that empty space—that never used to be there. You can see the scrape marks that the shovels left behind. And now? We face landslides when it rains hard, and, you know what? I’m worried that Santa Rita will be buried one day because of that. No, that’s not mining. They don’t even have Tíos.” (His emphasis).

Rambo was clear in his analysis. What those truck drivers were doing for Manquiri wasn’t mining, and it wasn’t mining because the workers were not engaging in the labour familiar to Rambo and his comrades, for them, they weren’t doing anything but moving dirt.

As we shift into oxides and surface deposit mining, we see that very visceral and sensory mine labour that maestros know becomes irrelevant. From their perspective, when there
is no need for using one’s senses to find veins or purify grades, these ores might as well be dirt. Working with the mineral happens completely downstream in the process, in the case of Potosi, at the Manquiri plant and other mills in the city, where the workers’ knowhow is replaced by large-scale industrial operations.\footnote{109}

From these three examples, we can find a few common threads. The first, and perhaps most important, is the claim that miners are making about the work itself—that today’s workers (note: not miners) are not performing the same kind of work (due to declining grades or ore composition, or due to the new composition of the workforce itself) since they are not pursuing veins. As a result, they say they are: 1. finding it more difficult to apply the skills they have developed over time under these new conditions of work in the polymetallic mines, and 2. That their skills are rendered redundant underground in the oxides mines or are totally unnecessary on the surface deposits that Manquiri is working.

The sense of loss or lament that socios and their retired predecessors experience at the cooperative mines of the Cerro Rico emerges from the contrast to the present conditions within which they find themselves dispossessed from the productive process.\footnote{110} This dispossession results in an overall loss of control over the productive process, a space that

\footnote{109} According to Marx, “The machine therefore is a mechanism that, after being set in motion, performs with its tools the same operations as the worker formerly did with similar tools…The machine in industrial operations replaces the worker. (1990, 495-497)
\footnote{110} Henry Braverman (1974), himself a tradesperson, having been trained as a coppersmith, shares comprehension with the sense of loss that the miners are confronting. Rejecting this loss as a claim to a romantic nostalgic past that denies technological progress (a critique he notes comes from Stalinist Marxist circles) he says: “I had the opportunity of seeing at first hand, during those years, not only the transformation of industrial processes but the manner in which these processes are reorganized; how the worker, systematically robbed of a craft heritage, is given little or nothing to take its place” (5).
was crucial for maintaining some sort of counterbalance to the overall disadvantaged position they find themselves in within global commodity markets.

Sociologist Henry Braverman (1974), following Marx, notes that as the capitalist mode of production took hold over the shop floors and workshops first in England and then in the US, the long-developed skills of tradespeople (highly skilled in strength, abstract thinking, and sensory sensitivity) were displaced. They were replaced by a highly managed division of labour which parceled out tasks, permitted the imposition and control of time, and enabled the imposition of more consistent and controllable conditions upon which surplus value could be extracted from a larger volume of now hyper-specialized workers. This created a division between the managed and the managers, but also between a select few highly skilled individuals and a mass of one-dimensional workers. The impact for tradespeople was catastrophic, not only due to a loss of place within the ranks of the new industrialized working class, but due to the loss that signified in terms of worker satisfaction, the sentiment that working with your hands, and skill mastery, produced for the qualitative experience of work from the perspective of the worker.

111 He doesn’t use the term one-dimensional, but I think it is accurate enough, given that he notes the loss is being able to comprehend processes in their totality, and only learning to do one very specialized and specific task in the capitalist factory setting—so, workers undergo a process of narrowing and limiting of their skill set in favour of a more standardized approach to production. It is important here to emphasize that I don’t actually think this is a process of deskilling, since, as Braverman notes, this labour still requires skills, but it is the loss of breadth and depth.

112 Braverman continues: “The capitalist mode of production systematically destroys all-around skills where they exist and brings into being skills and occupations that correspond to its needs, Technical capacities are henceforth distributed on a strict “need to know” basis. The generalized distribution of knowledge of the productive process among all its participants becomes, from this point on, not merely “unnecessary,” but a positive barrier to the functioning of the capitalist mode of production... Every step in the labour process is divorced, so far as possible, from special knowledge and training and reduced to simple labour.” (57)
It is important to note that although miners insist that the kind of mining happening now is “not mine work,” it still requires skill. Loading mineral carts all day is arduous and trying and requires manipulation of instruments with the body that are challenging. And so, it is not a total process of deskilling per se, but, as Bravermen notes, a process of becoming workers who can only do one specialized task, as opposed to the broad spectrum of abilities they had prior to specialization. Marx, in *Capital Volume 1*, notes a similar tendency in the shift towards manufacturing wherein it “creates a class of so-called unskilled labourers, a class strictly excluded by the nature of the handicraft industry. If it develops a one-sided specialty to perfection at the expense of a whole of a man’s working capacity, it also begins to make a specialty of the absence of all development (470).”

With that loss over their role and mastery within the productive process in the mines comes a sense of loss that is connected to socio political relationships, to comradery and respect, and to dignity, which, as we have seen over the past two chapters, make up what is considered mine work in Potosí. In current day cooperative mining in Potosí, the conditions of mining as well as the organization of labour on the mountain have changed. For miners, this means changes not only in how they deployed their skills, but also how

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113 Tubb (2020), notes that these sociopolitical tensions emerge when the alluvial gold mines in the Chocó region in Colombia transition from artisanal production wherein subsistence family economies dominate (and gold mining simply supplements basic cash requirements for subsistence) to small-scale mines which rent family-owned mines to make them more productive, and quickly deploy waged-labourers and also dredgers and excavators to upscale their production in order to accumulate (albeit modest) wealth. This he views as a strategy of “rebusque,” shifting one’s economic practices to guarantee some sort of an economic future that is dependent on capital accumulation. Many of these strategies, he shows us, fail to fulfill the hopes and dreams of the operators.
they organized their mines. But since we have been demonstrating that their labour is intricately linked to broader social, economic, and political processes, those changes haven’t stopped the site of extraction, and in fact have been producing a ripple effect into even the most emblematic of “mining practices.” As Rambo noted just above, the work that Manquiri’s workers are performing isn’t mine work, it’s something completely different. So much so that, “they don’t even have Tíos.”. Changes in the cooperative mining industry in Potosí are producing impacts that are impacting miners’ overall sense of solidarity and comradeship, their skill and expertise, and as we will see next, their ritual obligations to their mines and the Pachamama.
Chapter 5: Ritual Consequences

We walked for what felt like forever down one of the main entrance adits of the Siete Suyos mines in isolated Southern Potosí. The tunnel was wide enough for a diesel-powered locomotive to have pulled more than a dozen ore carts at once, but that hadn’t happened since the COMIBOL stopped operating the mine according to Adolia, a socia of the Cooperativa Minera Siete Suyos. “I want us to stop at the Tío first,” she said, as I huffed along behind her. “It’s impressive, you’ll see, it’s where the miners used to ch’allar before heading off to their work areas.” We came to a fork in the rail system, and she gestured to my left. “There he is.” The Tio in the main dining hall underground at the Siete Suyos mine was about eight feet tall, he had a large pair of curled ram horns protruding out of his forehead, long chiseled facial features, and a thick black goatee (see Illustration 22). He gave off an air of royalty, sitting upright and stoic on a throne, his back draped in a red cape, but he was wearing loosely fitted miner’s clothing, including the tall characteristic black rubber boots. The only thing that appeared out of place was the erect penis protruding out from his pants. The entire human-like and larger-than-life sized body was covered in colourful paper streamers and confetti while the floor of the mine around him was littered with bright-red cans of beer, half smoked cigarettes, empty small plastic bottles which often hold full-proof cane alcohol. Sitting around in this large and damp open-space underground area, Adolia passed around some coca leaves to the group of funding representatives from a Canadian labour union who were visiting the

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114 In 2016, just months before I commenced my official fieldwork in Potosí I worked as a consultant for the Center for Mining Promotion Bolivia—CEPROMIN. For three months I visited many of the traditional polymetallic mines across Bolivia’s tin belt—mines that had been run previously by the COMIBOL and that now, following the privatization, were operated by cooperatives.
women in their mines as part of a funding mission to assess the effectiveness of their modest grant. Adolia explained that prior to going underground, the COMIBOL unionized miners would gather here in the dining hall to ch’allar with the Tío—“to ask him permission to work and for protection for the day.” Then, they would come back to this place to have lunch before disappearing back into the depths to complete their shifts. “Some miners continue to come practice the old ways,” Adolia confided as we questioned her about the streamers, “but less and less they come every day, instead opting to celebrate the Tío on our anniversary.”

Illustration 23: Ch’allando the Tío in the main dining hall underground at Siete Suyus. Photo taken by the author.

The Canadian rank-and-file manufacturing workers were as impressed as they were horrified about the prospect of sitting underground with this larger-than-life devil figure on lunch break, and the 15-hour trip back to La Paz was spent with lots of chatter about
these miners and their customs. I too was impacted. It felt like every time I went into a mine and ran into a Tío, the stories that accompanied these anthropomorphic clay statues along with the contrasts of the bright colours against the drab greys underground stuck in my mind. When I finally arrived in Potosí to complete my fieldwork, Tíos and the ritual practices and significance that surrounded them were on my mind. I was surprised and dismayed then, when I barely interacted with miners who referenced them, and was rarely given the opportunity to visit one.

Likely due to their compelling nature, but also due to important work to complicate notions of the relationship between culture (broadly speaking), customs, and the working class (Nash 1979), devil figures and their relationship to the working people in the Andes have been the object of study for anthropologists since June Nash published her ethnography, *We Eat the Mines and the Mines Eat Us* (Eddleman 1994). Perhaps no ethnography in the Andes has had such an impact on popular culture and the representation of ritualized practices as that book and the studies which followed it.115

Tíos, as they are referred to in Bolivia, are given life as material beings in the clay statues that are erected in their honour. Historically Tíos were built underground, occupying sites of former extraction. Anthropologist Pascale Absi (2005b) notes that, although the term itself likely has had and has multiple meanings over the years, there are a few reference

115 It is my impression that Nash’s work is important for Bolivia and perhaps the Andean region more broadly in that it legitimized and in some respects breathed new life into a ritual practice that was, as she herself notes, considered “Indian” and “backwards.” Tíos have become an important icon for “Andean culture” and I think, at least to some extent, this has to do with the ethnography and the attention it drew for decades after to the importance of studying ritual as part of Andean working-class culture.
points to what the word “Tío” represents contemporarily for miners in Potosí. The first she notes is that Tío in Quechua is closest phonetically to the Quechua word $T'iyu$ which means sand, which the regional mythology associates directly to the devil figures. Second, Tío today literally translates as uncle, which indexes the kin relationship that miners have to their Tío. It also simultaneously indexes a relationship of respect and hierarchy—campesinos often refer to someone as Tío from outside the community. It can also connote having a relationship of economic obligation with someone (99-100). In Bolivia, and across the region, miners can also refer to these figures as diablo (devil), Supay (soul/life force of the ancestors; devil later), Huari (devil) and Muqui (devil) in Peru.

Tíos have come to represent perhaps the most iconic of mining symbols in the Andean region. ¹¹⁶ Maybe it is their physical representations that have made them so compelling as an object of study. Indeed, to outside eyes, some Tíos impose such a terrifying presence it is hard to forget them. Some are larger than life forms, with terrifying devil faces, life-like marble eyes, some can be dressed as military men ¹¹⁷, as gringos or miners, whereas others look more akin to the devil. Most have large erect penises which reinforce the Tío’s role in its productive and reproductive forces. And, all are underground, which, among the depths of the dark and dusty mine shafts, adds to the overall sense of terror to outsiders. Nash’s ethnography spurred a series of anthropologists to study the relationship

¹¹⁶ Salazar-Soler (1998) traces the existence of anthropomorphized mining deities across time and space throughout Europe and the United Kingdom, many of which definitely resonate, she notes to Muqui——the devil figure revered in Peruvian mines.
¹¹⁷ Vladimir Diaz, in a personal communication, mentioned a particularly chilling Tío dressed as a military soldier underground at the Huanuni mine.
between devil figures, ritual practices, and working-class culture in the Andean mining region, the most recent culminating with Pascale Absi’s impressive ethnography, *Los Ministros del Diablo*, the cover of which has a full glaring shot of a terrifying, large red Tío.¹¹⁸ It is important to note that although Tios are the most emblematic of mining deities in Bolivia, they are not the only ones.

In her ethnography, Nash explores the collective and individualized ritual practices that miners perform to fulfill their ritual obligations to the beings that inhabit the mines and act as gatekeepers to its metals: Tíos, the Pachamama, and mountain spirits. Nash describes the K’araku and the Ch’alla as ritual acts (involving chewing coca, offering alcohol and cigarettes, offering animal sacrifice, and other elements) which enact a strategy of “appeasement and restoration…satisfying his [Tío’s] appetite…keeps him from unleashing destructive forces…[and] restore[s] the equilibrium of productive forces upset by mining” (317). For Nash, the ritual practices surrounding the cult of the Tío serve to reinforce the solidarity of the working group (prior to the 1952 nationalization) and then subsequently more broadly across the sector as a class. She argues that miners have consciousness as a class and this is (partially) demonstrated through their ritual engagement with Tios.¹¹⁹ Absi, writing from the cooperative mines in the Cerro Rico de Potosí in the nineties, observes similar ritual practices as they unfold. Absi (2005b), in

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¹¹⁸ For a discussion about how these analyses spread like wildfire across the continent, as well as some overlapping themes in the experience and understanding of the devil across time and space, see Edelman 1994.

¹¹⁹ In his historiography of the Bolivian working class, Rodriguez Ostria (2014), also notes that the daily aculliku (ch’alla/pijcheo) underground with the Tío served to strengthen collective consciousness and solidarity at Bolivian mines in the nineteenth century. (see for example, 132)
greater detail than Nash, describes the rituals which happen at the level of the working
group——the Ch’allas to the Tío and the sacrifices to the Pachamama and the
celebrations dedicated to the Virgens and Tataq’aqchus. She notes a “circular relationship
between the worker and their role in the rituals: the organization of the cult depends on
the organization of the relations of production which in turn legitimizes the labour
relationships (185).” For Nash and later Absi, the spheres of production and ritual
practices are intimately linked, and the Tío plays a central role in the relationships miners
establish with their deity in order to improve the productivity/fertility of their mines but
also to protect themselves from accidents.

According to Absi (2005b), contrary to Tíos being an “Indigenous cult” as is commonly
believed, Tíos emerged alongside processes of mechanization and a rationalization of
production among the mining guilds (126). But Tíos did not emerge in a vacuum and the
myriad of understandings associated with metal production and reproduction also have
pre-Colombian roots. Precious metals like silver and gold figured importantly into pre-
Colombian cosmological life cycles which were central to understanding and contributing
to the reproduction of life, both human and non-human (Absi 2005, Platt and Quisbert
understandings of mineralization in important Incan mines included descriptions that
referred to lumps of ore as “potatoes,” which “grew in the soil just like tubers” (158).
These understandings included sacrifice, human (less often) and non-human, as offerings
to the earth to ensure future reproduction of life. Archaeologists excavating in the regions
known as pre-Colombian mining regions have found animal remains, feces, and ceramics
which are believed to have been presented to a mine, or at the foundry, as offerings (Vetter 2008)—these beliefs persisted with Spanish colonization but Tíos became the dominant mediator between miners and their mines in Bolivia as the country industrialized its mining industry. Absi (2005b) notes that the ethnographic record confirms that there was a relationship between the cult to the Tío as a devil figure and the appearance of the new mining fortunes as production was modernized in Bolivia towards the second half of the nineteenth century. Among the many authors who have studied the mining ritual practices in the Andean region there is consensus that, up until the neoliberal period, Tíos formed a central part of miners’ understanding and interactions with their world. 120

In this chapter I focus my analysis on ritual practices at the mines in the Cerro Rico but not because of their centrality in my interactions with miners.121 In fact, it was the absence of Tíos which piqued my attention. I assumed, given their overwhelming presence in anthropological literature and their representations in popular culture, that Tíos would be omnipresent, but maestros lamented their passing and day labourers and peons appeared at the least ambivalent. As we have just seen in Chapter 3, maestros like Rambo draw links between labour practices, the way their work is organized, and their ritual obligations. Being a “real miner,” a maestro of the trade, means knowing not only

120 For information about Muqui in Huancavelica, see Salazar-Soler (2002 and 2006). For information about Tíos in Bolivian mines see Nash, Absi 2005b, Platt.
121 During my fieldwork I attended four anniversaries, danced in the carnival minero with the Central Mixto Cooperative, attended two compadres ch’allas and attended one August 1st (Día de la Pachamama) ritual offering which involved the sacrifice of a llama. All of these events occurred, except on one occasion (the anniversary at Rosario) at mines where there were less than 20 mine workers working.
how to labour, but also requires fulfillment of one’s ritual obligations to the sentient beings who also play a role in the process. But these same miners were also lamenting significant changes in their labour practices. Since the two appeared to be, at least historically, intimately linked, one could assume that any changes that have happened to the way miners do their work would have an impact on their ritual practices and vice versa. This chapter attempts to interrogate that link.

5.1 Maintaining Ritual Obligations

Six months after Marco and Antonio’s dance underground in Española (see Chapter 3), I returned to the mine to attend an offering ceremony at the mine. It was August 1st, the Day of the Pachamama, and the miners’ market Calvario was buzzing with stalls selling mesas[^1] (lit. “table,” offerings arranged on paper) filled with bright coloured sugar disks and plates with “prosperity” or “health” stamped on them, fake US hundred-dollar bills, coca, plastic shiny strips of tinsel and herbs. That morning, Silvio had called me excitedly, “Kris, the Ing (short form for Engineer) is getting frustrated that we’re not doing well, and I told him that’s because we’re not doing our part to care for the mine. So, he’s going to share the costs of buying a llama, and we’re going to buy a beautiful llama—there’ll be enough meat for all of us to take home, and with that maybe we’ll get our vein. Come to the mine, be sure to bring coca and alcohol, Valeria will be there.” He

[^1]: Gose (1994) also demonstrates how ritual practices are intimately and inextricably tied to agricultural labour practices in Huaquirca Peru.
[^2]: In 1986, anthropologist Roger Rasnake defines a mesa as a “delimited ritual space in the form of a woven carrying cloth placed on a table or bench” (668).
was excited since he hadn’t done a sacrificial offering with a llama to this mine since he
returned from Argentina nearly five years ago.

At Calvario I picked up a bottle of cheap grape brandy (Singani), a liter of puro (high
proof cane alcohol), and half of a pound coca and headed up to Española on foot. It had
been almost a year since I had seen Silvio and Marco. Antonio, the aspiring miner, was
still working with them, and Mario, the socio who had taken care of Silvio’s mine while
he was in Argentina, was also present. The beautiful llama they had bought was also
there, as well as Valeria and Marco’s six children, wife, and mother. The llama was white
and black and cost the group 700 Bs (about 100 USD). The engineer who was “lending”
the compressor had kicked in another 400 Bs to ensure that they could get a “nice one.”
According to Silvio though, it wasn’t very beautiful, and it was the wrong colour. The
best llamas for offerings to the Pachamama, according to Silvio, are all-white. But those
all-white llamas were much too expensive, costing nearly 2000 Bs that day.

The men gathered around to “prepare” the llama. When I arrived, they had apparently
been sitting around in a circle in front of the mouth of the mine, chatting, laughing and
passing around alcohol mixed with water in a pair of water bottles, splashing a bit on the
ground beneath their feet before drinking. The llama was tied to a rope and stood calmly
in the middle of the circle. Periodically, Marco would give it a drink from a dish. The
dish, they told me, was also water mixed with alcohol and that would help the llama to be
“tranquil” and “relaxed” which was very important for the offering. If the llama is upset
when it dies, explained Silvio, then that will be bad for them and for the mine. “We need
to keep the llama happy and that will keep the vieja (lit. old woman, often used to refer to Pachamama) happy too.” A couple of hours passed in between bouts of silence, outbursts of stories and laughter, and preparation, and eventually the llama clumsily lay down on the ground, resting its head on the gravel, its front hooves tucked under its chest. When that happened, everyone shifted gears and got to work. Valeria assembled the knives, heating them on the fire, and Marco’s wife brought several plastic giant bowls usually used for washing clothes, one of which was filled with a neatly folded and brightly coloured textile called an awayu. As the lead driller of the mine, Silvio gave Marco the knife and took his position alongside Antonio and Mario to gently hold the llama, who, awaking from its drunken stupor, started to wriggle uncomfortably and try to get away.124 In a flash, Marco sat down beside the llama and, encircling its long neck in his strong right upper arm, he grasped tight and quickly cut its throat with his left hand. His mother and Silvia swopped in, catching the blood with the plastic bowls and handing that around to the men. First Silvio, then Marco, Mario and then Antonio, took turns taking the bowls of blood and sloshing it upon the mine. First on the bocamina, then on the casilla where they prepare for work, they threw some on the compressor and drill, their wheelbarrows and other tools, and then Marco went inside to throw some on the work areas they were developing. My mind fuzzy, Silvio thrust a bowl into my hands and instructed me to throw it onto the rock face just inside the bocamina, and the other women were doing the

124 If we follow Absi, this ritual does not follow the structure that she sets out (see page 195), since the segunda mano and not the socio is the one taking charge of the killing of the llama; that is, it doesn’t follow the proper hierarchy within the working group. However, even though Marco wasn’t an official socio, Silvio treated him as his equal and they worked, as we saw in the previous chapter, often interchanging their roles in the mine. Economically, they shared the production 50/50. And, Marco was the head driller—this was a way for Silvio to show respect to his skill.
same. When all the blood had been distributed, Marco’s mother brought the awayu and Marco carefully covered up the body, the head of which was pointed directly towards the bocamina. Alcohol was then poured on the awayu, and we sat around the llama, passing the bottle around, drinking a little and offering more to the ground beneath our feet and the sacrificed body in front of us.

Illustration 24: The llama after the sacrifice. Photo taken by the author.

After sitting and letting the body rest for about 20 minutes, the men shifted to quickly skin and dismember the llama. “Nothing can be wasted,” Valeria said to me, “and we must do this quickly. The meat must be tender, and the body must be skinned carefully.” Again, Marco wielded the knife and his capable hands moved swiftly. As he got past the stomach, Silvio handed Valeria and me a knife, instructing us to skin the hindquarters and the feet, which I did clumsily at first, but quickly got a handle on, likely aided by the
alcohol. Once the llama was skinned, the men moved away to divide up the organs with the help of Marco’s mother, and Valeria and I took to cutting up the carcass and chopping it into half pound sections and pieces to be cooked. The men placed the body in the wheelbarrow that had previously been doused with blood, along with the head, feet, intestines, liver, kidneys, and stomach. Meanwhile Marco’s mother assembled the mesa. This mesa was a small piece of textile fabric (not paper like the ones seen in Calvario) and on top of it she laid coca leaves, some pieces of stamped sugar, some wool, a small clay dish which held the reproductive organs of the llama, and the small clay dish with the organs. Marco’s wife and children stocked the carbon under the grill and rubbed some of the fat along the top. They dug a hole outside the bocamina, and, carefully dumping the body parts into the hole, took turns passing around the alcohol and beer, drinking and offering some to the vieja, and saying, “Que nos vaya bien” and, “Que sea buena hora.” Then the hole was covered with dirt.

Following the burial, we devoured the delicious, charred llama meat. Silvio collected our leftover bones and then called the guard dogs to a corner alongside the mine where they were given permission to feast—they scrambled all over each other, snarling and choking down the fat and bones. Following our feed, Marco filled the wheelbarrow with the smoldering coals from the fire and, placing it just inside the front of the bocamina, his mother carefully set the mesa atop the coals. The smoke began to fill the opening and creep down the tunnel into the mine. Standing in front of the smoke, we gathered in a circle, again passing around bottles of beer and alcohol and alternating between drinking and sloshing the beverages onto the ground under our feet. Silvio brought the damp llama
pelt from the rock face where it had been curing in the sun, and Valeria emerged from the casilla with a portable boombox playing huayños. One by one, the men and then the women took turns wearing the pelt and dancing around the inside of the circle, stumbling into one another, criticizing their dancing techniques, and emptying beer bottles one by one.\textsuperscript{125} Twilight started creeping over the city down below, and the cold crept in from around the smoldering coals. As night engulfed the mine, the group began to split. Marco and Antonio would stay drinking early into the morning at the mine, while Silvio, Valeria, and I—armed with our green plastic bags of llama steak—began the precarious journey (made even more dangerous by the copious amounts of alcohol we had consumed) down the mountain on foot, taking care to not step into a fissure or exposed shaft. As we reached the road, we rid ourselves of our coca on the last section of the mountain, and reeking of smoke and dizzy from the alcohol, parted ways to our separate but parallel neighbourhoods above the city.

Just weeks after the offering, the engineer took his compressor back. Marco and Silvio were frustrated, but ultimately saw it as a reflection both of the limits of the engineer’s ability to understand the mining process as they understand it and of the engineer’s belief that the process was easily manipulated and controlled. “Sometimes it works [the offering], sometimes it doesn’t,” Silvio said to me, discouraged but not without hope. “But just because it doesn’t always work, doesn’t mean you stop and pull out. This is part

\textsuperscript{125} Absi, Citing Van de Berg (1993), notes that dance is used to produce vibrations in the ground, thereby sexually exciting the Pachamama and encouraging mineral productivity. Similar acts by miners underground were observed in Salazar-Soler in Julcani. Miners themselves did not articulate associating this meaning to their actions, so I cannot confirm this association. I am also unsure where the pelt-wearing comes from or what it signifies and my notes are not clear on this point.
of mining too and it’s part of the capricho (stubbornness) of the work. Sometimes it’s because the mine just doesn’t give anymore [la mina ya no da], sometimes it’s because we haven’t fulfilled our obligations to take care of and feed the Tío or the vieja, sometimes it’s because the grades just aren’t there…part of our work is skill, part of our work is knowing, and part of it is taking care. But ultimately, it’s out of our total control.”

Like farming, mining was not able to be fully subsumed under the miners’ control. There were many factors that they themselves recognized as legitimate limits; some of those were related to the physical environment, some of those were relational and sociocultural and some of those were related to the capitalist market forces, but they were limits, nonetheless.

Here, Marco and Silvio purposefully engage the Pachamama and Tío in this ritual. Both maestros (albeit one socio and one segunda mano) in the Española mine, they articulate their desire to increase the productivity of the mine by fulfilling their ritual obligations to the vieja, feeding her the blood, innards, fats, and bones of the llama, as well as copious amounts of alcohol, coca, and beer through libations. They do this with economic assistance from the mine engineer who has loaned them the compressor, but they themselves take charge of the ritual process—the engineer, although invited, didn’t even show up. They are, as Absi notes, by forming a relationship with their Tío and Pachamama, engaging and animating their saqra—the wild and dangerous forces—which, through ritual practices at the level of the work site and mine, can be channeled for their benefit and protection (83). Even though Silvio had been gone and hadn’t done a sacrifice of this kind for several years, he believed that by re-engaging in this relationship
with the deities of the mountain, he could potentially improve his luck and the mine’s productivity and get the engineer “off his back.”

Part of the way maestros demonstrate their mastery of the trade is through their dedication to these ritual practices, practices which put them in direct conversation with Tío, which affords them a role in securing their safety and their mine’s productivity. In participating in the ritual sacrifices of living animals, and providing daily offerings to these sentient, powerful, and often dangerous beings, miners can potentially mitigate themselves from becoming sacrifices. Miners themselves, without the assistance of shamans, skillfully substitute human flesh and blood offerings for animal fats, libations, and other elements in their offerings. In this way they can temper what could otherwise be a harmful relationship with the Tío (see Gose 1986). But, as we will see towards the end of this chapter, human sacrifice appears to be replacing these more morally accepted forms of ritual offerings.

For Nash (1979), and later, Gose (1986), not only does the production and reproduction of ritual in mining serve to benefit miners in the productive process and re-establish the equilibrium upset by mining, but it also serves to prevent a process of alienation. Instead of “losing” their customs and ritual practices through their dispossession from the countryside as was assumed by a traditional dichotomy of pitting the “traditional” against the “modern” (Nash 1979, 7), Nash demonstrates that part of these “modern” miners’
process of developing a sense of collective class consciousness comes\textsuperscript{126} from the collective nature of their “traditional” ritual engagement. She said, “the ritual[s] of the ch’alla—from the simplest reference to it in sprinkling liquor on the earth to the sacrifice of a llama in the k’araku—are a part of communal gatherings that collectively enable the miners to overcome the alienation in their lives (320).”

Although this examination was fruitful for understanding the ethnographic record on ritual practices at Andean mines, I consider this ritual sacrifice at Española to be exceptional, given the economic limits imposed on Silvio throughout the years. Unlike historical circumstances which suggest that these moments were common, it was made possible by his frustrating relationship with the engineer against the backdrop of what appeared to be a generalized context of waning rituals from the general mining population. Contrary to the long lines of llamas and overcrowded markets that Absi (2005b) describes from her fieldwork in the late nineties, these kinds of ritual offerings appeared to be on the decline. Walking to Silvio’s mine, I was able to see that many mines appeared to be working as usual on this day, and I passed many loaded trucks leaving the mountain on their way to the mills. Even Silvio, who was here engaging the saqra of the Tío, was, as we will see next, becoming even more ambiguous about his relationship to Tío and his powers.

\textsuperscript{126} Nash refers to Marxian understandings of class consciousness; that is, when the worker gains an understanding of having a sense of their position within a class of exploited peoples under capitalism.
5.2 El Tío Cansado/ The Tired Tío

Even in the cases where miners were continuing to fulfill their ritual obligations to the Tíos of their mines, their relationship to them appeared to be quite ambiguous, as they weighed a variety of external factors which appeared to interfere with the Tío’s ability to control his mine.

During the compadres celebrations in 2017, I was back again with Silvio, sitting inside Española. Valeria and Marco were also present, as well as Mario—a socio who worked alone and totally manually—along with two peons, Alejandro, and Jose.

After advancing about 100 m from the rock face using the sledge and having very little luck hitting a vein that would enable him to subsist from his mine, Silvio paid a local artist to come and erect a small Tío (according to his means at the time) just off the main tunnel of the mine. The artist and Silvio’s wife, Valeria, had constructed the Tío in an afternoon, and Silvio had paid the artist about 200 Bs for the job. The Tío was made from clay and was small, about one foot in height, and had the characteristic horns, marble eyes, and protruding erect penis. I had asked Silvio to explain to me why they were ch’allando and why they had decided to add a Tío to their mine. After several hours of rounds of cane alcohol mixed with Tampico orange tang, and then a few rounds of canned beer, Silvio started to talk about the Tío. As he cracked a red and gold can of Paceña beer, the foam and spray erupted, and he hurried to offer the white foam to the

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127 Miners often reserve beer in their mines for days when they will not work since beer, according to many miners, causes gas to build up in the gut thereby provoking accidents. During my time in Potosí I
Tío. “Money!” Valeria whispered to me, squeezing my hand in excitement. Silvio sat down beside his Tío, who was looming over his shoulder. Adjusting his giant coca ball in his mouth and slowly smoking a cigarette, he reflected on the past and his present in this new mine where he worked with a small crew (including his wife and eldest son), using primarily manual extraction methods.

Before, we really believed in the power of the Tío. We would, without fail, ch’allar with him every morning. We were always giving him offerings of alcohol, coca, cigarettes…you know, so that things would go well for us. In this way, without fail, among comrades. Well, we never got rich but we did alright, always enough to sustain our families. But lately, especially since I returned from Argentina, I noticed that the Tío just isn’t the same and I started to concern myself more with the market prices of the metals and the veins, since, it’s true that now we have to pay much attention to these things. Ever since we changed to polymetallics really things have changed for the worse and now you’ll see how the mountain changes as the prices go up. Many comrades come from all around when the prices are high, from cities, from the countryside, from all over. And then, they leave when the prices drop. I couldn’t help myself when Mario told me while I was in Argentina that zinc was as high as it was. It’s not the same as it was. It’s really hard to come up against the changes of production, and the loss of the veins, with just the Tío. Regardless though, we still try and ch’allar when we can to ensure that things go well and I am always trying to learn more about my mine and its vein structure in order to make it work. But, it’s not easy, we don’t make the money today like we used to and without machinery it is even harder, we exert a lot of energy with very little return.

discovered that miners and their wives have a whole list of food products that they do not consume for fear of “chasing off veins” or “causing accidents.” See also Tapia 2010.

128 It is common to hear in Bolivia, and not just among miners, but also among merchants and others, that when a beer foams and sprays like it has been shaken, money could come your way.

129 On two occasions Silvio was given a compressor for his mine, once from his cooperative and the second time from this mine engineer who worked for Manquiri but was moonlighting as a commercializer. Both times the production was too poor to merit the investment and both times the compressors were taken away. Sometimes Silvio had a segunda mano come to advance using a diesel-powered hand drill where they dry-drilled (terrible for health and safety due to dust inhalation), but primarily he worked a pulso.
Valeria, listening to Silvio affirmed, “Yeah, Tío must be tired after so many years… and now, so much is being taken out, as if he would want to be working this way? For this reason, I think that our luck today is more related to prices and Silvio’s ability to find a vein and not to the Tío—without a doubt he is angry and tired.”

It is important to remember that the literature reminds us that although miners see Tíos as sentient beings who have the power to control the production of a given mine, they are also perceived as comrades or work partners to a working group. In the past miners engaged in daily exchanges with the Tío (the Ch’alla or pijcheo) at the level of the working group to, as we have seen, increase the productivity of their mine, fulfill their ritual obligations, and maintain a certain equilibrium of the broader sociopolitical forces to which they are subjected, and even to protect themselves from accidents and death. Within this arrangement the Tío is never fully subsumed within this reciprocal relationship—there is always a chance that he can cause harm both productively and physically. As such, he is perceived by miners as an ambiguous figure whose actions have potentiality but are never guaranteed. But here, Silvio and Valeria’s interpretation of Tío’s fatigue or withdrawal is expressly different. As we have just seen, it isn’t his fickle

130 Absi encounters a few miners who also note that the Tío is tired, that he doesn’t have the same powers he did before (214-215). For example this socio said: “As I said, the Tío almost doesn’t exist anymore. He’s tired. So much time, one century, two centuries that he’s here like a King inside the mine, the Tío. Like our God, no? …Tío helps us, but not like before. Before he made lots of mineral, now no, one has to search. Now, if you want to make money, you have to sacrifice. No matter where one has to risk it. Before it was easy, there was lots of mineral. But now he gets tired—like, when we were young we worked well, but with age we don’t work like before. He must be bored, too.” (217).

131 See Absi, Nash and Salazar-Soler. For a broader but relevant discussion of Andean mountain spirits and why they ought not to be considered as kin, see Gose 2018.
nature that provokes the ambiguity, but instead a slew of external factors that are affecting his ability to act upon his environment. Here, Tío’s power is weakened.

For Silvio, and other socios “on the brink of extinction,” Tío’s power was being challenged and so their approach to him is ambiguous as they attempt to juggle the other parallel forces at work in their mines. Although the ch’alla practice itself appears to follow the ethnographic record (socio in charge of the act, offering occurs underground, providing offerings of coca, alcohol, beer, and cigarettes, encouraging the Tío to help them so that “things go well”), there is reluctance from Silvio and Valeria in the way they describe the meaning of the Tío to equate their luck purely to the realm of the Tío. They also are explicit in noting that there is a change happening: Tío’s powers aren’t what they used to be.

Although I began this chapter with two examples of explicit ritual interactions between maestro miners and the sentient beings to whom they provide offerings of coca, fluids and even sacrifice, these kinds of interactions in my experience were rare. And even though I risk overemphasizing their importance by providing the details of those interactions in this chapter, they are important in that they provide a context from whence to understand what has been “lost.” As we just saw in the previous chapter, maestros lamenting a loss in skill also highlighted a loss of fulfillment of ritual obligations on the one hand, or a distortion of those obligations on the other. Even the first example, as I mentioned, of the August 1st offering with Silvio and Marco, is an example that never repeated itself outside of the exceptional incident with the engineer.
It is important to remember, as we laid out in the beginning of the chapter, that Tíos are not the only sentient being towards whom miners engage in ritual obligations, but they are the most important of daily and repeated interactions for miners (Absi 2005b). During my time in Potosí, I found myself wondering where all the Tíos were. Despite their centrality in portrayals about miners in Bolivian popular culture, during most conversations I had with miners, Tíos were rarely mentioned. Many of the interactions I had which involved miners talking about their ritual obligations to the mine, the Tío and the Pachamama, occurred among maestros who were reflecting on the past, on something that had been lost.

At first it seemed counterintuitive, since as we saw in Chapter 1, when compared to previous decades, production was booming on the mountain. Anthropologist Olivia Harris (2000) demonstrates that when production was good for the Laymi in Northern Potosí, communities would apply those resources to improve their offerings and ritual obligations—the market economy in this sense helped to encourage and preserve Laymi ritual practices. Similar observations have also been made by anthropologists studying Andean transport truck drivers (Ødegaaard 2008) and urban market vendors (Buechler and Buechler 1992, Tassi 2017). Tassi et. al 2015 argue that the “Popular Economy” in Bolivia has been built by, and has simultaneously served to build, Indigenous ritual practices. Similarly, in Juan Rojas’ life history (Nash and Rojas 1991), Juan describes that following the nationalization of the mines, the first years of company-sponsored ritual offerings to the mines were exuberant displays of wealth and abundance. He
contrasts these celebrations as counter to the more modest and humble offerings of the years before (see also Nash 1979, 138), but also notes that these displays of abundance quickly disappeared as the economic crisis of the State company COMIBOL descended upon the workforce (see Nash and Rojas, 1992, 170). And yet, in the nineties, Absi (2005b) is already observing a decline in the larger more collective ritual offerings. Some socios were only sacrificing half a dozen llamas per working group (172), and that was perceived as a decline. If we remember, Silvio and Marco—and only with thanks from the Manquiri Engineer—were able to sacrifice one llama. Unlike the landscape of long lines of llamas waiting to be purchased and sacrificed by the various working groups and cooperatives in the nineties, I only saw a few dozen for sale.

Having seen several documentaries about miners which focused on the ritual offerings to the Tíos and having read Pascal Absi’s seminal work on the matter, I quite expected that Tíos would be everywhere in the Cerro Rico, and that miners, at some point or another, would want to talk to me about them. As Absi noted, “in every mine there are various effigies of the Tío. Each working group has their own [Tío] in their area of work and usually the most important Tío resides in the main gallery (102).” And so, I was surprised when Tíos rarely came up in conversation from an individual miner’s personal experience, and that I rarely encountered a Tío when entering a mine. Indeed, as she notes, miners seemed quite obsessed with a tale or two of a miner who “made it rich” from making an individual pact with the Tío, but in my experience even those exaggerated tales rarely formed part of our conversations. In miners’ daily mundane practices at the mine site, or during the emblematic celebrations for ritual offerings, the
Tío seemed to be missing, even among maestros who were older, who were still working at a reduced scale, and had lived and worked through the tin producing age.

In the sections that follow, I probe the absence and what I interpret as a distortion of Tíos’ role and importance for miners in the Cerro Rico de Potosí.

5.3 El Tío Volado/ The Blown-up Tío

I was sitting with Maria, the guarda of the Santa Rosa mine in Pailaviri, and her young son, Deivid, in the little mud hut they slept in, shelling peas for the soup she was making for dinner. As we chatted about Tinguipaya, the rural community where her parents were from, her husband Eleandro and his brother Freddy arrived from their shift as carters in the mine. The pair were from Kiru K’asa, a small community close to Occurí in Northern Potosí (about a five-hour drive from Potosí). They worked in the mines primarily, but also travelled home on weekends and during festivities to tend to their work, ritual, and political responsibilities as campesinos in the community. ¹³²

Santa Rosa was, like nearly all the mines in Pailaviri, now producing polymetallics, and at the time, there was only one socio (who didn’t work, but directed the labour) who was working between 10 and 20 peons in the mine along with a pair of contracted-out segundas manos (the drillers). The mine borrowed an air compressor from the

¹³² Months later, when we would travel with Eleandro and Freddy to Kiru K’asa for the May 3 Festival in Ocurí, we observed them engaging in the kinds of collective ritual practices that one would expect to find among peasants in the Potosino countryside (see Rasnake 1986, Abercrombie). They had personally woven parts of their traditional costume for the dance, they performed a ch’alla prior to leaving their lands, they drank and danced, and fought and drew blood throughout the town that day and well into the night.
neighboring mine to run the pneumatic drills. We can say that the work was being performed by peons—whose objective was to move as much mineral they could as fast as they could per shift—and the segundas manos, who were responsible for drilling and advancing as per instructions from their patron. At Santa Rosa, like many of these mines, there was barely any downtime; the tasks for most of the workforce were hyper-specialized.

The two brothers, having just spent over eight hours in the mine without rest, were filthy, their skin of their arms and faces coated with a layer of dust-caked mud. Both were wearing fluorescent soccer jerseys, long shorts, and rubber boots. Eleandro was laughing as he and Freddy dried their hands and arms off, having just washed the mineral from their skin at the basin outside the small mud house.¹³³ Maria looked at Eleandro curiously and asked what they were so giddy about.

“You know the charges they set off in the mine yesterday? Well, they blew up the section’s old Tío (le hicieron volar al Tío—literally—they made Tío fly). We realized it as we were loading the carts this afternoon—we found one of his horns.” As Eleandro said this, Freddy, the younger of the two who was just nearly 17, started laughing uncontrollably. The two giddily laughed for a minute and then started pestering Maria for something to eat.

¹³³ Minutes earlier I had helped Maria carry large buckets and basins 250 m down slope of the mountain to the cistern to collect water. Being a casilla quite high up in Pailaviri, Maria does not have access to water, and so, every few days she is forced to run and collect as much as she can in these buckets for her family’s use. This year in particular, Potosí faced a severe drought and water was very expensive.
Maria looked at me rolling her eyes, and turned to the stove to dish out some dinner. Weren’t they frightened? Did they expect repercussions? Was this an omen for an accident to come? The literature on Tíos in the Andes region is quite consistent on how miners’ perceptions of safety and accidents are linked to their ability to keep Tíos well fed and taken care of. In my mind, completely blowing up a Tío erected where the ch’allas take place would certainly have become a point of concern during Nash’s fieldwork in Oruro (see Nash 1979 and Rojas and Nash 1991), and for some of Absi (2005b) informants. Dumbfounded, I started prying a bit, thinking that surely these two young peasants, who had only been working in the mine for two years, would be concerned. “Doesn’t that make you just a little bit worried that something could happen in the mine, that maybe it’s a sign of a bad accident or something to come?”

Freddy quickly answered, “We aren’t bothered by it. We don’t have any use for a Tío in the mine—in fact, it was just there practically abandoned, that’s why it was blown up in the first place. None of our comprades pay any attention to it either. Anyway, we’re too busy for a Tío if we cared about him—there’s no way our boss would let us sit around doing nothing... No, we won’t build another one, it just doesn’t matter either way.”

More than the kind of ambiguity expressed in the previous section, I more commonly heard miners speak more of the uselessness of old Tíos in their mines, or their absence. Just like Eleandro and Freddy, miners who were working as day labourers, and even segundas manos rarely spoke of their dedication to the Tíos in their mines (if they had
them even) and when they did talk about them, they were quick to identify it as an element that had been lost in the trade or was irrelevant for their labour practices.

Many conversations which identified a change in both the labour practices and the organization of labour included references to a loss in the ritual practices at the mine—a change in the relationship with the Tío. Some even equated the lack of care to fulfil their ritual obligations as the reason for the increase in accidents and death.

Daniel, a retired socio from the Unificada cooperative, was orphaned at the age of 14 through the death of his father. He first entered the mine when he was eight years old, working with his father as a mineral mover, and from there “learned with time the names of the veins, and their behaviour.” When asked about mining today, he said:

There are very few maestros today, the socios that are there, they don’t teach,” he emphasized, “there aren’t even Tíos. They don’t learn the work; they don’t learn the miners’ customs (costumbres del minero). [As a result] the youngsters who go in to mine, they don’t take the old ways into consideration, they don’t have experience mining and so accidents happen, mistakes are made. And they seem to forget that there is the luck factor, they don’t realize this; they don’t appreciate it…After all this time—the mineral has run out (el mineral ha terminado), now all of the veins are being extracted with machinery, and mechanization has destroyed the mines.

As Daniel notes, today things are different for miners who would have been considered maestros in the past. The traditional steps that a peon would have taken to learn the skills needed to pursue veins and be safe as well as learn the ritual practices and obligations necessary for the mine have all but disappeared.
Retired cooperative miners lamented a loss not only of the skills of the trade themselves but of respect, of structure, of companionship and solidarity. They also noted changes in the relationships with the other sentient beings that inhabit their world and the practices that kept those relationships present and valued. The “factor suerte” or element of luck also required close attention to one’s obligations with each other and with Tíos.

Miguel, an 84-year-old cooperative miner who worked for 30 years in Socavón Potosí with the 9 de Abril cooperative described the differences as we sat in the office of the FEDECOMIN-POT Retirees in this way:

I started working when I was 18 and learned from my father for several years before I could start working on my own. The work was distinct when I was working. Everything was a pulso (manual, using the hammer and barreno), and the veins were better—we were able to process more. We took out little by little, sometimes we made money, sometimes we lost money, but at least we earned enough to eat. I respected my father and my maestros until I learned the work myself. I followed the rules. We always celebrated compadres, we always had our Friday, and we respected the Tío (emphasis mine). Now, the mountain is collapsing—look at how many accidents there are… there are too many machines, the veins are tiny, there is too much exploitation—exploitation of the mines and of men—and not enough time to think, to reflect, and to plan like before.

Beto, a segunda mano who had worked for many bosses around the mountain, told me a story where he saw Tío punish a patron at the Encarnación mine. He had been working

\[134\] Absi (195-205) notes that the hierarchical structure within the cooperatives between peones, segundas manos, socios, and dirigentes was reinforced by the ritual practices that working groups maintained. As the traditional structure broke down, miners started telling her that “everyone could perform and participate in” rituals like the tinka and ch’alla, whereas before these were limited to socios or dirigentes of the cooperatives. That breakdown in social hierarchy due to a redundancy of the kind of skilled unspecialized labour that socio/maestros performed was starting to produce repercussions for the performance and frequency of rituals in cooperatives during her fieldwork. From Daniel’s perspective, this process appears to have consolidated itself.
for a socio to get a work area ready for extraction. He had identified a vein, developed it with his own investment and tools, and brought the patron in to see the rich area. Once the boss discovered that Beto had found such a rich haul, he “kicked me out of the mine saying he didn’t need me anymore and hired a bunch of boys to work with him.” The patron worked the vein for two weeks but it slowly disappeared, thinning until it was nearly unrecognizable. Then, the patron tracked Beto down, begging him to come back to work. Beto proceeded to sit with Tío, give him offerings, “and I sat with him [Tío] thinking carefully and imagining where the vein would come back.” To his satisfaction, the vein returned, widening with each advance. And, although it never returned to its original width, Beto was proud of his accomplishment. The patron, though, kicked him out again once the vein was profitable, “but, he lost it again, because, well Tío also knew that he didn’t know what he was doing. Tío knew that he was using me. After that I never went back there. Why would I? I couldn’t trust that shit—it wasn’t worth my energy.”

Here we see again that the failure to work the mineral with their own hands, energy, and sacrifice led to the patron losing the vein—this time apparently punished by Tío himself. Even though Beto confided that the patron had done a sacrifice and was making offerings to the Tío, he wasn’t the one who was working the mineral, for that his efforts were futile. This is important since, it perhaps even complicates Absi’s notion at the core—which is that it is not only the simple act of engaging the Tío’s saqra through offerings and ritual engagement, but that engagement also requires maintaining a direct relationship to the materials being extracted through one’s labour. Not only then is the ritual engagement a necessarily social activity within working groups of miners and the
Tios but it also, if we follow miners’ logic about the relationship between the labour practices and the ritual practices, has much to do with the kind of work and way labour is organized.

I ended the previous chapter on the change in labour practices and the links to changes in the organization of labour to the changes in miners’ intimate knowledge and skill of the mines with a conversation I had with Rambo, a de-facto socio from Candelaria. Rambo noted to me, while observing the open-pit mining practices of Manquiri, that what they were doing couldn’t possibly be considered work since they weren’t mining, they were only operating heavy machinery and since they didn’t even have Tios. When I asked him if he was sure, he responded—looking at me as if I had just asked the most ridiculous of my many ridiculous interrogations—“Why would they have Tios, Kris? They work above ground. They don’t mine for veins. And remember they just remove the mountains. There is no respect there, no “you give, I give.” They just do what their boss tells them to do, they’re slaves to the company. In this way, the Tio can’t possibly have a role. It is worth noting here that other miners who I know who work at the privately-owned open-pit San Cristobal mine in neighbouring Uyuni similarly do not have Tios. 135

It perhaps comes as no surprise then, that, if we follow Absi’s understanding of miners’ ritual obligations to Tios and other sentient earth beings, that Tios are being abandoned or not being built because their saqra is not being animated by miners through their ritual

135 An interesting follow-up to these early findings would be to analyze to what extent Tios continue to be engaged at the underground public and private industrial mines in Huanuni, as documented by Cajías de la Vega XXX, or at all at others, like San Vicente or Porco.
practices—their powers are not being granted and thus they are not able to act on their environment. But it is also perhaps, as Beto notes, a combination of performing both the work and ritual practices which animates the Tío. As Gose (2018) notes, “without sustained human interaction, however, mountains and other places revert to the depersonified and desocialized state of saqras” (493). As Silvio noted upon returning from Argentina, the Tío wasn’t what he used to be, and so he didn’t really believe fully in his abilities. This led him to modify his devotion and his offerings. Since the engineer-sponsored sacrifice (which included a very curious anthropologist) in 2017, he has not done another.

5.4 Winds of Change

Nash’s work—even though it is commonly interpreted as work which ratified the existence of ritual practices with the Tío among the working class in Oruro—also included reflections from miners of a change in the significance of ritual practices involving Tíos as well as a reduction of the frequency of rituals and the kind of devotion directed at the Tío. At the time, Nash noted that the shift away from these practices was likely due to the mestizo bureaucrats of the State-run company rejecting what she had deemed “Indigenous peasant” religious practices. For example, Nash says, “The foreign technicians were tolerant of these customs [ch’allas and karaku], but the national technicians, who replaced them after the nationalization of the mines, rejected them, possibly because of their own alienation and desire to separate themselves from the
traditional culture” (317). Miners Nash interviewed also noted that the change in significance of the Tío as first a gatekeeper of the mineral to becoming an ally of the workers, came when the system of production was changed. Prior to nationalization, working groups were remunerated based on the mineral content of the ore as well as how far a working group would advance (how much ore would be removed along a vein). Following nationalization, though, workers were remunerated based on total ore output (as opposed to ore content) (1979, 162-163). They claimed that with this new productive arrangement, Tíos were not necessary. As one miner told Nash, “There is no longer any special payoff because of increased mineral production in the individual contract, and the fantasy was put to rest along with the promise of wealth in the old system of work (194).” But, according to Nash, Tíos did not entirely lose their relevance, since with the increase in the rationalization and mechanization of operations, accidents increased with Block Caving extraction techniques. Miners’ vein pursuit skills were rendered less central, but they had to become more sensitive to their surroundings. Tíos became less a source of potential productivity and instead played an important role in centralizing demands for worker health and safety underground, and offerings made to the Tío, via the ch’alla or the karaku, were made with the hopes of keeping Tío from “eating” the miners. In this sense, the significance of the Tío was, at least in part, directly related to how production was organized.

Absi (2005b) says that Nash likely overemphasized the “Indigenous” nature of these practices, saying instead that the Tío emerged from within the gremio (guild) in Potosí in the nineteenth century. It is interesting that as a whole, Juan Rojas’ (Nash’ principal informant) life history makes very few references to Tíos.
Like Nash, Salazar-Soler (2002, 2006) documented ritual practices at the mercury mines in Julcani, Peru. Another unionized workforce, the miners in Julcani lived in the mining camp, were provided time to tend to their agricultural obligations, and practised collective rituals to Muqui during set dates every year, as well as being provided with individual/working group levels and more mundane daily offerings. For the miners in Julcani, Muqui/Supay was an ambiguous figure—he could reveal good veins and treasures to people who are of “good heart” (and practice their devotion to him) or he can provoke accidents and kill miners when he is hungry and hasn’t been properly fed (137). Towards the end of her fieldwork, Salazar-Soler predicted a shift in the ritual practices in the late eighties as she observed a process of neoliberal rationalization occurring at other mines in the country, and sure enough, when she returned to Jucani a few years later, the collective rites she had observed had all but disappeared. She notes that the process of the arrival of a stable proletarianized workforce had consolidated itself at Julcani by the early nineties and as a result, workers were mostly hired on contract, most didn’t depend directly on the company, they were now organized in working groups, and only worked for seasons and then left. According to the miners she interviewed, Muqui had abandoned the mines in Huancavelica in the nineties, leaving them dried up (233).

Absi, like Nash and Salazar-Soler, also observes changes to the ways that rituals are practised with the Tios as she completes her fieldwork in the mid-nineties.\(^{138}\) She argues

\(^{138}\) It is interesting that although Absi begins to discuss the loss or change of these ritual practices, the majority of her ethnography, in my opinion, gives the reader the sense that these practices are alive and well. It seems when she is confronted with miners’ observations that things are not what they used to be that she anticipates a pending change.
that ritual practices directed towards the Tío, the Pachamama, and other symbols of the
guild persisted up until the neoliberalization period, after which things began to change.
According to some older retired miners, the appearance of more individualized “pacts”
with the Tío began to emerge and intensify, leaving the collective working group rituals
waning. According to her, these individualized pacts with the devil are anti-social, anti-
hierarchical and produce a rupture with the collective norms of the sector. Absi equated
this shift to the growing gap between socios and the rest of the labour force due to
mechanization following the privatization of the COMIBOL and the shift to
polymetallics. This is an interesting observation since, as we previously saw, Absi herself
notes that Tíos emerged during a process of mechanization of the mines in Bolivia at the
turn of the industrial revolution. Together, Absi and Salazar-Soler (1998) postulate that
the process of individualization of the organization of work is directly linked to the shift
from collective ritual practices to individualized pacts with the Tío or Muqui, pacts which
are looked upon with scorn from the outside, pacts which are considered infertile, and
which will ultimately result in some harm coming to the person who bargained with the
devil (they mostly describe economic ruin, although there are a pair of references in Absi
(2005b) to physical harm). The two ask what the causes of this process of
individualization are.

Although Absi and Salazar-Soler are reluctant to state the claim that Tíos and the rituals
that bring them to life have been abandoned, from my time in Potosí it appears to me that
the change that Absi was anticipating in the nineties when she completed her fieldwork
has consolidated itself. I would be hard-pressed to say that even the more individualized
rites towards the Tío continue to persist in a generalized way in this new form. The majority of miners I spoke with who were waged labourers, or who had begun to work in the mines within the past ten years, rarely made references to a Tío, or to any ritual commitments they had at their mines or within their cooperatives. Even their references to those who have signed devil pacts were few and far between. And, as I mentioned, those maestros who did mention Tíos did so in a way that lamented a past now lost. In cases where Tíos were still being called upon, and ritual obligations were being met, like in the case of Silvio, the Tío’s power was called into question and his role in the mining process was reduced. Tíos, it seems, have become more of an artifact than a sentient being with the power to act on his environment.  

And we can expect this to be the case, if we accept from Chapters 2 and 3 that significant changes in the kinds of mining in Potosí are impacting both the way work is organized and happens on the mountain and if part of the maestro’s role in mineral production is ensuring that Tío’s saqr’a is animated by constantly engaging him in the ch’alla and ensuring sacrificial substitutability by performing animal sacrifices (see Gose 1986, 306)—then their dispossession is going to at least produce a modification or alteration in these productive rituals.

But not all iterations of the Tíos are lost and in fact, as Absi and Salazar-Soler note, the ritual practices around Tíos are not totally gone. But they are changing and their changed

139 Absi notes that the Tio is debilitated but his powers could still be reactivated with these exceptional [individualized] offerings (215).
nature is significant and important for us to interrogate. On the one hand, they have become an omnipresent symbol of Indigenous/backwards mining for foreigners visiting Potosí. On the other hand, more dark and twisted tales of individual pacts with the Tío involving violence, sacrifice, and suicide flow rampantly through rumor and hearsay among miners and the working-class population in Potosí.

5.4.1 El Tío Turistico

During my fieldwork, Tíos were most present as an artifact of dramatic material culture at the mines which were frequented by tourists throughout the year. And, when miners I didn’t know thought I was a lost tourist wandering around their mines they would usually say, “Hey gringuita, do you want to come and see our Tío?” The most dramatic encounters with Tíos that I had during many visits I made into the mine were on guided mine tours with one of the city’s biggest tourist agencies, Big Deal Tours. The agency, like many others in the city, had giant posters of terrifying photos of the Tío on their walls and windows. And, from the perspective of those consuming these tours, Tíos formed a large part of the rationale behind wanting to enter the mines. Every mine tour (with this agency and others) included a visit to the mine’s Tío. And every tour guide built up a story about their centrality for “Andean miner mythology and their work.” Part of the narrative involved painting Tío as a villain, an actor to fear, an actor who could and did kill. But in practice, the tour also undermined Tío’s power since tourists were encouraged to hug the Tío, take selfies, and even engage in humorous gestures towards

140 I suspect this has to do with the fact that tourists and journalists—likely influenced by popular representations stemming from Nash’s work—are constantly asking to see the devilish figures.
their giant protruding member. On one such tour, I was particularly drawn in by my guide’s explanation of Tios.

Guiding a group of about 20 tourists, Pedro artfully built up the group’s anticipation about meeting the Tío de la mina face-to-face. He had just asked the group how many had heard of the famous Tíos in Potosí, and nearly the entire group answered in the affirmative, some whispering to one another about finally getting to see the mine’s Tios firsthand after having seen the “documentary” “The Devil’s Miner.”

Now, it’s important that you don’t get scared. You can’t show the Tío your fear. We miners believe that Tío is our partner at work. If we treat him right, he will treat us right. If we don’t, there can be accidents, or our mineral can disappear. Miners are taken all the time by the Tío because he has an insatiable hunger. This is why we work so hard to make sure to keep him happy and fed. Even tourists have died on these tours, some might say, it’s because they didn’t pay their tribute to the Tío. But we mustn’t either show our fear and we must bring him lots of offerings. Do you have your gifts for the Tío? Get them ready.
Rounding the bend of an empty tunnel to a worked-over gallery, I watched as the tourists started pulling out their cameras and snapping photos. Some of them stopped to pose beside the gigantic Tío who sat perched, covered in streamers and confetti, with a half-smoked cigarette in his mouth. The agency, I would learn later, had commissioned an artist in the city to erect three clay Tios in the mine. One was the diabolic figure now renowned around the world as the Tío de la Mina, another was a colonial-era Mitayo
miner hunched over carrying a load of mineral on his back, and one was a slave, painted black. All three were about six feet tall. As Pedro snapped pictures with the tourists alongside the Tíos (making peace signs with his hands and crossing his eyes), he spoke of the history of Potosí, from pre-colonial times to the present, and the importance of the miner as a central antagonist. Following his explanation, he demonstrated the ch’alla offering to the Tío, instructing the group to follow his lead, offering coca leaves, cigarettes and taking a swig of cane alcohol. As he passed around the full-proof alcohol, he laughed as the tourists winced at the burning taste in agony. Following this ch’alla, he told everyone to leave their gifts—bags of coca, bottles of alcohol and packs of cigarettes—to the Tío in order to bring good luck to the miners in the mine. As soon as the group exited the section, a member of the nearby working group would collect the offerings. This—as well as a 1 Bs per visitor tax—Pedro later clarified, was part of the rent that the agency paid to the miners to allow access to the mine.

Pedro’s agency was formed by former miners in the city and earned its position as one of the most “authentic” tourist agencies in Potosí not only because all the guides had been miners, but because they were truly excellent at what they did. Wilson, Efrian, and Pedro were excellent showmen, were worldly in their approach to their visitors, and were hilarious. In the 12 years the agency was open it built Tíos in the Candelaria, Santa Elena, and Grito de Piedra mines. Candelaria is one of the oldest mines in Potosí. It is telling that even here the Tíos were being built and used for tourist agencies. I spent many months in and around Candelaria and miners rarely spoke of their Tíos. Rambo, for instance, had been working in Candelaria for over a decade. I accompanied him many
times into the mine, as well as during his morning and afternoon pijcheo sessions. Never did he mention a Tío. Neither did he nor his comrades at the mine pay much heed to the few that remain underground. Although he knew of Tíos and their importance but chose not to engage with them, this was distinct from the larger hired groups of young day labourers, like the Chilenos from Chapter 3, who never referenced them at all.

On tours, neither the Tío nor the miners themselves are subjects or agents in these exchanges, they are objects—commodities—to be consumed by third parties, tourists from Europe and North America. Miners depend on mining to make their livelihoods, but the tour companies depend on the miners actively working to compel tourists to enter. The miners, just like the Tíos, are on display—and both constitute elements which constitute a tour’s legitimacy. As such, the ritual practices which surround them, although they have the potential to at least keep alive the practices of the past, have been voided of their productive context and socio-political content. Although the Tíos persist in this way, their existence is one of objectified symbolism.
Illustration 26: Frightened tourists from France on a mine tour in Caracoles. Photo taken by the author.

5.4.2 El Patron Matón /Killer Boss

I was walking with Chela down to the Calvario from Candelaria one early evening. We had been out on the mountain all day surveying mines and were tired and hungry. I was going to pick us up some dinner and then send her back home. As we stumbled along the makeshift pathways among the refuse on the mountain, we were startled by a group of young miners, clearly inebriated, as their path crossed ours. Chela pulled her toque nervously down over her head and shifted her walk to mimic that of a boy. This was a strategy she often used when walking alone, to avoid “getting into trouble” with miners at night. When they passed us—not without first making a comment about me, the blondie—we fell into a solemn discussion about a recent and violent sexual assault on the
mountain just weeks earlier—a rumour that was circulating about a young woman she knew who had been working as a llampira.

My mom told me a story she heard today from Luisa, you remember her, from Pailaviri. Well, Luisa told Mom that a young llampira that she had been working with had been raped and left for the Tío in Roberto. The guarda of the mine’s young son heard her screaming and crying—they went into the mine and there she was, naked in one of the parajes they were preparing for drilling. According to the guarda, the patron had been struggling to expand into a new area and so he had instructed his peons to find a young woman to feed to the Tío. Since they found her she hasn’t really said anything—she says she can’t remember anything at all. But we all know the truth.

She shrugged her shoulders at me. “Things are nasty up there these days.” I stopped in my tracks and turned to look at Chela’s face in the twilight. “Feed her to the Tío?” I repeated incredulously. I could believe the rape, I had heard so many stories about sexual violence in the city now (not only among miners but in many sectors) that I was even a bit desensitized, but this felt particularly gruesome.

Yes, that’s what I said. Kris, this happens all the time—especially to people from the rural areas, young people, maybe with no family members here in the city. In fact, it’s quite common that a patron will sacrifice a peon from the rural areas in the mine when he’s trying to open a new section. Just the other day Tinku was shooting his mouth off to his working group that they needed a stranger to show up so they could all benefit from an offering. Dad says they say it’s the only way they can get these huge sections to keep running—the Tío doesn’t want cigarettes or alcohol anymore, the Tío wants blood. And, since he’s a macho, sometimes it’s better if it’s a woman. That’s why it bothers me (me da cosa) walking alone at night up here. Obviously, my dad would kill anyone who tried to hurt me, but still, I’d rather walk around like a boy than risk it. Up here on the mountain, people just disappear.

We made it down the mountain in about 25 minutes, but I wasn’t hungry after that. This wasn’t the first time someone had recounted a story about socios/bosses feeding bodies to the Tío to increase their mine’s productivity. And this wasn’t an isolated incident. Taxi drivers, random strangers in the street, and even other miner friends had shared similar gory stories with me about human sacrifices to Tíos, and all were linked to the big mines.
that were producing oxides or polymetallic and at record pace. At one point during my time in Potosí, live offerings to the Tío made national news when family members of a young boy who had gone missing in the alluvial gold mining region of Guanay accused the cooperative miners (renowned for their structure wherein no socios work and all the labour is contracted out to a peon workforce) of having fed him to the Tío. Part of me had just equated them to over exaggerations likely due to too many violent B-grade movies on the interprovincial transportation busses. But hearing Chela say it made it feel more real, more possible, for some reason.

In 1995, Anthropologist Michael Taussig revisits his “Devil and the Commodity Fetishism,” noting that he regretted naturalizing the violence embedded in the claim that he made about what appeared to be a reciprocal basis of exchange between waged-workers and the devil when they formed pacts to better their position. Thinking about this later, he reflects that it cannot be considered reciprocal if the one signing the pact is doing so with his own life (394-396). In the above vignette with Chela, the reciprocity of times past, the days when the working group fulfilled its obligations to the Tío by keeping him fed, fertile, and happy (to the best of their ability) and in turn were rewarded with mineral and safety, appears completely turned upside down. Under these conditions, there is no reciprocity when the person being sacrificed is simply an object to be consumed by the Tío for a third party’s——the patron’s——gain. Whether they are true or not, these rumours in Potosí reflect a reality about how people understand the state of mining in Potosí today: the larger, wealthy, mechanized mines are running on blood. And it’s not
just any blood, it’s the blood of their waged workers, the ultimate gruesome finale to this acute form of exploitation.

Absi definitely recognizes these rumours in her ethnography but does not take the time to consider the implications of the shift from maestros sacrificing themselves in a pact with the Tío to bosses sacrificing another soul as an object for their own personal benefit. Furthermore, she tends to naturalize the violence in both scenarios as a mere consequence of individual pacts (see for example page 212).

For skilled mine workers in Potosí, their labour and the sociopolitical relationships and material environment, upon which and from whence it emerges, appear to be becoming unrecognizable. And, although mining broadly has been happening in the city for nearly five centuries, the changes they are facing appear to be consolidating radically in a mere pair of decades—a blip in the longue span of Potosí’s mining history. On top of the three areas in which miners are experiencing radical shifts in their modes of being, the mountain, the iconic symbol of Potosí, is at the brink of total collapse, representing a mirror of such, for some, of a broader process of change unfolding.
Chapter 6: The World Upside Down

In May 2015, the Central Civic Committee of Potosí (COMCIPO) announced its plans to carry out a General Strike in Potosí. The committee submitted a list of 26 sectoral demands to the Bolivian central government under the name of \textit{Pliego Petitorio}. When the government did not act on the demands, and when Morales personally refused to meet to discuss them, instead laughing cynically at the movement, the workers associations and mining cooperatives went on strike, closing the city off from outside work for nearly three months (Francescone 2017). The 99-day strike is claimed by Potosínos to be the most important general strike in the history of the city. It involved important alliances between cooperative miners, factory workers, municipal workers, and administrative personnel. When I read the list of demands from the COMCIPO, I was really taken aback. Alongside the “preservation of the Cerro Rico”\textsuperscript{141} were several demands around access to public social services. Three items requested improved access to healthcare, including (importantly) the establishment of an advanced care hospital in the San Cristobal mining neighbourhood, and two requested increased funding for staffing in social and psychological support services. Unlike the pliego presented in 2014, this list focused on economic reactivation plans\textsuperscript{142} for development outside of the mining industry and improvement of social services within and outside the city.

\textsuperscript{141} I will return to this idea of preservation later in the chapter. The Cerro Rico is undergoing a process of collapse, and so in this context, “preservation” essentially means ensuring the mountain does not lose its characteristic conic shape and thus its UNESCO status as a World Heritage Site.

\textsuperscript{142} The Economic Reactivation Plan or \textit{Plan de Reactivacion Economica} is a common term used to identify an economic development plan during times of economic crisis.
The strike was organized such that the city’s daily activities were severely impacted. Mineral production slowed to a halt, the mills shut down, food was difficult to come by and even tourists stopped coming to the mines. Cooperative miners formed an important sector of the strike’s strength, and they contributed significantly to sustaining it. Morales’ antagonistic reaction only served to fuel the mobilization and when members of the committee decided they needed to bring their demands to the capital itself to avoid being ignored any longer, 20 busloads of cooperative miners ascended on the city of La Paz to pressure the president and central government in their city (El Potosí 2015b). Those marches were repressed by the police, 47 miners were detained, and four faced criminal charges (Página Siete 2015). Ultimately ignored by the central government and criminalized by the citizens of La Paz as a “violent mob,” the march and mobilizations returned to Potosí, empty-handed and infuriated (El Potosí 2015a). Cooperative miners held such a central place in the drafting of the demands and sustaining the march that even the march’s mascot, a street dog who had joined in the protests in La Paz and had been given the name Firework (petardo—commonly used in protests), wore a miner’s helmet upon his ceremonial return to Potosí, where an estimated 185,000 Potosínos, nearly the city’s entire population, awaited the march’s arrival (El Potosí 2015). On the 99th day of general strike action, the committee, defeated by an arrogant and centrist refusal to take health and social programs seriously, declared a state of emergency but demobilized their strike position (Francescone 2017).

Before moving on, it is important to pause here to reflect on the significance of these mobilizations in the context of the collapsing mountain. This mobilization continued a
recent trend of historic temporal alliances between the cooperative mining sector and the urban and popular classes which bind the COMCIPO. Having Petardo “lead” the march as they arrive at Potosí is significant since, as Franz Flores (2011) convincingly demonstrates, there has always been a struggle between the cooperative mining sector and the COMCIPO, since the latter perceives the former as being the key actor responsible for destroying the Cerro Rico. He notes that during the previous historic general strike in 2010 which lasted 19 days, discourses of *Potosíno dignity* were key in bridging the enormous mobilization capacity of the cooperative miners with the demands of the urban and popular classes of the city. They were also central to contributing to the overall sense of triumph despite the failure to have really had any demands concretely attended to by the government. Fast forward to 2015 and we can see how 180,000 people were waiting for the marchers upon their return, despite its arrogant defeat by the central government, was perceived as a similar triumph. As one miner told me, reflecting on his role in the mobilization: “us Potosinos, we do not let anyone humiliate us. We may be poor, we may be humble people, but we are proud. We will never forget what they did to us, what they continue to do to us. Now, our President was very arrogant with us, and it may be that he regrets it, but it is too late.” A sense of Potosíno dignity or pride clearly motivated miners to join the ranks against the centralist positions of the government, and the pliego certainly shows a diversity of points that include sector-specific demands, but those are few compared to the others, which are more social in nature. As we will see throughout this chapter, my sense is that although the tendency has been to perceive cooperative miners as a self-interested sector that only mobilizes in masses for its own
benefit, miners are also residents of the city and the department, and their sense of dignity is also wrapped up in the material conditions that the city confronts.

The presence of these kinds of more socially oriented demands in an economic reactivation plan isn’t surprising if we consider their centrality within the context of the ongoing and very public and literal crumbling of the Cerro Rico de Potosí. At the centre of the discussions about collapse that I was having with miners, residents, and public officials were the very literal implications it was having for mine worker health and safety. As we have just seen in Chapter 4, there was consensus among miners that their working conditions were getting worse. But, what this list and those conversations revealed, were the broader parallels that residents were making with respect to a perceived change in social relations in the working-class neighbourhoods in the city.
6.1 Accidents and Death

Illustration 27: “Here rest the men who left their lungs in the mine.” Cooperative’s mausoleum in the city’s general cemetery. Photo taken by the author.

We sat nervously in the waiting room at the private clinic with Gina and Wilson’s two girls. Gina had called me earlier that afternoon, speaking so rapidly I could barely make out the “Cristinita, can you go pick up the girls from their schools and bring them to me? Wilson had an accident in the mine, and we are now waiting in the clinic hoping that the doctors will see him soon—I hate to ask but we’re all here trying to get everything in order and I just can’t get away.” Wilson, a former miner who now worked as a tour guide, had been making his way out of the Grito de Piedra mine (where his father, brothers, and more recently he had worked) behind the group they had brought in when the cave-in happened, and Wilson suffered a planchón (the name for a falling mass or rocks inside the mine). The private clinic was cold and dark, but it was the only place that would admit Wilson. Walking in, we were horrified by a sign which read: “Distinguished
Patient. BEFORE ANY TREATMENT, please consult the fees and honorariums of the clinic and its specialists.” A partner from the mine had driven him to the Bracamonte public hospital, where he was immediately turned away on the grounds that there were no available beds. They tried two or three more hospitals and clinics that couldn’t admit him because their CT scanners had all been shorted out by a recent lightning storm. Finally, more than an hour later, they settled here at the Centro Médico del Diagnóstico de Potosí. Gina was frantic. She and her in-laws had been running around looking for medicines, syringes, supplies, blankets and sheets for the bed, and a straw filled mattress for Gina to sleep on to stay with him overnight. They had also been collectively pooling their money, since, as the sign noted above, the receptionist refused to admit him without prior proof of payment. Pedro, his brother, said to me as we were sitting around, “We’re all here as a family, not just for moral support but to protect the patient. If the doctor is alone with the patient, they will not take proper care. When we are many, they are more careful.” We sat with the girls, helping them with their homework while waiting desperately for some form of communication from the doctors or nurses. Finally, we were told that we could see Wilson. He had undergone a first round of chest x-rays, a tomography of his head, and a physical examination. Walking nervously down the narrow hall where the mint green paint was flaking and chipping, we slipped into his room with the girls. Wilson was hooked up to an oxygen tank and I.V., his head was fully bandaged with gauze, now discoloured brown with dried blood. We couldn’t see his left

143 According to Gina, they were turned away after the receptionist took one look at the mine clothes they were wearing—this is common practice and miners often complain about the malpractice that happens at the public and private clinics due to their class backgrounds. (See cited articles and studies) I have written about the relationship between miners’ health, malpractice and politics in detail here: Francescone 2020.
eye, since it was covered by the dressings. Now, the girls rushed to his side, and he meekly struggled to put his arm around the eldest. Shortly after, Gina returned with the mattress and blankets, the girls piled onto the floor, and we sat on the edge of the bed to chat. Wilson was shaken up, and as he told us what happened, his voice cracked:

Maybe I wasn’t paying attention—though, I can’t remember seeing the fissure in the rock overhead and I’m usually very good with paying attention—for the tourists’ sake you know. Apparently, the guys in the work area above where we were had set off a couple of detonations. Well, we were walking, doing the tour as normal and getting ready to leave, when before I knew it, I heard this explosion. I fell to the ground. I honestly felt like there had been an explosion and I was dead. I thought I was dead. I woke up and looked around. I stood up and realized my head was bleeding and I couldn’t really hear very well. I headed for the entrance in a daze—I wasn’t really that far in. I stood outside and called my mom. I told her I had had an accident and not to worry, but I really thought, I really thought for a second I was going to die, that this was the last time I would speak to her. Efrain came with my tourists and we had Jose drive me to the hospital in his car, along with the other two miners. I am just thankful that I didn’t have Efrain’s group with me, he had a little five-year-old with him…Imagine, it could have been much worse! Turns out the explosion released a planchón (rock material that is loosened and falls) and my helmet was split in two by the impact. I’m still really shaken up about it, I truly thought I wouldn’t see my family again.

As he reflected, he gestured to his youngest, “Come here, hijita (little daughter).” Nikol obliged and squirmed as he pulled her close. It was hard seeing him so solemn. Wilson, like many miners, was notoriously a clown. He was always cracking jokes, laughing, and singing. Now, in this horrible room, grey, thin, and bandaged, he had the look of many of the others we had visited in the hospitals in the city. He looked weak and small, he looked like he didn’t have any hope. We would later learn that he was concussed, had to
have his head wound stapled, and had early-stage silicosis\textsuperscript{144}, but the doctors believed his eyesight and earlier brain trauma were not significantly affected by this accident.

That year (between November 2016 and November 2017), there were several accidents at the Grito de Piedra mine, four of which were fatal. Never had they had so many accidents and deaths in one year at this mine, and as such it weighed heavily on the socios\textsuperscript{145} since, unlike some of the larger mines, the mine had only a dozen socios and peons working at any given time. Grito de Piedra was the only exclusively zinc mine on the mountain. Grito had been started by cooperative miners following the privatization of COMIBOL and the surge in base-metal commodity prices in the nineties. Wilson’s father had been one of the socios to open the mine. According to Grover, another one of his brothers, Grito was caving in from the inside due to the need to continuously increase output due. The overall diminishing grades meant that partners were barely able to make ends meet. With many of them in debt, working more despite the dangers was the only option they had.\textsuperscript{146} Earlier that same year while visiting the tomb of another Grito partner, Geronimo, during \textit{Todos Santos}, one of his comrades noted that for the past few years, times had been very difficult in the mine, with many of the partners leaving for Argentina for these

\textsuperscript{144} Silicosis is a common illness that commonly affects miners due to the constant inhalation of silica dust particles. Since miners in Potosí perform “dry-drilling” (water is used to mute the dust) they breathe in this dust constantly.

\textsuperscript{145} Shortly after a cave-in killed Geronimo, a socio of Grito de Piedra, we attended the bereavement services his family held for him during Todos Santos. All of the mine partners showed up to drink, eat and play T’ockola but the ambience was somber, and, as the partners drank and remembered their compadre they reflected on the overall state of disrepair of the working conditions in the mine, disrepair which many of them felt totally without the means to correct.

\textsuperscript{146} For another example of how another partner from Grito de Piedra, Simon, faced a near-death explosion in 2018 and how his experience with discrimination from the medical system in Bolivia nearly cost him his eyesight, see Francescone 2019.
same reasons. Since the mine was small, there was little room for expansion, and the
grades were declining, coinciding with a fall in base commodity prices. Geronimo was
barely making ends meet—at the time of his death (he fell into the work area of partners
below him when the ground opened up following their expansion upwards, suffocating)
one tonne of mineral with 2% silver and 10% zinc was getting him about 700 Bs
(100 USD) at the mill—barely covering his costs.

Illustration 28: “The Devil’s path” connects separate work areas in the Caracoles mine. Photo taken by the author.

Over that short year and a half in Potosí, many miners I knew personally, or through
contacts, were victims of accidents in the mines. Some of those accidents were fatal,
others were extremely serious, and others were near misses.\textsuperscript{147} Accidents and death had become so normalized that they were known by all but rendered invisible by their ordinariness. Not even Wilson, a second-generation miner-turned-guide\textsuperscript{148} who, after a previous severe brain injury in a car accident, had left the trade “for good,” was safe from the risks that working in the Cerro Rico presented. Miners recognize that the mines are dangerous and that things are getting \textit{worse}: the mines and thus the dangers are more unpredictable, cave-ins are more frequent and terrible and toxic gasses—the silent killer—quietly creep into work areas without miners knowing to look for it. Some of this can be attributed to a loss in the structure of training that the trade provided previously as discussed in chapter 3, as well as the loss of the union as the central mode of advocating for health and safety measures following the consolidation of the privatization of the mines in the mountain in 1985\textsuperscript{149} which left individual partners as those solely responsible for their health and safety, as well as investment in mine development, which ultimately means mine improved safety (Francescone and Diaz Cuellar 2013, Michard 2008, Poveda 2014). Accidents and death in the mines formed part of the daily interactions within the working-class neighbourhoods in Potosí.

In early November 2017 we took to the streets with many other families of miners, walking the upper mining neighbourhoods of the city to visit the tombs that had been set

\begin{footnotesize}
\textsuperscript{147} Since my fieldwork from 2016 to 2017 and 2018, two miners with whom I had close relationships have died of mine-related accidents, and I knew another four who died from mine-related accidents or illness. A handful of others experienced “near misses.”
\textsuperscript{148} Even tourists, often Europeans looking for an exhilarating brush with death in the mines of the mountain, fell victim to mine accidents.
\textsuperscript{149} According to biostatistics reports published by COMIBOL, there were two, five and six accident-related fatalities at the Unificada operations in Potosí in 1972, 1976 and 1977 respectively, for a workforce which oscillated around 2,200 workers.
\end{footnotesize}
up by families who had lost relatives that previous year. Early in the afternoon after setting up the family altar and preparing the traditional achacana\textsuperscript{150} and miski lawa\textsuperscript{151}, we left with the three generations of the Montes family. The kids were tickled with delight, carrying their pillowcases for the bread they would collect and reciting the prayers they were expected to say at each tomb. All Saints Day was still celebrated traditionally in the working class “upper” neighbourhoods of the city, meaning that each house’s celebration was open to the public, that the festivities lasted an epic three days with copious amounts of food (women prepare food, we learned, for about 75 visitors and bread for 150), drink, dancing, and collective mourning of the dead. Although we were just wandering randomly from door to door, we discovered that many of the dead were young men who had died in the mines, leaving their young families and wives behind (perhaps between 20 and 25\% of the houses we visited were miners’ homes). We walked for several hours, stopping to eat, drink, and lend our respects. In general, people’s moods wavered between happy and giddy to solemn and serious. We met several widows of miners and their children and saw a variety of altars, although the most impactful was likely Sandro Fuertes’ house, which we visited on the second day of visits.

Sandro Fuertes was a young man in his early thirties who had died tragically when the work area he was working in as a partner of the Villa Imperial cooperative caved in and

\textsuperscript{150} Achacana is a stew made from a cactus from around Potosí which is ripe for harvest during this time. The insides, similar to spaghetti squash, are soaked and then slowly stewed along with a bit of pork and spicy yellow aji (pepper). It is then served with chuño (freeze-dried potato) and rice.

\textsuperscript{151} Miski lawa is made from boiling sundried apricots, stone in, until the fruit rehydrates with cinnamon and chankaka (dark unprocessed cane sugar). Once the water is flavoured, cornstarch is added to make it silky and slightly thick.
he suffocated. He died leaving his young widow, three very young children, and his already widowed mother. To make matters worse, Sandro’s death was only the most recent in a string of tragedies that had struck the family over the past few years. First, one of his brothers had died after being assaulted, and soon after, another died in a transit accident. The father, the miner of the family, upon seeing his second boy dead, had also died, leaving the mother and her youngest son, Sandro, alone. Sandro had left Potosí to work in Argentina but did not have much luck and decided he needed to be near his mother, who was grieving the loss of her sons and husband. He returned to Potosí and his family, and in doing so, returned to the mines. Although he had spent many years as a teenager working with his father, “the conditions have been changing so much in this past decade, that he likely didn’t even know how to handle the differences,” commented another miner in between spoonful’s of spicy pepper noodles. His mother cried to Cristina, the Montes’ matriarch, that she regretted his return to the city—blaming herself for his loss. His tomb was very simple, with a large photo of him at the top, another at the bottom, and the tables displayed the soccer trophies he had won, and his soccer ball, worn and dusty. “He was a champion, soccer was his distraction—he should have been playing for Real Potosí (one of the city’s two professional soccer teams), not working in the cooperative,” a friend of his said, as he gave a short speech about Sandro in front of the neighbours who had gathered to eat, taking a swig of alcohol mixed with orange tang in between long pauses of reflection. Sandro’s young widow sat alongside the tomb, staring at the photo, which had been placed in the middle. She stared at his picture the whole time we were there, except when greeted or comforted by someone coming to pay their respects. She was dressed all in black, was slight, and was very young. She had a
transparent black veil draped over her hair and wore black sneakers with white laces. Her daughter, about nine and a spitting image of her father, wandered between her mother and attended to guests, while her youngest son sat on the arm of the chair she was in, caressing her hair every once and a while. The mood in the small salon was sombre, more so than any other place we had been in. Since Sandro had only been working for two years, the family didn’t have any savings and his payout from the cooperative would be small. Since he didn’t have any sons old enough to take over his father’s work area, they would likely lose their investment.152

In 2014, the Non-Governmental Organization “Musol” estimated that 14 women were widowed by mining-related deaths per month in the city (168 per year). Consolidated statistics on labour-related accidents and deaths in mining Potosí are apparently collected by the Departmental Ministry of Labour but are not published or made public. Labour inspectors153 are expected to document all accidents and deaths when they occur at the mines and mills and send that data to La Paz, but, due to the highly politicized climate that surrounds cooperative mining, as well as a lack of capacity, they only really investigate when complaints against a particular entity are presented. The data on accidents and deaths, then, is fragmented, often appearing disaggregated in news reporting and from unofficial sources, and getting a handle on close representations to

152 As we saw in Chapter 1, one of the ways that miners obtain the right to work in a particular mine is by inheriting it from another socio, often a father or uncle.
153 There are only a handful of labour inspectors for the entire city of Potosí, representing a population of over 200,000 inhabitants. When we met with one of these inspectors in 2017, they informed us that they would need at least 10 inspectors to monitor the mining sector alone. This is a product of the neoliberalization of the public service (Francescone and Diaz 2012) and reflects the lack of importance that the Movimiento al Socialismo Government gave to the working class (Diaz 2019).
reality is like shooting in the dark. Faced with a dearth of updated data on accidents and
death¹⁵⁴, I spent several days sitting at a dusty desk in the Special Police Forces
Combating Crime (FELCC) in Potosí reviewing and cataloguing the cadaver collection
report notebooks from 2012 to 2016. The data was gruesome and difficult to process
emotionally, and I felt like I learned about another side of Potosí, a terrible and violent
side, which many often commented on, but I seldom experienced first-hand. From these
notes we calculated that those 145 miners that were reported dead by the police in the
four-year period in deaths that we classified as labour related¹⁵⁵.¹⁵⁶ These deaths
accounted for 91% of all labour-related deaths in the city (and, significantly, 18% of all
deaths reported in that timeframe). The most prevalent cause of death during this period
was bodily trauma resulting in death by being crushed by a rock mass or serious fall, both
directly related to cave-ins (in over 55% of the cases). The second-most prevalent cause
of death was intoxication by poisonous gas (32%). Both confirmed miners’ suspicions
about what was killing them. It is likely that these numbers are underrepresented, since
there is an important transient workforce who work as day labourers in the mine who are
likely undocumented, and whose deaths likely go unreported.¹⁵⁷

¹⁵⁴ For a discussion about the lack of labour-related mine accident statistics, see: Francescone and Diaz 2012
¹⁵⁵ Very few of the reports are actually specified as “labour related,” despite the testimony clearly
identifying a place of work and cause of death. Furthermore, we included labour-related deaths as those
outside of acute accidents, where a testimony referenced “mal de mina” or “silicosis” or “pulmonary
deficiency.”
¹⁵⁶ This figure appears to coincide with several declarations made to the press by the Federation of
Cooperatives of Potosí over the last several years.
¹⁵⁷ As already noted, data on work-related accidents in cooperative mining is not collected by the relevant
government bodies. The only study (INCO (2000). Diagnostico de la minería chica y cooperativas en el
departamento de Potosí. Viceministerio de Minería y Metalurgia. COMIBOL Archive Registry #: Ae-
CDM-0006) I could find which made any reference to accident reporting was from a survey completed for
the Vice Ministry of Mines in 2000 (a time when the workforce is much lower than today) with the support
of Canadian development financing (IDRC). The survey, which is limited in scope, notes that cooperatives
in Potosí (across the department, not solely in the city) responded that accidents occurred an average of 42
The impacts of mine-related deaths and accidents, then, are significant and far-reaching, not only for the miners themselves, but for the many family and friends members left in their wake—since mining represents an important and central portion of the working times per year, or one accident for every 80 workers. If we apply this rate of accidents to the number of workers I estimated are working in the Cerro Rico (5,500) we get 127 accidents a year, a likely extremely low representation of the present reality. This actual number of accidents is liable to be closer to the thousands if we compare it to the accident rate of the Unifedada industrial operations prior to their privatization or even what appears to be a more realistic reporting (in the survey, the cooperative, which reports the highest level of yearly accidents is Chorolque (300) in the Southern Chichas municipality of the department, which had just over 1,000 workers at the time, meaning that one third of workers had an accident that year.) from one of the cooperatives surveyed from Sur Chichas, Chorolque (I visited Chorolque in 2015 while working as a consultant for CEPROMIN and entered one of the mines there. At the time the cooperative workers were complaining of the dangerous conditions, citing gas intoxication as the most significant risk due to the lack of proper ventilation.). If we use their response as a base, then that number increases to 1,667 accidents per year, or about one in four miners having an accident per year.
population (Ferrufino et. al 2008). Despite their absence in local and national media reporting, they are experienced and re-lived at the level of the family and neighbourhood in the city. They must also be understood in direct relation to the overall collapse of the mountain and the mines within it. The frequency of accidents and death are often used as manifestations which reveal the fragmented, underfunded, and discriminatory nature of the public health system in the city (Francescone 2021). We can understand then, why such a historic and sustained strike would centre its demands around healthcare quality and coverage. The overwhelming emotions that accidents and death leave in their wake often serve as a point of reflection to not only understand mining, but the overall state of change of the social relationships in the city.

6.2 Potosí’s Underbelly

“Tu envidia es mi bendición” (I am blessed by your envy)

—a common sticker found on people’s vehicles, especially small transport drivers

As I mentioned in the previous chapter, I was initially confused when, during my conversations with residents in the city, they would shift from talking about the mountain’s geophysical collapse, to recounting a gory story of a violent sexual assault, suicide, or mine invasion by a neighbouring cooperative. I often found myself confused as I tried to understand the logical shift they were making. Often, their shift wasn’t directed at the mining activities at all. But many of these conversations shared similar commentaries on Potosí’s current state: the Cerro Rico’s summit collapse was linked in
some way to the overall perceived decay in social relations in Potosí. At first the link became most evident when miners would talk about how their relationships to other miners had been changing in the last few decades. If we recall Chapters 2 and 3, miners stressed that today’s labourers were not miners, not only because of the work they were performing, but because of the way they were treating one another. They were, according to Daniel, a retired third generation cooperative maestro, raised incorrectly:

Today all that they [referring to peons and patrones] do is drink and party. They’re rough and there’s no respect. Not for us old timers—not for anyone. There is too much arrogance and too much getting rich quick—having money like that—especially when you’re just a young man can ruin a person.

In 2017 I attended the anniversary at the Candelaria mine where Chela and her mother were working as guardas and Rambo, her father, was working as a segunda mano. A fight broke out just as the celebration was getting underway, because one of the patron’s working groups—the chinos—had been goading Rambo by openly insulting his teenage daughters in their presence. The group, with the oldest being around 20, had been hired by Benito to work his areas in the mine. Benito, though, had accumulated a substantial amount of debt with Rambo’s wife over the years when prices were high, and was, now that prices were levelling out and his mine wasn’t performing, refusing to pay her. Now that the family was in dire straits, Norma had been urging her husband to collect.

It is important to note here that I am aware that presenting what follows entails a risk of reifying commonly held misconceptions and beliefs by the Potosino and Bolivian middle classes about working populations in general. These misconceptions are captured by the way the middle-class media represent some emblematic stories by conceptualizing miners or workers as drunkards or violent beasts stripped of all content and agency (Absi 2005b). However, my conversations with friends and family in the working class neighbourhoods of the city constantly brought up stories of violence and revealed a problematic which, as we just saw, had the power to congeal a powerful political working-class movement genuinely concerned for the future of their youth. As such, I am trying to approach this section with caution and out of respect to the challenges and fears that the residents of the San Cristobal, Concepcion, Plaza del Minero, Calvario, and Campamento neighbourhoods shared with me during my time in the city.
According to Chela, to avoid paying and get Rambo kicked out of the mine, Benito had been making his life impossible with the hope that he would lose his cool and do something stupid. As the chinos egged Rambo on, he snapped, grabbing the eldest and most vocal around the neck and throwing him to the ground. This didn’t get him kicked out, but eventually he was forced to leave Candelaria when Benito convinced the neighbouring mine that was renting them a compressor that Rambo shouldn’t be allowed to use it. As we saw in Chapter 1, not having air means having to work for days, and not hours, drilling. In the end, Norma never got her money, and the family was forced to move out of their home and find alternative arrangements. Tragically, Rambo died just over a year later, when he drowned when the mine he was working in flooded with water following a pump malfunction.

At the level of the mine site, much of the conflict between workers manifested around discussions of jealousy and competition. I was privy to many conversations when miners would gossip about betrayal between working groups, several fights between patrones about placement in production and refining queues, and heard about acts of sabotaging equipment to slow or eliminate a working group’s ability to advance. “Today, we miners are fuckers, we are terrible, and today’s situation doesn’t leave much room to trust one another like before,” a socio from Rey Socavón confided to me outside his mine one day. There was a continuum of daily violence with the extreme culminating in violent physical appropriation of mines or work areas. There was consensus that economical work areas were becoming fewer and farther between—the available mines could not keep up to the same pace of the accelerated race to produce, so mines were subject to invasions at any
given time. When two work areas from two different working groups are about to connect, miners assemble an extra stock of dynamite and they “fight it out” to establish who will eventually take over that section of the mine. According to interviews conducted by Emilio Madrid Lara and Natalie Balderrama in Potosí in the early 2000s, miners were also noting an increase in mine invasions and violence and attributing them to this acceleration in production. Francisco Careño, a miner from the COMPOTOSÍ cooperative, had this to say about the situation:

Since we are today extracting in quantity, our runs, our advances, we are advancing really quickly. Before it was really rare to have these encounters between mines, between working groups, it was rare that we would encounter one another. Now, on a daily basis we have these run-ins because the whole world is advancing. Sometimes we try to be reasonable and discuss [who gets the vein] but ultimately the “law of the mine” is that whoever gets there first, gets the vein (as cited in Madrid y Balderrama 2004, 45).

Beto, a tour guide who still moonlights as a segunda mano, told me that he had been present during one such invasion while he was working at the Cotamitos mine. He remembered being young and “fired-up” about the prospect of fighting for his right to work and remembers that the tunnel where both teams had met was immediately filled with exhaust and smoke as they threw dynamite, insults, and punches back and forth. At the time it was established that his team had won, and after, his boss proudly bought a few cases of beer to celebrate with them. “Does anyone ever die in these fights?,” I asked, a bit horrified about the prospect of this barfight on steroids unfolding inside a mine. “Yep. We were lucky, we only had bruises, nothing serious. But I know of comrades who have died during one of these confrontations. I guess, though, maybe on some level that’s better because—if you don’t have work—what can you do?.” It’s
important to note here that it was the patron’s peons and segundas manos, and not he himself, who were risking their lives for their right to work inside the mine. Although I cannot really corroborate it directly, it’s possible that these kinds of incidents have increased because the owners are not directly involved in the risk-taking. We can also consider this as a less distorted but none-the-less concerning example of the ways that patrones were making direct human sacrifices to the Tíos in Chapter 5.

Miners were also clear that some aspects of their social behaviours were becoming dangerous when unmediated by the social fabric that had existed prior. For example, the issue of social drinking and the risks of alcoholism and indigence was forever a point of conversation, and its impacts were visible throughout the city. On any given Sunday, you could walk around the upper mining neighbourhoods of San Cristobal or Calvario and see the product of a weekend of benders. Tens if not dozens of men would be passed out on the cold and wet streets well into the midday. Sometimes, we learned later through the police reports, they would never wake up, asphyxiating on their own vomit or freezing to death in the cold. Alcohol consumption, as we learned in Chapter 3, is an important part of the collective and individualized rites of the ch’alla, and collective drinking is essential for working groups to develop relationships of trust within the working group. Miners recognize the limits of these activities and several noted that miners were falling victim to indigence. Rambo, unfortunately, was one of those miners who was always struggling with antisocial alcoholism—he had been ever since they had been robbed of their life savings by a close friend and forced to sell their bakery in Villazon nearly two decades before. His wife and daughter were always aware that, if something went wrong with the
mine (for example, if it took him longer to find a vein, or he ran out of space to advance),
that they could expect him to “lose himself on a bender for one or two weeks at a time.”
Although Rambo did die while working in the mine, his family always thought that it was
his long bouts of alcoholism that were going to take him.

Alcohol-related causes of death were a significant cause of death for miners—13% of all
miners’ deaths we recorded from the FELCNN notebooks were alcohol related. Perhaps
unsurprisingly, as prices started to fall from 2013 to 2016, alcohol-related deaths
increased from one to two per year to a tragic eight in 2016. Equally as disturbing were
the levels of, and discussions about, suicides. I heard dozens of stories which suggested
that a miner took his own life when he took ill and couldn’t afford to pay the medical
bills (see Francescone 2020), if he lost the ability to work from an illness or accident, if
he became indebted and couldn’t cover his bills, or if he couldn’t strike a vein. Often
miners spoke of the need to “die with dignity” as opposed to dying thin and frail on a
hospital bed hooked up to an oxygen tank, or indebted and “begging on the streets.” The
police notebook interviews confirmed these stories, and provided new insights into
miner’s suicides, which also sometimes involved domestic violence or infidelity. Sadly,
12% of all miner’s deaths in the period covered were registered as suicides, and some of
them were so brutal, that even dwelling on them is traumatic.

During the first few months of my fieldwork, I felt like I was sheltered from the dark side
of Potosí that everyone spoke to me about in our conversations. I remember thinking at a
certain point at the beginning that Potosínos must be quite self-depreciating and
exaggerating this “dark side” that they constantly referred to. I also thought that it might be the influence of the Church, which had people constantly portraying events as deviant.

The first time I experienced what I eventually came to understand as part of this broader social sense of crisis I was in my apartment. I found out from friends after I arrived that we had rented an apartment in a red zone, but up until this moment I had never seen anything that suggested this might be true. That Friday night in September 2017, though, things changed. I was woken up to the sounds of screams outside my window which looked out onto the Plaza del Minero. At night, the neighbourhood looks different—the sky is nearly permanently clouded over, the wind howls loudly, the limited lighting casts strange shadows which, when combined with the extreme and inhospitable cold, give the appearance of some early Sherlock Holmes set. Roused from my sleep by the screaming of a young woman, I jumped out of bed and looked out the window just in time to see a man hit her in the face and then drag her by her hair across the plaza, while his friends watched and did nothing. Trying to break free, she tried to scratch his arms but couldn’t escape his fury. Panicked, I threw open the window and screamed down at them, demanding he leave her alone, hoping that my screams would wake up a neighbour who could go down and intervene. One by one, lights around the plaza went on and I saw neighbours head to their windows. But no one said anything. Frightened by the lights, the abuser’s friends ran and grabbed him, leaving the woman bleeding on the pavement. After they were a safe distance away, I ran down to the woman and then ran to the police post which was just 200 m away. Sick to my stomach, and after banging on the door for five minutes, an officer showed up to the door clearly annoyed, and when I asked him
why they didn’t attend to her calls for help, he answered, “It was clearly a couple’s dispute.” As I waited for them to come out to take her statement, the woman had gotten to her feet, flagged a cab and left.

Although only a few months into my fieldwork, this moment marked my time in the city profoundly. Unfortunately, this was not the only time that we were forced to intervene in these kinds of disputes. On several occasions we accompanied friends who were victims of gender-based violence (psychological, physical, stalking, etc.) to report their situations to the relevant authorities, and we were continuously met with a complete disregard and apathy for their situations. Later, when we scoured the FELCNN notebooks for mine-related deaths, we were both shocked and appalled by the horrific acts of gender-based violence committed against women and children that were never discussed publicly, but which it seemed that everyone was aware of. Everyone had gory stories about their neighbours and acquaintances. But, just like the dearth of statistics and information about mine-related accidents and death, it seemed too mundane and normalized to merit public debate among the urban middle classes.

In a disturbing meeting with Noemi Coria, a labour inspector for the Potosí departmental government, what started out as a mine-labour dispute devolved very quickly into a disturbing story of violence. According to her, a guarda had come to the ministry to complain that her employer was trying to fire her and kick her out of her home at the

159 As someone who has experienced sexual violence in the past, these incidents also affected me in ways that were likely also re-lived as personal.
mine site without compensation. When the woman approached Noemi, she noted that the patron of this mine, one of the infamously famous patrones at that, has been threatening to rape her. She feared for her life and the lives of her three young daughters but she was determined to submit a formal complaint because she didn’t have any economic alternatives or anywhere to go. After two public hearings of her case, one of her daughters was kidnapped by the brother of this patron. She was then raped and held hostage in Sucre to force her mother to drop the case. She eventually escaped, and made it back to Potosí, where she underwent forensic analysis which confirmed the sexual violence. The threats continued throughout the case and eventually Noemi advised her to drop the case, noting “for the safety of your girls, you shouldn’t pursue this further.” The guarda was left with nothing, and the patron went free.

Finally, just like our house visits during Todos Santos were plagued with the deaths of young miners, they were also plagued with youth suicide. And throughout my time in the city, I heard several heart-wrenching stories of young girls, boys, and mothers taking their own lives. And sometimes those stories hit close to home. Just shortly after arriving in Potosí, I found out that the owner of the apartment I was renting had been forced to rent it to pay for the unexpected funeral expenses of her teenage son, after he had taken his life when his girlfriend had broken up with him unexpectedly. We subsequently received an invitation from the owner to visit and pray for him at the tomb she had assembled for him during Todos Santos. When a neighbour’s friend’s young daughter took her own life by taking rat poison after failing a math test, I spoke to the Montes’ matriarch, Mama Cristina, about the issue over breakfast one morning before heading up
to the mines. “Before, we never talked about suicide, and you never really heard about it. If you did, it would maybe be an old man who just wandered away and never came home,” she told me between mouthfuls of bread and coffee as we huddled under blankets in the family’s cold kitchen.

Today, though, I hear of so many cases. So many kids. My heart aches because I don’t understand what’s going on—our children are taking their own lives [emphasis hers]. I feel like we are failing them. But it’s hard because we want our families to stay together and Potosí is all we have known—but, there is no future here. My heart is torn because I love Potosí, but what will my grandkids do? There is just so much violence and drinking—look at my kids, even they have had very low points and I have been scared for them. I’m thankful I have them all here with me, but I’m not sure the future will be the same for the new ones.

As I previously mentioned, the most traumatic part of reviewing the FELCN cadaver reports were the suicides—we were shocked by their prevalence among the deaths reported but also the content of the notes about the incidents. From 2013 to 2016, there were 149 reported suicides and attempted suicides and the causes ranged from domestic violence and family disputes to indebtedness and economic crises, to pre-existing health problems. Of the total suicides, the average age was 27 years old, and 20% involved children under 15. Most of the suicides were committed by ingesting poisonous substances, but some of the most horrific cases involved a more public event involving dynamite. Of the latter we read multiple cases where a family member used dynamite to end their life while other family members or neighbours were present. Unfortunately, suicide statistics are not collected on the departmental level and so I am not sure to what extent Potosí represents an outlier or simply replicates a general pattern across the country. The national average according to the World Bank in 2019 was six suicides per 100,000 people. During my time in Potosí, the city had just approximately 250,000
inhabitants, and those two years registered an average of 19.5 suicides per year, making the rate in Potosí higher than the national average.

While completing preliminary fieldwork in the city during the historic mobilizations in 2015, I remember being impacted by mothers of suicide victims pleading to the public authorities to take their demands seriously on the local television stations—“our children our killing themselves! What does this say about us as a people?” one mother reportedly told reporters, according to my notes. Points 18 and 26 on the pliego demanded financial support to provide social services and psychological services for the city’s residents, and specifically its children at the level of schools. In the backdrop of the mobilizations, parents were interpreting the suicides as reflexive of a crisis within the school system—tragically at least five children took their own lives in 2014, and again in 2015. Just like the suicide rates more broadly, they took place primarily in the working-class neighbourhoods. And like the health system, these schools are criticized by the parents for providing poorer quality education and discriminating against students who work parallel to their studies or come from rural areas.

6.3 Collapse as Indexing More Than the Mountain’s Iconic Form

In 1626 the inhabitants of Potosí let loose on the reins of their vices as much or more than in the preceding years and became so involved in them that they became so lost and vicious with the occasion of the new riches that the mines of the Cerro gave them. They were so involved in them that they lost their humility and became worse, falling into the extremes of everything that is bad…because of this God our Lord was so angry that he released and shot the sharpest arrows of his wrath and anger against this town with so much fury that everyone understood that they had reached their final destruction. His majesty flooded them with furious waters so that at the sight of the havoc that was done in
their parents, brothers, relatives and friends, with tears of their eyes they softened and moistened the dryness of their chests that had only produced the thorns of sins…as punishment God our Lord lashed out onto the Ribera, on its mills and population with such an enormous wave of water that was unleashed from the lake…produced more deaths than one could imagine… Potosí while you were exalted in your prosperities you were unable to see how low your sins had taken you. You fell miserably from the greatness you once were and blinded by your arrogance you were challenged by God!

From, Bartolomé Arzán’s de Orsúa y Vega’s Historia de la Villa Imperial de Potosí, 118-123.

In 1626, in the middle of an uptick of never-before-seen wealth and prosperity thanks to the application of mercury amalgamation and Toledo’s m’ita forced labour system (Bakewell 2010), Potosí faced what would later be referred to as one the three disasters of its colonial period (Hanke 1956). After a week of incessant and irregular heavy rains, the complex Kari Kari dam system, which sat above the city, providing water to the residents and series of mills below, breached, unleashing havoc. As it pummelled down the mountain for all those below to see, it overtook the Ribera water canal, which centralized the mills and provided hydropower to the operations, destroying them one by one and creating a landslide of mercury and ore-laden sludge. As the sludge, powered by gravity, carried on down the mountain, it overtook 46 blocks of the Spanish neighbourhoods below, destroyed some of the city’s most important parishes and churches, and drowned and crushed an innumerable amount of mine and mill owners and their workers, members of the clergy, and the population writ large. Chronicler Arzans de Orsula y Vega’s gory depictions of the mercury-laden sludge pouring out of people’s mouths and nostrils, of the piles of bodily carnage, and the total industrial destruction read like a modern-day
Latin American soap opera but—potential exaggerations aside\textsuperscript{160}—this catastrophic event killed many, and temporarily destroyed an important part of the mineral processing infrastructure on the mountain. As he tells of this tragedy, he also simultaneously recounts how causality was remembered by residents at the time: this was not a naturally occurring event, it was an act of God in response to a mounting context of greed, avarice, sexual deviation—a proliferation of sin which residents tied directly to the generalized accumulation of riches stemming silver production.

In \textit{Los Ministros del Diablo}, Absi (2005b) interviews a Pailliri reflecting on what she perceived as an explosion of “new mining” in Potosí. Hauntingly given that she was interviewed in the nineties, years before the crumbling of the summit becomes generalized, Doña Francisca anticipates that the mountain will cave in, a sign, according to her, that it is “dying.” She compares its death to the terrible dam breach described by Arzan, interpreting a link between the “corrupt Spaniards” and an overwhelming sense of immoral violence. She says:

\begin{quote}
Everything, the good, the bad [in terms of mineral content], they blow-up everything. Twenty years from now there will be nothing left—every day they are blowing everything up. Every day they are drilling, what mountain would be able to withstand this? There isn’t a mountain that can withstand this. Now we can see that the mountain itself is dying. And one day we can expect that the mountain starts to cave in and everything caves in. Before, when the Spanish were here, they say that the lakes burst and the water came and took away all of the houses and all of the people. During this time, they [the Spanish] were taking advantage of people, there was a lot of corruption. Lots of things happened at this time, minors were violated; a neighbour’s wife could be stolen. All of these things, I think, contributed to making pachamama mad and then punishing them. But what do I know? (Absi 2005b, 220)
\end{quote}

\textsuperscript{160} Although sometimes criticized for being laden with exaggerations and grounded in city lore and myth (Robbins 2011), Arzan’s works are still drawn on for being perhaps the most complete chronicle of the economic, cultural, and social life of the imperial city.
According to Doña Francisca, Pachamama got “mad” and “punished” the people in Potosí for the bad behaviour and she sees parallels with that situation and the current one within which she finds herself and her community. Absi interprets her explanation as reflecting on the increased mechanization and the intensification of production on the mountain as having breached a previous balance which existed between maestros and the mountain. As I mentioned at the beginning of this chapter, like Doña Francisca, I too met many residents of the working-class neighbourhoods of the city who continued to make these logical leaps from the crumbling of the mountain to the overall state of crisis and despair of everyday living in the city. Miners and their families on different occasions noted experiencing a recent shift, not just in the dramatic and accelerated collapse of the mountain, but in the way they were treating one another. The mountain, prominent and in all its glory, always towered over the city as a reminder of both its complicated past and a beacon of its potential future. As its collapse appeared to become inevitable, it marked a significant point for residents whose livelihoods were complexly bound to and wound up in its destruction to reflect on what was happening and how their lives had apparently also changed, so radically, in merely a few years. As we have just seen, residents are facing an overwhelming sense of social collapse based on suicides, mine accidents, and violence. Whether or not these have increased exponentially we cannot know due to a lack of longitudinal data, but people certainly share a sense that things have gotten worse.

On an early morning in the middle of winter, I was sitting chewing coca with Adelaida. The pailliri, who spent more than 65 years working the mountain, was upset. We were
talking about the reported suicide of a young girl who wasn’t yet even a teenager that we had heard on the radio while we were waiting for another comrade to arrive for their monthly meeting. Even though we were talking about a suicide that had nothing to do with the mines, her mind kept wandering to the mountain.

The mountain is injured, it’s collapsing. All the ore is being taken out and if it runs out, what will be left of the city? Nothing. I am saying this because now there is no care with the work, everything is money, money, extract, extract. Even Tio has abandoned us. Today there is no coordination, it’s just fighting. All I see is fighting all the time. Fighting and greed. I don’t want to know anymore about it now, and this is why I don’t go [to the mine to work]. It pains me to see the mountain so ugly—and the stories, and the death, it makes me sick. So much evil. The mountain is injured and if it collapses it collapses because we deserve it—all everything is upside down (aqui estamos al reves).

On several occasions throughout my fieldwork, miners and residents would draw connections between the collapse of the mountain due to the ongoing mining activities and the overwhelming sense of social collapse in the city. Adelaida, now observing the results of Francisca’s prediction twenty years ago, seemed to echo a fate already sealed: everything is “extract, extract…there is no care…even Tio has abandoned us.”

Something was happening, rendering mine work and by extension life as people knew it, unrecognizable. With every newspaper article that stressed the imminent and more likely collapse of the mountain, it felt as though a parallel story about a report about a gruesome suicide, abuse or accident, followed. And, although they appeared disconnected, people kept bringing those stories back to mining on the mountain: “The mountain is injured and if it collapses it collapses because we deserve it—everything is upside down.”
Chapter 7: Mining in the Capitalocene

7.1 Contestations of Value

On September 20, 2017, brothers Ever and Willy Choque Santos were transporting mineral from the entrance of the COMPOTOSÍ Relampago oxides mine to their truck when they were swallowed up by the mountain. According to accounts from the missing miners’ family, the guarda who protected the mine, “heard voices calling for help,” six days after they were said to have been swallowed up. According to Ever’s wife, Benita Acarapi, this corroborated the coca reading they had solicited from a curandero (healer): “The healers who read [the coca] told us that they are still alive, they are suffering, and they have to hurry up [with the rescue]. They are alive, they are alive, and they are shouting ‘Get us out! Help us!’” (Valda Angulo 2017b, 1, my translation). Every day that the rescue attempts continued, the pit appeared to grow larger and larger, further complicating the mission. When the two men were initially lost to the cave-in it was determined to be about 28 by 33 meters wide and 15 meters deep, and members of the mining community thought the brothers would be rescued in a matter of days. As time went on, however, the pit broadened and the mission became more and more difficult and there was less hope of recovery: they couldn’t stop the cave in—the brothers were believed to be somewhere around 25 meters below ground. On October 23, the president of the FEDECOMIN-Potosí, Sandro Lugo, made it known that the federation had “run out of resources” for the rescue project, having now spent over a million bolivianos on the mission and noting that to-date they had removed upwards of 80,000 tonnes (the equivalent of 32, 000 Olympic swimming pools) and saw no real hope for ever
recovering the bodies. On the 27th of October, over a month after it began, it was announced that the rescue mission had been cancelled, due to excessive costs and potential dangers for those involved. The scar left behind by the cave-in would simply become another of the many blemishes that were becoming more frequent on the surface of the mountain, and the renown of the missing miners and their memory would fade just as quickly as it emerged, simply becoming another pair of men to fall victim to the “mountain that eats miners.” During the rescue mission, miners at the neighbouring mines (literally 250 to 300 m from the cave-in) continued to work, since Manquiri continued to send trucks to this region to buy the underground production on the spot.

Then just three years later, in August 2021, the final portion of the surviving summit of the Cerro Rico de Potosí collapsed in a dramatic cloud of mineralized dust before the horrified gaze of the city’s residents. Filmed by several residents who were terrified by what appeared to be billowing white smoke above the city, the mountain’s collapse had residents emotional in their criticism of public authorities for having failed to protect the city’s heritage site from the ongoing mining activities. The continuous and very public crumbling of its peak had been a central topic of the conversations I was having with miners, residents, and public officials. By the time the summit finally crumbled, the COMCIPPO was reporting the existence of 12 cave-ins around the mountain like those at Relampago, four of which had happened in 2021 alone. One of those, the largest and closest to the summit, had been the subject of a failed technical fix—the “fill-in project”—since 2014. That process also fell under public scrutiny when it was revealed
that the contractor behind the fill-in was an association of cooperative miners, and that the fill-in was starting to filter down into the operating mines at Caracoles.

Illustration 30: Snapshot of the "fill-in" zone close to the summit. Photo taken by the author.

Contrary to the dearth of reporting and monitoring of the accidents and deaths which occur in the mines of the Cerro Rico de Potosí as we saw in the previous chapter, public outcry, and rage (especially from the urban middle-class) is frequently reported when it contemplates the structural integrity of the mountain and its impending collapse. As we have previously noted, Supreme Decree 21060 in 1985 set in motion a series of policies and actions that would consolidate a process to destroy the State mining company (and its union), COMIBOL, and privatize its assets, opening them up for foreign investment. The Empresa Minera Unificada, COMIBOL’s subsidiary that operated the Pailaviri mines on the mountain, was not an exception to this process. Leading up to the New Economic
Policy of 1985, multiple COMIBOL reports warned that the deposits were dwindling and becoming “unfeasible” for further economic development. EMCUP’s operations were shut down to minimal maintenance activities and some of its bocaminas and installations were handed over on rent contracts to a handful of previously operational cooperatives on the mountain (several which formed because of the “relocalization” of the unionized workforce). Subsequently, the World Bank was given full authority to design a new industrial-scale project for the exploitation of polymetallics using a combination of open-pit and underground mining methods since technological advances had been made that would allow for the previously uneconomic deposits to be chemically processed (using cyanide lixiviation to recover low-grade silver found in the oxide deposits). Towards accomplishing this end, on November 9, 1987, the government approved Law #957 which declared the prospecting and exploration of polymetallics on and around the Cerro Rico de Potosí a “national priority.”

Curiously, just two days after the law was passed on November 11, 1987, UNESCO added the city of Potosí as a World Heritage Site, including the mines, colonial-era mills, and infrastructure of the Cerro Rico de Potosí. In this way the city and its mines was declared a site of significant material world cultural heritage, while at the same time, the country was preparing plans to ensure that at least part of this site would be sold and continued to be exploited, to the highest bidder. Between 1986 and 1988, the UNDP contracted consultants Bernstein and Thompson to evaluate the reserves and calculate the economic feasibility of the project. In their report, they estimated that the total surface and subterranean resource potential of the Cerro Rico was 486 million tonnes (Mt) of
Silver at 3.08 oz/t (as cited in Whitney and Whitney 1989, 10), containing approximate silver content of nearly 50,000 Mt. Almost overnight, the mines in the Cerro Rico went from being depleted to having the potential to produce the near equivalent silver production during the 450 previous years of silver production. Just months after the UNESCO declaration in April 1988, a consortium of foreign companies including a Bolivian mining company called EXPOMIN expressed their interest in signing a joint-venture agreement with the COMIBOL to exploit the deposit. This initial offer would be followed by a series of technical and economic feasibility studies all aimed at consolidating the privatization of the mountain. But the more the COMIBOL talked about the enormous potential of the Cerro Rico Project, the more positions in Potosí pushed back, citing the need to protect the mountain’s protected status.

As early as 1994, UNESCO noted that they were receiving letters from various organizations and individuals who reported that there was an increase in mining activity on the mountain and that the techniques being deployed could “seriously impact the visual appearance of the mountain.” This coincided with an intense period of public scrutiny against, on the one hand, the proposed sale of COMIBOL’s joint-venture “Cerro Rico Project” (see Illustration 18) and the increasingly visible and equally criticized open-pit mining activities of Compania Minera Concepcion (COMCO), owned by the controversial mining businessman and would-be-exiled-president, Gonzalo Sanchez de Lozada.
Illustration 31: The visual conceptualization of the proposed final pit of the Cerro Rico Project, following the full open-pit production methods to be employed by the JV agreement (COMIBOL 1992).

Even though the government was trying to promote the sale of the Cerro Rico project to foreign investors, the project threatened what was becoming the core of an argument
about heritage preservation. As we can see from Illustration 23, the open-pit mining methods threatened to completely remove the top of the iconic mountain. As the government intensified its activities to privatize the mountain, the UNESCO recognition served as a strategy to struggle to convert the material residues of the colonial production period into the physical grounds upon which to defend the mines and the city from its privatization. Anthropologist Pascale Absi (2005a) documents that during this period, the open-pit mining project proposed by the COMIBOL was rejected time and time again during the public consultation periods as contravening the overall push towards heritage preservation: the first time she argued that discourses that were sociocultural in nature prioritized the economic discourse. As Bolivian sociologist Franz Flores Castro (2011) notes, the attempted sale of the Cerro Rico project revealed how the mountain didn’t simply index a process of preservation of material heritage but formed part of a fraught Potosino identity which necessarily included reflections on centuries of past plunder. Part of what it meant to be Potosino was to mobilize with a coherent political North—Potosinos would prevent the country’s resources from being sold to foreign interests and thus prevent the repeating of history, even if it meant isolating them from the national government’s nationalist project. He says, “[for Potosinos] the Cerro Rico is a representation of greed, whether national or foreign. But Potosinos would be there, dignified and firm, so that this would never happen again. (4)” This very public rejection of the project forced the COMIBOL to explore with foreign consultants’ other possible exploitation methods for the Cerro Rico project. As early as 1992 the full feasibility study for the proposed Project discarded the possibility of reducing the summit to an open pit:

From the observations made herein one can conclude that open-pit mining methods will likely result in an operation that is more technically and
economically feasible, but it is probable that the civil resistance will be insurmountable. As an alternative more research needs to explore the possibility of a partial open-pit operation of the parts of the mineralized zone which are behind the Cerro Rico and far from the gaze of the city (COMIBOL 1992, Annex 1).

Not very far into the process it appeared that the government would at least have to modify its initial plans if they wanted it to be accepted by the public.

Alongside the very public criticism from the city’s urban residents of the proposed open-pit Cerro Rico project and the threat to the structural integrity of the mountain were the cooperative miners themselves, who, currently, albeit in smaller numbers, were working on the mountain.

In the 1989 UNDP Preliminary Economic Evaluation of the Cerro Rico project, the consultant notes that the “biggest problem” with the project will be the consolidation of the mineral ownership on the mountain, which will require “significant time and resources” (Whitney and Whitney 1989, 7). The property regime on the mountain, according to another economic assessment from that same year, was unique and complicated, given that varying title regimes were superimposed on top one another, some of which stretched back to the colonial period (Bernstein 1989, 18). Some of those rights were directly held by cooperatives, others were held directly by the private State-owned company COMCO, and the majority were owned by the State but worked by cooperatives on a lease system (Ibid). Many of those leases were active, and by 1990, 22 cooperatives were working out of mines on the mountain, employing approximately
6,130 miners (EMSP-CMU 1991, 80), many of whom were former employees of the previous COMIBOL operations.

Despite what seemed to be a controversial tug-of-war, COMIBOL took advantage of the increased concern of Potosínos to preserve the world heritage site to confirm that the large-scale industrial COMIBOL project was “much less harmful for the mountain than the precarious” and irrational methods of the cooperative miners (COMIBOL 1992, 13). Images of cooperative miner work areas, combined with the peonage system of exploitation, became a smoking gun for the state mining company and its overall goals of privatization. This discourse, picked up again later by Coeur D’Alene Mines and becoming generalized among the urban population, would continue to persist to the present day, ultimately positioning the cooperative sector and their “primitive and irrational” methods as the culprits responsible for the collapsing summit and thereby legitimizing the large-scale mining actors’ (COMCO and later Manquiri) operations.

7.2 San Bartolomé: The Compromise

As COMIBOL took to re-evaluating the project in a modified form, Bolivian company EXPOMIN continued to explore the possibilities of developing the deposit to associate with a foreign company. EXPOMIN was owned by two Bolivians with important connections to the mining industry. Jaime Villalobos was the Minister of Mines responsible for implementing the World Bank privatization plan and would continue to hold other cabinet positions well into the late nineties. Ruben Terrazas was a former upper-level engineer of the COMIBOL (Francescone 2016). Both had been responsible for presenting the initial request to develop a joint venture of the Cerro Rico project in
1988, with EXPOMIN being the proposed partner for foreign capital investment and, although the initial partnership never materialized for the reasons previously cited, their work shifted to addressing some of those barriers to foreign partnership, namely the cooperative sector (Ibid). Since it became clear to COMIBOL and EXPOMIN that the full-scale open-pit Cerro Rico project would not gain consensus among the population, they needed a “new” project that could be re-packaged for the urban sector which all the while addressed the problem of the small-scale miners on the mountain.

In 1995, American mining company ASARCO began developing an exploration program of the pallaco deposits and during this time they hired EXPOMIN to manage the project in Potosí to support their newly formed Bolivian subsidiary, Empresa Minera Manquiri (Coeur D’Alene 2012, 41). Terrazas recounts that to gain access to the deposits that were controlled by seven cooperatives on the mountain, EXPOMIN commenced a challenging lobbying campaign with the sector in 1992 in order to convince the cooperatives they would benefit economically. Madrid (2003) notes that the company, through its consultants, used an idea of “added-benefits” to the cooperatives—they would make money simply by letting the company work their desmontes, desmontes that they themselves were not able to fully benefit from due to lack of technology (111). Even so, the process of arriving at a formal agreement with the cooperative leadership at the time was not easy. It took four years to get the first contract signed, which granted the company access to cooperative desmontes and it took seven more years to consolidate the signing of the remaining six contracts for the company to remove and process the desmontes (Francescone 2016). These contracts would ultimately end up displacing
hundreds of pailliri women who had been working sorting through the desmontes for several years (Absi 2005a). The contracts that the company signed with the cooperatives, according to press reporting, were lease contracts not operational contracts—that is—that the company would be able to access those waste piles at mines owned/leased by cooperatives but that the company itself would do the work of collecting it. Similarly, none of the contracts were reported to be about accessing underground workings. This is corroborated by company filings about the contract in their annual reporting.

In 1999, ASARCO announced that American mining company Coeur D’Alene Mines would purchase the company and that its Bolivian subsidiary, the Empresa Minera Manquiri, would transfer to Coeur’s domain (ASARCO 1999). In 2003 the Joint-Venture contract for the newly renamed “San Bartolomé project” was signed between the company, seven cooperatives, and the COMIBOL (Madrid y Balderrama 2003, 56) for the extraction of “superficial” deposits (pallacos, sucos and desmontes—see Chapter 2).

According to the company at the time, the project would “absolutely not impact the morphological structure of the Cerro Rico de Potosí, which is constituted by hard rock” (Ibid. 57). The Environmental Impact Assessment for the project noted “no exploitation activities will happen in the high parts of the Cerro Rico, and only a thin layer of non-consolidated materials and oxidized desmontes will be removed from the higher flanks of the mountain. These operations will not move the bedrock…the mining operations as well as the rehabilitation plan proposed will not produce any change in the profile of the mountain, nor will they affect the stability of the summit or the structural profile of the Cerro Rico de Potosí” (Empresa Minera Manquiri 2003, V-3). In fact, that same EIA
established that the mining project would not only not negatively affect the structure of the mountain, but it would actually improve the situation of strong contamination in its proposal to move the desmontes to the plant (Ibid, VI-4). On several occasions the company repeated this like a slogan in public appearances when emphasizing their role in helping to make Potosí a less-contaminated place. In essence, the portrayal of the project, although still deploying the same open-pit mining methods previously proposed, shifted to highlight the “superficial” nature of the deposits and the supposedly benign impacts those activities would have on the overall structural integrity of the mountain. At this time, it became clear that the company’s analysis, according to which only underground activities were going to impact the structural integrity of the mountain, enabled them to sell the “new” project as superficial or benign. In this way, the company was able to consolidate its presence on the mountain, seemingly garnering support from both the cooperatives and the urban classes behind the guise of harmless economic development.

In 2004, in response to ongoing concerns about the stability of the mountain in the oxides zone (4,400 m to the summit), the government approved Supreme Decree 27787, which approved regulations to the 1997 Mining Code for the ongoing labours on the Cerro Rico de Potosí with the objective of “updating the code to reflect the current situation of work on the mountain.” In the preamble, the State-mining company states “COMIBOL has been developing mechanized mining of the oxides of the Cerro Rico in conditions that do not alter the stability and geomorphic stability of the mountain and preserve its historic heritage.” In the annex, which outlines the new standards, the chapters establish a no-mining zone, as well as a “quota zone.” The no-mining zone is set up between 4,700 m
and the summit, and the “quota” zone is established to be between 4,400 m and 4,700 m, where only activities that form part of the “Oxides Exploitation Project” (what becomes San Bartolomé) or those cooperative works previously authorized by the COMIBOL are permitted. In essence the decree, rather than preserving the mountain as it purports, ends up laying the groundwork for the San Bartolomé project to commence operations (Francescone 2014).

In 2008, Manquiri commenced its full-scale open-pit operations. On May 18, 2009, the Potosí Departmental Government presented a complaint to the Ministry of Mines against the Manquiri for the destruction of the Cerro Rico, and later in June, COMCIPO demanded that the government suspend their operations above the 4,400 m zone and demanded the derogation of Supreme Decree 22787 (Francescone 2014). This pressure led to COMIBOL passing a resolution to suspend all activities above the 4,400 m area. The company reported having “temporarily adjusted its mine plan to confine mining activities to the ore deposits below 4,400 meters above sea level and timely notified COMIBOL of the need to lift the restriction.” (Coeur D’Alene 2013, 20) Their lobbying efforts were effective, since just five months after COMIBOL issued the resolution, the company was granted permission to begin “mining operations above the 4,400-meter level in high grade material located in the Huacajchi deposit, which was confirmed to be excluded from the October 2009 resolution, under an agreement with the Cooperative Reserva Fiscal.” Then again in December 2011, “an additional area in the deposit, known as Huacajchi Sur, was further confirmed to be open for mining as well (Ibid).”
By 2011, the collapse of the summit was so visible to the population below that UNESCO sent an emergency technical mission to Potosí to further document the deterioration of the site. Following the observations recorded during this visit, the body declared the Potosí site as “World Heritage in danger” due to “degradation of the site by mining operations, instability and the risk of landslides in Cerro Rico, deficiencies in its conservation, ineffective protection legislation” (UNESCO 2014). That same year the National Geological Service (SERGEOTECMIN) released the stability report that had been commissioned by the COMIBOL about the ever-increasing instability of the Cerro Rico and identified areas of “high risk of collapse,” the majority between 4,000 and 5,000 m above sea level (2011). As you can see from Figure 5, the bright-red thatched areas are the high-risk areas identified by SERGEOTECMIN, which are inside of the blue, orange, and yellow lined pallaco areas as defined by Manquiri. A significant portion of the pallaco deposits which formed part of San Bartolomé were in these “high risk areas” (Francescone 2014). Despite that fact neither SERGEOTECMIN nor UNESCO even contemplate the role that Manquiri might be playing in this collapse.

According to Coeur D’Alene’s annual reports, in its nearly ten years of operations, half of which were spent while Potosí was declared “in danger” by UNESCO, Manquiri’s overall production never dipped below its maximum plant capacity, even though as we just saw, some of its work areas contemplated in the original mine plan had been made unavailable to them because of the limits imposed on production above the 4,440 m restricted zone. Even though the original San Bartolomé project claimed to only be extracting superficial deposits, and therefore not affecting the structural integrity of the
mountain, it was later revealed in official company documents in 2020 that Manquiri had in fact been buying underground production for several years from oxide producers in these same high-risk areas. In this way not only were they taking material from the surface, they were stimulating a market for cooperative oxide production.
Figure 5: Manquiri’s work areas intersecting high-risk zones identified by SERGEOTECMIN as seen from aerial viewpoint. Source: Elaborated by the author by superimposing data from Coeur Mining 2014 and SERGEOTECMIN using ArcGIS software.

In 2018, a few years before the original projected end-of-mine schedule, Coeur Mining sold its rights to Manquiri to a Swedish-registered shell company backed by Mexican
investors. In 2021, that company changed its name to Andean Precious Metals, a small Canadian junior mining company trading on the Toronto Stock Exchange. Although the company has ebbed and flowed in and out of public criticism over the past few years, their operations were never truly affected from the perspective of overall output or profits.

Unlike Manquiri, the cooperative sector, identified by public officials, UNESCO, and the company as those to blame for the collapse, underwent disciplinary actions in an attempt at forced displacement. Those working above the restricted zone (4,400 m to the summit) were handed a quota-system which limited their activities to one load a week per working group (called a torna guia). COMIBOL also banned the use of air-compressors and generators in this area.

The cooperative mining sector has been scapegoated by the State mining company, Manquiri, and UNESCO as the true culprit for the mountain’s collapse—and yet, as I was repeatedly reminded by miners who had worked the mines for years, even the concept of collapse was new. Again, Rambo was insistent, after having watched Manquiri remove an entire mini mountain out in front of his house, that their operations had to have something to do with the onslaught of cave-ins:

We’ve been working underground at the mines in the mountain for almost 500 years and yet we only ever started talking about collapse since the late eighties. In my opinion, and this is just from what I see, I’m not an engineer—in my opinion, we only started seeing these cave-ins once Manquiri started. Now collapses happen all the time. They say they’re not to blame, that they’re not affecting the mountain with their operations, but how can that be possible if they’re able to move a mountain like the one out front here in a matter of days? I just think the government has been blinded by silver and suckered into believing it’s true.
7.3 Bringing the Anthropocene to Potosí

Illustration 32: Bolivian cartoonist "Al-Azar" on the Cerro Rico de Potosí. Source: El Potosí

The concept of the Anthropocene has been used by geologists to, simply put, “crystallize the growing realisation that human activities…had fundamentally changed the Earth System” (Zalasiewicz, Waters and Williams 2019, 2). Human activities have affected a slew of planetary processes related to the land, atmosphere, oceans, and climate, among others. Crutzen, often credited for first coining the term, argued that the process began with the onset of the fossil-fuel regime in the late eighteenth century as the Industrial Revolution rolled out across England. Since mining has been the source of raw materials for currency as well as for many industries connected to that fossil-fuel led expansion, its impact has been substantial and has repercussions that extend far beyond the site of extraction.

According to geologists linking the Anthropocene to the mining industry, mining activities have played a role in altering the earth’s systems in two ways. The first is with respect to the creation of new mineral specimens and deposits. Geologists refer to what are called “human-mediated minerals”—minerals and metals which have arisen as by-products of human activities, commonly associated with mining as one of the
stratigraphic signatures of the Anthropocene. Often, they emerge when deposits are exposed to external elements (like humidity and heat) due to previous or ongoing mining activity. The weathering of mineral slags or precipitation on tunnel walls (Hazen and Zalasiewicz 2019, 42), for example, have led to the discovery of new deposit types and mineral formations. In 2017, earth scientist Robert Hazen catalogued the scale of the impact for the first time, identifying 208 mineral species that originated either principally or exclusively due to human activities. At the time, this represented nearly 4% of the roughly 5,200 minerals officially recognized by the International Mineralogical Association (IMA). He also estimated that new specimens are constantly forming at a rate of approximately 50 per year (Hazen et. al 2012). In some cases, these deposits have become sources of further extraction.

The second is with respect to the impact mining has on the land itself—and more specifically with respect to the way mining happens. Up until the late twentieth century, metalliferous mining was nearly entirely performed using subterranean mining methods and techniques, with the scale and depth of the operations often bumping up against both natural (flooding) and economic limits (technological, transportation). But (in general terms), as ore grades began to deplete first in Europe and then in North America, mining companies rushed to South America, Southeast and Asia Pacific, and Africa to develop new mines (Lynch 2009) or to intensify mineral production at mines already in operation. Developments in transportation and processing enabled this shift, since these deposits were often far away from the industrial centres requiring them, and their composition was not as high-grade, thus requiring innovation in processing and refining to separate the
desired metals from their ore. Since underground mining was only economically feasible when the metal content was high, and the deposit structure was a vein system—the general tendency was to shift to open-cast/open-pit mining, which drives an exponentially increased output of ore moved from the land, and of waste rock produced with the separation from the metal. Open-pit mining also departs from underground mining in that it does not use waste rock as backfill, which, as a secondary consequence also serves to reinforce the overall structure of the mine, instead moving substantial quantities of waste rock and mineral to locations often far away from the extraction site (Hazen and Zalasiewicz 2019, 72).

The Cerro Rico is likely as clear cut of an example as one can get of the time/space altering impact that anthropogenic activities can have on the geophysical environment. The extensive network of colonial workings perforated the mountain with literally thousands of adits. This, in line with the thinking of the geological literature on the Anthropocene and according to a geologist I spoke with in Potosí, served to speed up a process of oxidation, thereby altering the course of geological time and deepening the hue of the mountain’s surface into blood red. The oxides deposits that Manquiri is refining now are, at least in part, due to processes that were accelerated with colonial extraction. The pallacos deposits which geologist Paul Bartos coined as a “new deposit type” also raise questions about the impacts of anthropogenic activities on the deposits themselves. Although Bartos acknowledges that these deposits are the product of erosion, and that they have been worked over by small-scale miners, he does not attribute the “newness” of the deposit-type to anthropogenic activities:
There is another silver resource associated with Cerro Rico, composed of the eroded remains from the upper silicified zone of the cerro summit, which have been collected into deposits of coarse gravels localized on the flanks of the mountain. These deposits, known locally as pallacos, do not form part of the sacred profile of Cerro Rico; open-pit mining is not considered a problem. These deposits have been worked on a small scale during the rainy season by mineros who washed the gravel to recover cassiterite, using crude riffles, screens, and jigs. Silver was not recovered from the pallacos, owing to insufficient technology (2000, 645).

Illustration 33: Red hue of oxides on the mountain, darkening as you approach the summit. From here you can see the surface is unstable since the rock fragments are loose. Taken from the backside of the fill-in zone. Photo taken by the author.

Although he recognizes but does not link the anthropogenic activities to the deposit development, he does take the time to claim that open-pit activities will not affect the structure of the mountain. Finally, perhaps the clearest example of deposit type formation and economic viability, are the sucos and desmontes. Without a doubt, these too are
referred to as distinct deposits, and these too are entirely the product of past human activities, representing in a literal sense what Marx refers to as “dead labour.” Desmontes are the waste piles left behind by mitayos, kajcchas, wage-labourers, and unionized miners who all worked the mines for silver and again for tin, up until the collapse of the industry in 1985. These superficial deposits are substantial and have come to represent a stockpile of potentiality over the centuries of exploitation on the mountain. During lulls in underground development throughout the colonial period, stock and waste piles were scavenged and re-scavenged for their marginal mineral content (Wendt 1890). In 1937, the COMIBOL catalogued over 1,500 adits and over 400 desmontes—those desmontes would be worked over for their tin content by pailliris up until only a decade or two ago. Their industrial exploitation, though, has only become possible within the past two decades thanks to (in part) the development of cyanide processing, buoyant mineral prices, and a globalized mineral trading system.

Total silver production at the Cerro Rico before today’s contemporary industrial operations was estimated between one and two billion ounces (Evans 1940)—the infamous silver road across the Atlantic Ocean from Potosí to Sevilla that Eduardo Galeano speaks of in Open Veins. That production included the forced and then “free” labour of likely hundreds of thousands of miners, mining thousands of adits, and dumping millions of tonnes of waste and mercury into the surrounding environment.

It seems then that the question is one of degree and not of whether that labour, or “anthropogenic activity” impacted the development of the deposits known and exploited
today. In fact, it is likely that the very shape of the Cerro Rico de Potosí as we know it today is only vaguely akin to its form when the Spanish commenced production nearly five centuries ago. Early visual depictions of the mountain have it much narrower and higher (it used to be referred to as a sugar loaf by colonial chroniclers), whereas today’s images have it sitting on wide flanks, potentially challenging our very notions of what is “natural” about this once sacred mountain. As economic historian Peter Bakewell notes, “after 450 years of mining the Cerro Rico has become a massive slag heap on its surface” (2009, 8). As we noted in Chapter 1, Manquiri reports that some of the desmontes have a depth of 10 to 15 meters, and Bartos (2000) catalogued pallacos with depths of up to 50 m. Although these deposits may appear to the naked eye as merely dirt on a mountain, that dirt is the product of past labour whose work was so significant it altered geological time. The “iconic shape,” that residents in Potosí have struggled for decades to protect, likely pales in comparison to the revered Sumac Orko of pre-colonial times.

With regards to the second way that industrial mining has been deemed anthropocenic—the way mining happens—the Cerro Rico is also an important case (if not though the most emblematic in the country), even if today it is a modest-sized silver operation when compared to the largest operating silver mines in the world (World Silver Institute, 2021). Unlike the longue durée of the colonial residues which have clung to these deposits today, the substantial change in how mining happens is very clearly timestamped to the last three decades. As we just saw, declining ore quality has been one of the principal drivers of the shift to open-pit/open-cast mining. Thanks to innovations in technology and
extremely high mineral prices (Diaz 2017), Manquiri can process ores that, just a few decades ago, were considered uneconomic.

![Illustration 34: Manquiri’s open-pit operations claw away at the surface on top of active cooperative mine, Venus. Photo taken by the author.](image)

Although the data is sparse, there is some information about the quality of the ore in early Cerro Rico production history. Economic geologists have noted that during the first 27 years of exploitation, the silver content was so high in the ore that very little refining was needed. Estimates note that the ore contained around 7,000 oz of silver per tonne, meaning that every tonne of ore contained 20% silver. Although economic historians are quick to note that the exceptional ore quality levelled off quite quickly, data points from the seventeenth and the nineteenth century show ore quality ebbed and flowed between 60 and 700 oz/tonnes (Wendt 1890). During the nine years that Manquiri operated San Bartolomé, the average grade for silver was 4.7oz/tonnes (or 0.014% of the total ore
mass), and that grade continues to decline today. When miners note that “they can do nothing with the oxides” because the grades are too poor to process, this is what they mean—finding the oxides and pallacos that the company is scouring for silver is like looking for a needle in a haystack—the silver is barely even there. These deposits require a new form of mining, open-pit mining, which completely alters the landscape—literally removing a mountain top (even though it’s understood as collapsing) and displacing the contents.

Illustration 35: A Manquiri-owned front loader deploying open-pit mining methods for pallacos in Sucumayu area of the mountain. Photo taken by the author.

As I mentioned earlier in this chapter, Manquiri wasn’t the first company to commence superficial extraction of these low-grade ore types on the Cerro Rico, and open-pit mining has been a reality on the mountain since just after the COMIBOL was ordered to shutter production. COMCO commenced production in 1988 and their primarily illicit
production was followed by a COMIBOL pilot project, and then Manquiri commenced full-scale production in 2008. During the 32 years of heap-leach processing of these low-grade ores, the companies processed upwards of 24 million tonnes of ore from superficial (and likely some underground) deposits on the mountain, and from that they extracted approximately 3,200 tonnes of silver. As an important point of comparison, in the first 27 years of colonial production on the mountain, only 7,000 tonnes of ore were processed to yield 1,500 tonnes of silver: twice the amount of silver for 3,500 times the amount of waste, and with only a handful of workers. It is important to pause here to also make an important distinction about the kind of waste we are talking about given its impact on the surrounding landscape. During the first 27 years of recorded colonial extraction at the Cerro Rico, silver, due to its high-grade content, was refined using organic material combustion and wind power in the Indigenous Huayrachina furnaces. No inputs besides animal dung or shrubs were added due to the naturally occurring reactants already present in the ore (Bakewell 2009, Robbins 2011). The same is not true for the chemical processing required to refine this very poor-grade silver today. As I noted in Chapter 1, refining happens when the ore is ground and then dissolved in a cyanide solution. The highly toxic chemical sludge that is produced in this process as a by-product to refined silver is then sent to a liquid tailings storage facility where it will sit in perpetuity. In this specific case, Manquiri has both a liquified tailings pond, which holds 15 million tonnes of material, and a dry stack tailings facility, which holds another 28 million tonnes of material: that’s almost 45 million tonnes of toxic waste, which simply adds to the mounds of mine discard that have plagued the city at all stages of its mining history. As historian Nicholas Robbins (2011) notes, what is often missing from the explorations of Potosí’s
grandeur for world economic history are the ecological impacts which were, and continue
to be, catastrophic. Situated in the high Andean plateau, Potosí sits at the headwaters of
an important watershed, the Pilcomayo Alto. There are numerous reports of downstream
farmlands rendered unusable because of contamination that originated in the city and
contaminants such as arsenic, antimony, cadmium, and copper have been found as far as
200 km downstream the Pilcomayo River (Hudson-Edwards et al. 2001, Garcia-Guinea
and Harffy 1998, Rojas and Vandecasteele 2007, Strosnider et al. 2007). More than the
silver that Potosí produced for centuries, it will likely be known in the centuries to come
by this brilliant emerald toxic lake in the middle of a high plateau desert that is slowly
leaking poison into the surrounding lakes and streams forever, altering the already-
affected landscape as we know it, likely an emblematic example of what Nixon (2011)
describes as the temporally slow nature of ecological disaster.

Due to my focus on silver production for this thesis, I am aware that I am leaving out
over half a century of industrial tin production on the mountain. Just for the sake of
comparison and scale, it is important to note that at its heyday of tin production,
Unificada’s Velarde mill—which was considered to be a state-of-the-art production
facility and an important element of Bolivia’s industrial revolution in mining—ended up
with a total processing capacity of between 300 and 400 tonnes/day. This makes
Manquirí’s current silver production capacity 12.5 times greater. Although the processing
facilities have long ceased to operate, the working-class neighbourhoods in the city
continue to be plagued with the malignant tumours that are the dry-stacked tailings
deposits (see illustration 38) that have been left to oxidize and leach in the open-air
(Lundgren 1996, Tapia Montesinos 2010). These tailings left abandoned in, and exposed to, the erratic weather patterns of the highland Andean plateau represent over 4.5 million tonnes of material.

Illustration 36: The Velarde tailings, upstream from Catamarca and surrounded by residential neighbourhoods. Photo taken by the author.

Although illustrative, the above example does not contemplate underground cooperative production, which has continued alongside the Manquiri’s open-pit operations, and at what miners describe as a recently intensified pace. In 2021, a source from the Ministry of Mines was quoted saying that the approximately 20,000 cooperative miners extract 2,000 tonnes of ore from the mountain each day, totalling 750,000 tonnes per year. Due to a lack of transparency on sourcing, it is unclear how much of this mineral makes its way to Manquiri’s plant and how much of it is processed by other mills in the city. But many of the miners I spoke with complained of unfair spot-buying practices happening at
their oxides mines in 2017 and 2018. In 2020, Manquiri was reported to have purchased a third of their mill feed (620,000 tons) from cooperatives. That means we can add at least 130,000 tonnes per year to the 1.5 million tonnes that Manquiri extracts as coming off of and out of the mountain. That’s over 1.75 million tonnes per year of ore, the bulk of which ends up being converted into toxic waste left to accumulate in and around the city. This is certainly the case, since whatever is not being processed by Manquiri at the refinery is being processed at local mills that are located within residential neighbourhoods in the city and that use toxic chemical inputs to encourage separation reactions. As I noted in Chapter 1, these mills only slightly purify the grades of the polymetallic ore, breaking it down into what are referred to as concentrates using a process called chemical flotation. At these mills, tailings management is not controlled. On multiple occasions I spoke with residents in these neighborhoods who complained that the tailings holding tanks would overflow and run into their patios and living rooms when it rained. Since these mills do not produce refined metal, they are subsequently shipped to foreign markets primarily in Asia (see Francescone 2018), where more processing will occur, and more waste will be accumulated.

Under both scenarios, open-pit and underground mining, all of the ore is considered valuable, so back-filling does not occur. Formerly, when miners would be mining for vein structures, they would identify the mineralized ore and the waste on site, and they could use some of that waste to refill the mine in old work areas to prevent collapse, a practice referred to as “backfilling.” But, in this production system where the mineral content is discernible at the mine site and when all is considered to have value, all is
removed. The structural integrity of the surface becomes weakened and thinned, the mines underground become more vulnerable. Whether or not he meant it that way, it appears that Al-Azar’s cartoon shown above is spot-on—especially if we interpret that tiny ball as the quantity of silver produced from so much production. As Martín Arboleda (2020) notes: the profitability brought about by contemporary forms of mining likely “pales in comparison to its material footprint, as an average large-scale extraction site produces up to a thousand times more solid waste than those working with older technologies.”(30) The only modification we would have to make is that it is not the tiny silver ball that stays in Potosí to be shipped abroad to fill the vaults of foreign banks. What stays is in fact the hollowed out and lopped off mountain, and the millions of tonnes of toxic waste.

It is within this context, and at this scale, that we can finally begin to understand how the collapse of a nearly 500-year-old mining mountain might be possible today, after so many years of labour. At a point in the mountain’s history when exhaustion seemed probable, logics of capitalist mineral extraction prevailed by further accelerating the rate of ore extraction and processing. This was accomplished through the wholesale excavation of the entire remaining deposit through mass-explosives, bulk haulage, and open-air cyanide ore leaching.

7.4 The Ore that is Stained with our Ancestors’ Blood

Although miners are clear about an apparent acceleration of changes occurring both at the level of the mine site and more broadly, the above discussion has allowed us to see the
way that both colonial and post-colonial mining activities have contributed in different but significant ways to the overall ecological landscape in Potosí.

On the one hand we can see that the very existence of the colonial mine workings provided the grounds upon which today’s operations have been made possible—the forced and then “free” labour of hundreds of thousands of miners forever altered the economic and ecological landscape upon whence “new deposits” have been made economically available to transnational mining companies. The colonial workings on the Cerro Rico de Potosí were not just significant in that they produced enough silver to pave the way to Spain, and at the expense of altering geological time. At the same time, the intensification of the mining process brought forth using open-pit mining techniques as well as the availability of a smelter with the technological capacity to refine large quantities of low-grade ore has resulted in an exponential increase in the quantity of ore being processed—levels which outmatch the highest points during colonial production.

On October 9, 2021, following the images and videos that circulated widely among residents of the summit’s total collapse, elders of the Qaraqara nation held a redress ceremony and k’oa offering. They gathered on a safe plateau on the mountain where, before a small group of journalists from the city below, they solemnly asked for forgiveness from their “sacred mountain” Sumaj Orcko for the very visceral irreparable and ongoing damage. Before it became a site for colonial mineral extraction, the Cerro
Potosí\textsuperscript{161} or Sumaj Orcko has been declared by the Incas to have been claimed by, and reserved for, the sun. It was considered to be an important wak’a and one of the original sources of the “tears of the sun” by Huayna Capac (Bouysse-Cassagne 2008, 320-321). Since gold and silver were key to political and cosmological power at the time of the Spanish conquest, according to Cruz and Absí (2007, 2008) the Spaniards had to, in collaboration with Indigenous yanacona Diego Gualpa, dismantle the mountain’s powers prior to commencing production, tellingly renaming it Cerro Rico—Rich Mountain. For the Qaraqara communities that lived in the territory that is today Potosí, Sumaj Orcko quickly became the feared destination of thousands of mitayo workers who were sent in large groups to the mountain as part of their Nation’s mandatory tribute to the Spanish crown. Many would never return to their lands (see Platt 1983). Now, after almost 500 years of uninterrupted mining, they stood solemnly in a circle around a large burning charcoal fire, the elders taking turns making statements to the group and then stepping up to the k’oa to sprinkle and then sip cane alcohol from small plastic bottles. One elder stated, as he looked into one of the cellphones of a journalist live-streaming the event: “The Qaraqara nation and its great Ayllus are here to ask for forgiveness to our Sumaj Orko for so much suffering. It is our obligation because our blood is here, and our brothers are resting in this mountain. It is because of [these] brothers that [the] Spanish became rich and that silver continues in the mountain today. We have to honour their

\textsuperscript{161} Cerro translates to mountain, and Potosí, in Quechua, roughly translates to a sound made paralleling loud thunder from the belly of the earth. It is believed that the mountain was called that due to the warnings it enacted upon Indigenous peasants who attempted to extract silver for the Incan empire prior to Spanish Conquest. The ground rumbled around the mountain, reminding people of its power and thereby preserving its silver for the sun. A similar scenario is described for another mountain nearby in Tarapaca Bouysse-Cassagne, 2008).
Another Elder who, identified as Tata Félix, fighting back tears, declared, “Today our waka Potosí is dying…we ask your forgiveness.” For elders of the Qaraqara nation, the blood, bones, and labour that their predecessors paid in tribute to the crown was returned in silver—silver they never saw but silver that made, and continued to make, powerful people rich. The blood-red hue of the oxides are not, as geologists say, simply the product of a prehistoric volcanic event, but they are both literally and figuratively stained with the blood of labour and sacrifice. And the sacred mountain that, through repeated sacrifice, provided those riches, was dying as it collapsed before everyone’s eyes.

Illustration 37: Qaraqara Redress Ceremony for the waka Sumaj Orcko, October 2021 (screenshot of video captured by the author from original recording by El Potosí).

162 The ceremony was performed in Quechua. Wilson Montes generously provided a transcript of the Elder’s speeches, which were broadcast on YouTube.
163 The presence of the Qaraqara nation that day was significant, since, for the first time since I had been interested in the city and its mines, the mountain was being reclaimed as a point of contested history by the Nation itself—not as merely a symbol of world heritage, but as a site of colonial injustice.
If we remember from the previous chapter, Doña Francisca, a pailliri interviewed by Absi (2005b), noted that the Cerro Rico was facing impending collapse since it could not possibly withstand the intensified nature of mine work on the mountain. It would collapse out of spite, she noted, attributing an agentive force to the mountain which, in an act of vengeance, would punish the city. A pailliri whom I interviewed, Adelaida, reflecting on the overall state of increased violence and fractured relationships in the city, stated that the “world is upside down.” The mountain is collapsing because Potosinos “deserve it.”

Just like the pailliris, the elders of the Qaraqara nation here lament a failure to fulfill a collective duty to the mountain, to replenish (some) of its vitality from what is lost with mineral extraction (see Gose 1986). The offering they provided that day in October appears to have been an attempt to re-engage a practice that, as we saw in Chapter 4, seems to have disappeared from the practices of the miners on the mountain.

In his 1986-piece, *Sacrifice and the Commodity Form in the Andes*, anthropologist Peter Gose notes that “mining is the culminating violation of the most central manifestation of the apu: the mountain itself” (303) in that it destroys the internal and external generative and regenerative forces of mountains by extracting metals from their depths—metals that are essential to the reproduction of life. Depictions of the Utupara apu in Peru, which had been mined for centuries, show it in its anthropomorphized form as “doubled over and limping on one leg that has been crippled by mining,” (Ibid) suggesting a relationship between the activity of extraction and the violent injury it produces towards the mountain and its ability to act on its world. Ritual offerings within the context of ongoing mining operations are limited in that they can only partially mend the damage done, in the cases
he describes, by underground mining. Guillermo Salas-Carreño (2016), referring to fieldwork he conducted in Cuzco and Ancash, Peru, tackles the question as to why it is that very few miners are invoking mountain spirits around the open-pit mines in the region. He says:

open-pit mining technology makes it all too clear that some earth-beings are being destroyed. In a clear contrast with underground operations, open-pit mining literally removes entire mountains, destroying them. Open-pit mining consists of processing the corpse of earth-beings, extracting the metal, and leaving the rest as poisonous rubble accumulating in tailing dams or in new mountains that go through heap leaching (9).

Despite this fact, he argues that “not all mountains should be assumed to be against mining,” in that they depend on a “particular social relationships present at the time.”164 If underground mining according to Gose (1986) results in at least some measure of irreparable damage to the Apu, we can only assume that open-pit mining would, as the Qaraqara Nation suggests above, play some role in “killing it”—or at least, rendering nearly impossible the myriad of socio-political relationships and obligations necessary for engaging their saqra. Mountain-top removal doesn’t just remove ore from the mountain, it forever alters the mountain’s ability to be agentive, which is so important not only for the immediate survival and livelihoods of those directly linked to the mountain’s economic production, but also the broader socio-political and socio natural processes within which mountains form part in the Andean region. For Gose (2018), mountains are “at once remote from and intensely involved in human affairs, they straddle and partially

164 I personally find that an undertone of his work suggests that there is room for companies to navigate the supposed existential threat that open-pit mining poses to apus. It shouldn’t come as a surprise that he has held several positions within some of the largest mining corporations in Peru working as a community relations consultant.
coordinate distinctions between the domestic and the wild, the indigenous and the non-indigenous, the animate and the inanimate, etc. Many socio-natural processes operate through them (489).” But what this dissertation shows, with open-pit mining and underground mining working alongside one another, is that it is not the kind of mining per se, but rather the way that production is organized and the social relations that make that possible—that is, the capitalist form of social relations—which takes precedence over all other aspects of life. As such we can simultaneously revisit our engagement with the Anthropocene as a concept. Although extremely critical for “sticking with the trouble” (Haraway 2016) of mining’s very material impact on the landscape, it is not because of the “Anthropo”—because man as a species—mines the land (Ibid.). The changes miners experience is as much qualitative as they are one of scale and quantity. They are a product of a very clear set of social relations which prioritize, above all else, the realization of surplus value through exchange value as the mediating force between people and their environments. This moment needs to be characterized then, not as the Anthropocene, but the Capitalocene (Moore et. al. 2016). As Absi and Salazar-Soler (1998) so importantly hypothesize, it was the shift in social relationships at the level of the mine working group as a result of a new form of organizing production that had the possibility of altering even the ability of the saqras to be engaged. We can see that most clearly at the level of the underground mines in this case, since miners themselves are identifying these changes.

To recap what I analyzed in Chapters 2, 3 and 4, at the underground mines on the mountain this means that most of the workforce on the mountain—those who are not
considered “miners”—are day labourers who are paid a daily wage regardless of the productive output of the mine. They are also quite mobile, moving about from mine to mine chasing better conditions. The owners of the mines (patrons) do not toil away with their neighbours underground. The labour process is compartmentalized and hyper-specialized. Veins are few and far between and so miners are extracting bulk tonnage instead of vein-seeking. There is a growing gap between larger mines which have more access to machinery, extract higher volumes of ore, and then need and can hire more day labourers and those who work alone or in small groups by hand. The spaces for collective leisure and downtime have been reduced or eliminated as disciplined time arising through capitalist production schedules sets in and real subsumption creeps up on miners. Ritual offerings to the Tío are few and far between and those that persist have a distorted and even violent significance. Ultimately, all these factors contribute to a weakening of a sense of solidarity between miners which emerged based on a shared sense of mutual toil, hard work, and suffering but also joy and companionship.

As production shifted three decades ago to ring in a new era of mountain-top removal, where large mines run on industrial time schedules as they seek to produce as much mineral as they can, the Cerro Rico de Potosí is facing imminent collapse. Perhaps as mirror images to the same coin, miners noted a simultaneous decline in their ore bodies and increased economic hardships while also lamenting changes in their working and sociopolitical lives. But how couldn’t they? As their skills became replaced with hyper-specialized labours, and their labouring bodies became replaced with hydrocarbon-fuelled
machines, the scale and impact that these mining activities have had on the city in such a short period of time have penetrated even the most intimate of shared spaces.

Having a snapshot to compare what mining was before the current moment enables us to understand how this moment altered miner’s relationships to the environment. Although it would be ahistorical and false to assume some pristine and nostalgic past where miners’ activities did not impact the natural environment upon which they depend since, of course, mining as an activity is an extractive activity, their labour was mediated by more than just production for production’s sake. Now, it seems to become clear that the way that mining is organized on the mountain in a general sense prioritizes exchange-value over all else, no matter if that extraction has ultimately culminated in the near destruction of the naturo-political environment upon which their work used to depend. After nearly 500 years of extraction, it seems as though Potosí has reached an impasse—a wedge has been driven between what was previously a more-metabolically balanced relationship between miners and their environment. This wedge represents the culmination of processes of mineral extraction which, although drastically altering the relationship of communities and miners to the surrounding mountains and potentially significantly altering cosmological understandings of metals in Andean life cycles, has finally destroyed the ritually mediated relationship which previously linked them. Thirty years of open-pit mining, alongside an accelerated and intensified exploitation of a wage-labour workforce to maximize profits, has consolidated what Marx referred to as the “metabolic rift” in the case of industrial agriculture (Foster and Burkett 2021, Marx 1990, Saito 2017).
But the fact that Qaraqara elders held space that day in October to reclaim a relationship to the mountain that had not been evoked for some time was in itself significant. In re-engaging the *Sumaj Orcko* with an offering and asking for forgiveness, not for more mineral productivity, they were humbly also acknowledging the consequences of limitless extraction. The realization that the destruction produced by capital, not only of workers’ lives but also the mountain itself, can provide fodder for a different kind of alliance. Despite portrayals in the anthropology of mining literature that seek to pit “communities as environmentalists” against “miners as workers” (see for example: Li 2000, Turner 1995), their powerful symbolic act revealed some important reflections on possible ecological post-capitalist futures that have much in common with maestros and the working-class residents of the city.
Chapter 8: Conclusion

8.1 Future as Fallow

As the global mining industry wreaks havoc across the globe to fuel absurd consumption rates and developmentalist promises of “increased growth and prosperity,” the crumbling of the imposing and perduring Cerro Rico de Potosí serves as a tragic portrayal of what has become a too-often-told tale across the world. But it also reveals potential seeds for a post-capitalist future.

One morning, before it had completely collapsed, my partner and I decided that we would venture up to the mountain’s summit to see the city down below. Taking off at sunrise, we followed dead-end roads and miners’ footpaths towards the top. The walk was challenging, as we were sometimes forced to scurry along the ledges of some of the collapsing areas of the mountain. As the terrain became more loose and rocky, the closer we got to the summit, and now totally into the oxides zone, the climb became more challenging. With so many operating mines and having had all of its brush removed during the colonial period, from down below the mountain appeared to be a totally barren place. Rocks and minerals completely cover its surface. On all my walks around the operating mines I had seen very little vegetation, to the extent that even the few sheep that some guardas had at their mine sites were forced to eat pea shells and old coca leaves. As we rounded a bend, now very close to the summit, we looked up towards a series of colonial adits which had been restored by Manquiri and then fallen into ruin. The rubble was particularly eye-catching in this area since much of the blood-red rock
was marbled with vibrant markings in shades of purple, blue, and black. Later, I would learn that that marbling, like seeing oil on a puddle in the sun, was the product of lightning strikes.\textsuperscript{165} Suddenly, out from one of those piles of refuse and rubble, streaked a \textit{vizcacha}. Due to the serious structural instability, this part of the Cerro was no longer being actively mined. And much to my surprise and delight, springing up from what seemed to be rock atop rock, were small patches of \textit{Wira Wira} (a plant used by miners for medical purposes), some \textit{yareta} (a very dense Andean moss which can grow to become hundreds of years old), and now this, often elusive, Andean hare. Left alone to its own devices, it seemed that at least on this part of the mountain, the Cerro Rico de Potosí was managing to provide life and shelter to other beings.

Illustration 38: The elusive vizcacha leaps among the oxides piles near the summit of the Cerro Rico. 

\textit{Photo taken by the author.}

\textsuperscript{165} Gose (2018) notes that lightning is closely associated within Andean ontological understandings of mountains as part of a lifecycle wherein the metals extracted from mining activities are regenerated.
According to anthropologists and ethnohistorians, precious metals figured importantly in the cosmological understandings of the reproduction of human and non-human life cycles (Absi 2005, Gose 1986, Harris 1995, Platt and Quisbert 2008). Gold mines in the Lake Titicaca region, along with the silver mines at Porco and Paria, were mined by the Inca for political and cosmological purposes (Bouysse-Cassagne 2004, Platt and Quisbert 2008). Although Incan mineral production never reached the scale of the Spanish conquerors, archaeologists have identified at least 126 pre-colonial mining sites in the Andean region (Cohen, Rehren and Van Buren 2008). According to Platt and Quisbert (2008), pre-Hispanic understandings of mineralization at important Incan mines preceding Spanish colonization included descriptions that referred to lumps of ore as “potatoes,” which “grew in the soil just like tubers” (158) and which required ritual offerings to ensure fertility and reproduction. Archaeologists excavating around some of these mines have found animal remains, feces, and ceramics which are believed to have been presented to a mine, or at the foundry, as offerings (Vetter Parodi 2008). Although the practices associated with these beliefs changed with Spanish colonization and the expansion of mining activities writ large, remnants of these underlying understandings of production/reproduction continued to persist, albeit with different manifestations, through ritual engagement with mountain spirits throughout the republican period and into the twentieth century by peasants in the rural countryside and miners themselves (as we saw in Chapter 4) (Absi 2005b, Nash 1979, Salazer-Soler 2002).
Anthropologist Olivia Harris (1995), in her research with the primarily agrarian Laymi peoples in Northern Potosí, noted that the Laymi express a point of pride in the “strength” of their mines, strength understood as their ability to continue to produce over hundreds of years. The Laymi worked the small-scale mines on their land periodically as a way to supplement their subsistence economy and many also travelled seasonally to work at the tin mines in nearby Llallagua. They assert that the mines around their territory continued to yield their mineral “harvest” despite many years of extraction, thanks to the efficacy of their own rituals and adhering to cyclical forms of production, including letting the mines rest, like they would allow a field to, during cyclical systems of crop rotation. “The Potosí mine was never allowed to fallow,” said one of the people Harris spoke with, “and that is why the mineral no longer grows there (313).”

While perhaps in the late eighties it seemed that the Cerro Rico mines had run out, as we have seen, production continues to this day. What is telling about the Laymi contrast between their mines and the Cerro Rico though, is the point about fallow. Functionally, the fallowed mine in Laymi territory worked because Laymi weren’t trying to produce minerals for cash to subsist, it was a complementary economic activity that followed distinct cycles outside of the economic metabolism that capitalist accumulation requires. Tubb (2020) describes a similar situation for artisanal miners in the Colombian Chocó, who chose to instead prioritize the rhythms of their gardens and hunting patterns and supplement that dominant economic activity with gold mining as a way to complement their subsistence with cash. And although the maestros in the Cerro Rico de Potosí weren’t miners who were simply supplementing an agrarian subsistence livelihood, they
were still using ritual practices as a way of mediating their relationship with the natural world. As Marco noted in Chapter 4, “it’s not simply extract, extract, extract all the time,” you need to give back, replenish a bit of what you have taken and in this way you can help mitigate that harm might come to you, and that your mine might continue producing. As we know, up until very recently miners were using daily and collective ritual offerings to humbly request both increased fertility of their mines and protection of their mountain spirit in exchange for bodily fluids, alcohol, energy, and animal sacrifice. The Qaraqara elders similarly offered some of these things as a way of repairing what has become a purely extractive relationship on the mountain. Both acts demonstrate a basic recognition that nature is not simply there for the “taking,” not a gift to be taken in order to maximize capitalist value production.

From the perspective of labour, which, as I have demonstrated throughout this dissertation, is intimately linked to the environment, miners’ use of time challenges common-sense understandings about the desire to seek permanent wage-labour. It also challenges the ways in which capital seeks to continue to lengthen the working day and intensify labour practices in order to maximize exchange-value production. Maestros, instead of seeking full employment with a stable wage, express preferring to use the time at their disposal, unproductively from the perspective of capitalist accumulation. As we saw in Chapter 2 and to the demise of mill owners and commercializers, the daily ch’allas, ceremonial work stoppages, festivals and carnivals, prolonged periods of drinking, as well as starting and stopping one’s work when it was convenient to ongoing commitments and life rhythms, were ways that miners actively resisted industrial time. If
we remember Marco, reflecting on the importance of downtime at the mine site, “mining is also this,” he said, gesturing around to his comrades sitting in a circle chewing coca and jostling one another. Those moments which were so important for developing a shared sense of mutual suffering and community were about working less, not more, against the logic of continued accumulation. Miners actively pursued work which afforded them, to use Kathleen Millar’s (2014) concept, “relational autonomy” (36), both with respect to how they chose to spend their time “unproductively,” and in relationship with one another. The work at the mines in the Cerro Rico de Potosí, although taxingly exhausting and certainly dangerous, is fulfilling and allows them to fulfill their economic obligations with a sense of dignity—it is the opposite of alienated and full subsumed labour under Capital. As they note, with the growing need to accelerate the quantity and rate at which ore is extracted due to the changing nature of the ore they are mining, as well as changing international metal markets, their skills fall under attack, becoming redundant and replaced by a hyper-specialized and individualized workforce. Several older maestros were content with continuing to work using kinetic energy, despite the economic hardship, in order to preserve the sense of fulfillment and meaning that working with their hands provided, something that was lost with the capitalist division of labour. The way they work, but also the spaces they carve out to “not work” signify an important interruption for the rhythms required in capitalist accumulation. They permit, in practice, the fallowing of the mines that the Laymi considered so essential to long-term use of that resource.
Just like underground mines would run up against “natural limits” like flooding, miners’ lifeworlds placed limits on the consolidation of capitalist relationships in their labour and livelihood making on the mountain, despite being fully connected to international mineral markets. As we have seen throughout this dissertation, up until what appears to be very recently, maestros maintained certain socio-cultural practices which required maintaining a particular metabolic relationship with the ore bodies and mountain spirits that govern them and part of this work involved developing and maintaining lasting relationships of comradeship and mutual suffering and celebration. As their time becomes disciplined by international market pressures and their work and work relationships break apart, mine rituals lose their place in miners’ practical engagement with their environment and this has terrible impacts on the lives of not just miners, but the families and communities surrounding them.

8.2 Struggles for Life

Small-scale miners in Potosi’s resistance to their subsumption by Capital is simultaneously a process of reclaiming life against death. As we saw in Chapter 5, what is at stake with this acceleration of capitalist economic metabolism are real people’s lives. As the mountain crumbles, miners are increasingly claimed by mine-related accidents. And since this exploitative economic system at the level of the mine site requires particular social relations in order to function and thrive, residents reflect on how their lives have become indirectly altered by these changes at the mine site. Interpersonal violence, violent crime, and suicides all appear to be on the rise for residents of the city, especially in its working-class neighbourhoods. In *Capital*, Marx emphasizes that capital, understood as dead labour, is constantly trying to dominate the living labour in the
process of wealth accumulation. As mine workers and residents of the city struggle against this accelerated economic metabolism wherein their bodies wither, are broken, and consumed by mine work, they are simultaneously engaged in a struggle for life. At a moment when the climate and an ecological crisis are combining to threaten the very existence of planetary life as we know it, in a system in which overproduction (and thus overconsumption of “resources”) is built into its metabolic functioning, the desire to work less at more fulfilling work as a way of promoting life is revolutionary.

With respect to the socio-natural world, as more and more is extracted from its surroundings and more energy and resources (human included) are consumed to fuel the insatiable need to accumulate wealth, what could potentially be left in the wake is not only an unlivable city, but an unlivable region where the mountain loses its ability to play an active role in regulating the ecological cycles upon which it depends. Despite the prolonged killing of the downstream waterways, the poisoning of species that depend on it (Strosnider et al., 2008), the burning and uprooting of ancient Andean shrubs (Robbins 2011), life continues to persist on the mountain. The ability of the vizcachas or the wira wira to thrive among the rubble is a testament that not all is lost. And perhaps this is why the Qaraqara symbolic redress ceremony on October 2021 that I introduced in the previous chapter is so important. The Qaraqara weren’t making an offering to ask for greater productivity from their revered and feared Sumac Orcko. Instead, they were recognizing the impact of the extractive mining model, one that simply takes and does not give, and fearing the ultimate consequences that might affect not only the miners, but the surrounding communities because of its disregard for its governing bodies.
Mountains, after all, have a tremendous impact on the microclimates, ecosystems, and weather patterns of the regions that surround them (Gose 2018). As anthropologist Peter Gose (2018) notes, Andean people’s ritual engagement with mountains signifies not only an obligation but also a powerful display of moral hope, since they know that ultimately, mountains are agents in and of themselves. He says, “By feeding, paying, libating, and otherwise caring for mountains, people try to induce them to reciprocate despite the massive differences of power and disposition involved, which highlights the moral basis of this hope (498).” Their hope to repair what seems to us to be irreparable harm to the mountain and the region underpinned that ritual act to prevent further harm, which is likely couched in a broader understanding about regeneration and balance between earth beings and the communities that depend on them. Theirs too is a claim for life against death.

It is the Qaraqara’s position that rings most loudly for the urban middle-class residents of the city, and on several occasions the Qaraqara leadership have been accompanied by members of the COMCIPO to demand that the cooperatives cease operations on the mountain. And, although they appear at odds with one another, as I have shown throughout the thesis, this undercurrent of a struggle for life isn’t necessarily a struggle that does not include mining, but rather a particular kind of mining. If the dispossession of maestros is consolidated on the mountain, with it goes the ritual obligations that they have to their Tíos. Although maestros do not conceive of the mountain in the same terms (as w’aka) as the Qaraqara, their relative and relational autonomy at the level of the working group, their active resistance to subsumption by capital, and their ritual
engagement with Tío affords for a distinct kind of extractive relationship, one that is mediated by relationships between miners and in opposition to capitalist forms of work discipline.

Illustration 39: A huge Wira Wira plant, the first of that size that I had seen during the many months I was traipsing around the mountain. Altitude: approximately 4,600 m. Photo taken by the author.

In some ways the collapse of the Cerro de Potosí is symbolic of what the world needs in light of impending climate and ecological collapse. The silver extracted from the mountain and then refined at the nearby mills served to catalyze what would quickly become a globalizing economic system by the currency necessary to significantly expand circulation to a global scale. The Cerro Rico was an important starting point for globalized capitalist accumulation across the world, which simultaneously commenced a
similarly global appropriation of the environment and labour to fuel industrial production and circulation. In the same way that Potosí served as the origin to this depredatory economic system, its collapse shows us the urgency of the need for it to also be the beginning of the end of that same system. But the end of that system doesn’t mean the end of mine work writ large, just an end to capitalist economic relationships which seek to maximize the exploitation of labour and the environment to the farthest possible extreme.

8.3 Relocating Abandonment

On July 7, 2022, local reporting claimed that the regional office in Potosí informed the public that 17 Cerro Rico cooperatives had signed agreements to “relocate” to work areas away from the oxides zone either on the mountain or outside of the city. The COMIBOL reported that the cooperatives had “gained consciousness about the structural integrity of the mountain and decided to accept the offer to relocate” (Miranda 2022). Despite calls to do so since the mountain was declared Heritage in Danger in 2011, this was the first time that the COMIBOL’s attempts to move miners from the most unstable parts of the mountain worked.

According to company reporting, in 2021, Andean Precious Metals reported in a company presentation that, due to declining grades, they would be shifting away from buying cooperative production by 2022, instead focusing on processing tailings from their fine tailings impoundment and from mines outside of the city. And, although there is no disaggregated data to establish to what extent this may or may not be true, the company’s shift to reduce and eliminate the purchasing of oxides from the Cerro Rico
could very well explain why cooperatives are choosing to abandon the upper part of the mountain. If the market is eliminated, then oxides are otherwise useless to them.

When I first learned about the possibility of the company pulling out of the mountain back in 2020, I spoke with Silvio about the likelihood that some of his friends in the oxides mines might be affected by the company pulling out. The market would be lost, and with it, their livelihoods. But Silvio saw it differently:

Maybe it’s better this way. That mining in Milagro isn’t mining anyway. And it’s so dangerous, that’s why I left a few years ago. Most of those guys are young, they’re not really interested in doing this forever, and the ones that are, well, they’ll come down here with us and try their luck. Just like [with] Estevan, I’ll support those I can. Those who stick around stick around because they can’t leave, like me, there is something about this mountain that keeps pulling you in. We survive the price busts, we survive the deposits running out [agotamiento].

Manquirí’s abandonment of the oxides deposits will not slow the tempo of accelerated market pressures that polymetallic miners are facing on the lower half of the mountain, but their withdrawal as a commercializing and productive force may slow the mountain’s collapse. By pushing miners downwards though, it may end up totally consolidating the disappearance of maestros on the mountain, since the work areas are already saturated. However, declining grades overall may end up producing what both the mountain and maestros need, some breathing room. Whereas Manquirí and the large-scale operations are motivated by the need to keep producing at a certain level to recover their capital invested and keep profit margins at or above industry averages, maestros like Silvio are in it for more than that. Having the room to breathe, hang out, and (hopefully) re-engage the saqr’a of the mountain might allow them to repair the relationships within their
neighbourhoods and the city. And it may, in practice, allow the mines to fallow as well.

And it is from their abandonment that we need to hope that a more just post-capitalist labour ecology is possible.
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