INTRODUCTION

A Mining Country

> Peru was, is, and will be a mining country. To say otherwise is an illusion.
>
> —ANTONIO BRACK, BIOLOGIST AND PERU'S FIRST MINISTER OF THE ENVIRONMENT

From balconies lining the narrow streets of Cajamarca, onlookers watched with a mixture of curiosity and concern as streams of people headed toward the Plaza de Armas on a late morning in May 2012. Organized into groups representing unions, neighborhood committees, educational institutions, and *rondas campesinas* (peasant patrols), the marchers passed storefronts that had been covered up as store owners braced themselves for another protest. These scenes had become all too familiar for residents of this highland town known for its dairy industry and, more recently, gold production at Yanacocha, South America's largest gold mine. Yanacocha was a joint venture of the U.S.-based Newmont Mining Corporation (which holds 51.35 percent of shares), the Peruvian company Buenaventura (with 43.65 percent of shares), and the World Bank's International Finance Corporation (with the remaining 5 percent of shares). These same actors were involved in the development of the Conga mining project, which

would extract copper and gold from a deposit twenty-four kilometers (15 miles) northeast of the Yanacocha mine.

The march was in opposition to the proposed Conga mine; just a few days prior, the company and its allies had organized its own march in support of the project. Residents had grown used to an increasingly polarized climate and the mass mobilizations that periodically took over the city's streets. The marchers approached the plaza chanting *"Agua Sí, Oro No!"* (Water Yes, Gold No!), the ubiquitous slogan repeated on banners and in the chorus of a song screeching from the loudspeakers outside the Church of San Francisco. Nuns in brown habits and peasant women in colorful woolen skirts cooked a communal meal for protestors who had traveled from rural communities and intended to stay in the city for what they were calling an indefinite strike. Sitting in the church courtyard, they shielded their faces from the sun with their straw hats or tabloid newspapers covering the latest developments of the conflict.

Controversies over the proposed mine were being played out on the streets of Cajamarca, at roadblocks, and in clashes with police, but they were also being debated by experts whose reports made the project's Environmental Impact Assessment a major point of contention in the conflict. Actors both for and against the project turned to engineers, hydrologists, and other specialists to evaluate the effects of mining activity on water quality and quantity. Protestors argued that four mountain lakes or lagoons (*lagunas*) would be destroyed if minerals were to be dug for, while the company promised to mitigate these impacts by constructing four reservoirs for local communities. The lagoons had also become a site of protest, where *campesinos* (peasant farmers) branded as their "guardians" were in turn guarded by police officers. The company had tried to make the lagoons commensurable with reservoirs, but protestors rejected the company's claims that natural sources of water could be replaced with chemically treated water and artificial reservoirs. By rejecting the project, they also defied the state's assertion that the country's economic development depended on resource extraction.

Since the late 1990s, marches, protests, and roadblocks had become common occurrences in many parts of the country, from Cajamarca and Piura in the North, to the smelter town of La Oroya in the Central Highlands, to the southern departments of Cuzco and Arequipa. At the time of the Conga protests, mining dominated newspaper headlines, public

debate, and the government's political agenda. Given the country's long history of mineral extraction, political activism in mining regions was certainly not unprecedented. In the 1920s and 1930s, mining camps were a focus of union organizing and leftist politics around workers' rights (see DeWind 1987; Flores Galindo 1974; Long and Roberts 1984), while in the early 1970s, campaigns focused on nationalizing the mines controlled by foreign interests. Beginning in the 1990s, however, the protests emerging in various parts of the country seemed to differ from the miners' strikes of the past and efforts to nationalize the industry. Calls for higher pay, better working conditions, and nationalization continued to surface, along with demands for a more equitable distribution of mining revenues and more investment in local communities.[1] However, such claims were accompanied by (and often subordinated to) a series of other issues: the defense of agricultural land, diminished water flows in irrigation canals, polluted rivers, mercury and lead poisoning, and disappearing water springs. The protestors' demands were sometimes expressed in "environmental" terms that resonated with global environmentalist discourses, including concerns about pollution, biodiversity, and water scarcity. At other times, their claims were more generally articulated as the "defense of life"—as with slogans against Conga and other projects proclaiming that "water is life." Gradually, *water*—protection of aquifers, reductions in irrigation water, polluted water resources, and destruction of mountain lakes—emerged as a key concern in protests over mining.[2]

While other Latin American countries, from Ecuador to Guatemala, also saw a rise in mining conflicts in the 1990s and 2000s, the intensity and frequency of conflicts in Peru was unparalleled.[3] Why was it that, in this so-called mining country, extractive activity ended up at the center of controversy and local resistance? How did water and pollution emerge as main points of contention in these conflicts?[4] This book addresses these questions by examining changing technologies and practices of mineral extraction, the deployment of expert and nonexpert knowledges in disputes over nature, and emergent forms of political activism that have accompanied mining activity in Peru.

Over the country's history, mining technologies have had transformative effects on landscapes and ways of life. For Peruvians, the place that epitomizes the country's long engagement with extractive activity is the Central Highland region. One of the main symbols of mining is the depart-

ment of Cerro de Pasco, which gave its name to the North American company that monopolized extractive activity in the region in the early 1900s. The Cerro de Pasco Corporation built a smelter in the town of La Oroya to process the ores from nearby mines. In the early twentieth century, mining produced runoff and toxic emissions from metal smelting that devastated agricultural production and farming, which in turn spurred migration and urban development. Yet in the smelter town of La Oroya, toxic emissions from the metallurgical complex became an environmental and public health concern only after nearly a century of the smelter's operation. In the late 1990s, local and international campaigns began to call attention to the dangers of lead and the spread of contaminants beyond La Oroya and into neighboring agricultural valleys and watersheds. The language and tools of environmental science and transnational activism turned "pollution" into a new object of national and global concern.

In the province of Cajamarca, to the north of La Oroya (see map I.1), the development of large-scale gold mining led to other kinds of transformations as the government embraced economic reforms and foreign investment in mining in the 1990s. The technologies of modern mining—vast open pits and cyanide leaching processes—*unearthed* new entities. Mining diverted streams and irrigation canals that transformed collective organizing, while sediments and heavy metals changed the properties of water and became a focus of studies, monitoring, and management plans. A sacred mountain galvanized opposition to mining activity, and lagoons emerged as key protagonists in protests to stop mining expansion. The expansive footprint of mining operations has made bodies of water, canals, and pollutants visible and politically relevant. These entities—though not usually recognized analytically as politically generative—mobilized communities and entered into protestors' claims over rights, enabling alliances among various actors (or preventing their collaboration).

In this book, I examine how modern mining technologies have brought "things" (a term I use to include other-than-human elements of the landscape) to the forefront of Peruvian politics.[5] The invasive character of extractive technologies has made these new entities central players in ways that "exceed politics as we know them" (de la Cadena 2010), taking politicians and corporations by surprise. Not knowing how to handle the situation, they have resorted to force to suppress opposition. Protests against Conga and other mining projects in the country have become emblem-

MAP 1.1 The Central Highlands, and particularly Cerro de Pasco and La Oroya, have come to symbolize Peru's long mining history. Meanwhile, Cajamarca, home to Peru's largest gold mine, is emblematic of "mega-mining" projects developed in the 1990s.

atic of an "anti-mining" front. However, the participants involved in these forms of organizing do not necessarily share common interests or an ideological stance that defines their position vis-à-vis extractive activity. They cannot be easily categorized into "pro-" or "anti-" mining sides, nor do they fit into clearly defined groups pitted against each other (e.g., peasants vs. capitalists, Left vs. Right, corporations vs. environmentalists, etc.). Mobilizations have been loosely organized around a variety of demands and have involved a diverse group of actors, including peasant farmers, unions, students, environmentalists, urban professionals, church groups, and nongovernmental organizations (NGOs). Significantly, demonstrations have been held in support of mining companies, and not just against them.

Conflicts are sites of antagonisms and collaborations among groups of actors that do not necessarily fit within the usual sociological categories (political parties, classes, ethnicities, or other social groupings) used to analyze political organizing. In such situations, the stakeholder model (which presents a sometimes monolithic view of corporations, states, and communities) has proved inadequate to understand the dynamics of resource conflicts (Ballard and Banks 2003). Moving away from depictions of environmental conflict as a standoff between opposing interest groups, Kim Fortun (2001) writes about "enunciatory communities" that emerge in response to the contradictions of environmental disaster. Enunciatory communities do not preexist, and they are not unchanging or internally coherent; they are not made up of members who share a common identity, but rather, they produce new identities.

In a similar vein, Anna Tsing (2005) examines how collaboration creates new interests and identities through the kinds of local-global encounters that characterize environmental politics. Collaboration does not mean that participants are driven by common goals; indeed, they may not even understand each other's agendas. Collaboration is not about consensus making but rather maintains friction at its heart. Drawing on these insights, I do not treat activist networks and corporate networks as ideologically antagonistic but emphasize the shifting alliances among various actors, and the ways in which they work both with and against corporate interests. I examine how the ambiguous and contradictory relationships between communities and mining companies sometimes produce unintended collaborations, but without negating the tensions, divergent interests, and incommensurable views that lie at their core.

At the turn of the twenty-first century, neoliberal economic reforms, technological innovations in the mining industry, new corporate practices, and changing forms of activism accompanied an aggressive expansion of mining activity. The chapters that follow examine the collectives of people and things that animate particular controversies over resource extraction, and the ways in which the effects of modern mining came to matter politically as mining activity emerged as one of the most hotly debated issues in Peru. I aim to open up the concept of "conflict" in ways that reveal the entangled relationships between people, places, and things that these controversies encompass.

The Proliferation of Conflict

In the opening epigraph, Antonio Brack suggests that Peru's mineral riches are inextricably tied to the country's past, present and future.[6] His statement implies that the country's development inevitably depends on resource extraction, and reflects the will of the government to impose an extractive model of development in spite of growing opposition. To understand the tensions that have arisen in response to mining activity, this book situates the emergence of recent conflicts in the larger context of Peru's mining history. I begin with a chapter on mining and metallurgical activity in the Central Highlands (chapter 1), a region that was central to the development of the mining industry at the turn of the twentieth century. The core of the book (chapters 2, 3, 4 and 5) deal with the Yanacocha mine, illustrating the challenges posed by a project that has become emblematic of "modern" mining technologies and corporate practices. I conclude with a chapter on the Conga conflict (conclusion) to reflect on the nature of grassroots organizing amid continued mining expansion.

My interest in mining and its complicated legacy was sparked when I traveled to the Central Highlands for the first time in 1999, when I returned to Peru to rediscover my country of birth after thirteen years living in Canada. At the time, La Oroya was a familiar name, the place where my maternal grandfather was born and lived until he left for Lima in his late teens. His parents had emigrated from China at the turn of the twentieth century and set up a general store in its main street. Like other migrants, I surmise that they, too, were lured to this highland town by the new commercial opportunities offered by the construction of the railway, the smelter, and the nearby mines.

At the time of this first visit, mining did not make national headlines, and politicians were not yet debating about water or mining royalties. But it was around this time that the problems between communities and mining corporations were starting to intensify. When I returned to La Oroya to conduct fieldwork as a master's student a year later, campaigns around lead poisoning were starting to attract attention at the national and international level. The case of La Oroya showed me that environmental problems—and how people react to them—are not self-evident. The way that mining's toxic legacy would be apprehended by local people, scientists, and activists took shape over the course of a century of extractive activity. Once the pollution was made visible and recognized as a threat, nascent activist campaigns in La Oroya influenced debates around health and the environment just as mining began to generate opposition and conflict elsewhere in the country.

Evolving narratives around mining and the environment in the Central Highlands enabled me to see processes that were just beginning to take shape and foreshadowed the rising tensions in other mining areas. At the time of my subsequent research visits to Peru in the early 2000s, mining was taking a new place in the political scene. One of the proposed mines that generated significant local resistance was the Tambogrande project on Peru's northern coast, in the department of Piura. The Canadian "junior" company Manhattan Minerals sought to extract US$1 billion worth of minerals from beneath the town of Tambogrande, which would require relocating about eight thousand people. To be developed in an agricultural valley producing mangos and lemons for local and international markets, the proposed project inspired protests from townspeople and farmers concerned about the mine's potential impacts on water and agricultural production. In a nonbinding referendum in 2002, 93 percent of voters said "No" to the project (Alvarado Merino 2008), which was ultimately halted when the company withdrew from Tambogrande, a decision allegedly made for financial reasons, but undoubtedly influenced by local opposition. The Tambogrande referendum inspired other communities opposing mining in Latin America, and the conflict was one of the first to receive widespread national and international media attention. It was only the first of a series of conflicts yet to come.

By the early 2000s, the term *mining conflict* (*conflicto minero*) had become ubiquitous in debates related to extractive activity in Peru. The

term permeated the media, political debates, academic analyses, and even everyday conversation. When I arrived in Peru in January 2005 to begin doctoral research on "the conflicts," an article in the national newspaper *El Comercio* exemplified the growing public concern over the proliferation of protests against mining activity. The article noted that "the year 2004 was a particularly problematic one for mining companies," with ninety-seven cases of conflict requiring the intervention of the Ministry of Energy and Mines, and warned that 2005 could bring an increase in mining-related social problems (*El Comercio* 2005). The map that accompanied the article was titled "*Campo minado*" (referring to mined territory, but also alluding to a minefield) and classified the numerous conflicts around the country into three groups: "resolved" (marked with a green checkmark), "uncertain" (question marks) and "pending solution" (marked with an "X"). In spite of its pessimistic prognosis, the map's checkmarks implied that a number of conflicts had been definitively resolved.

The map typified the popular image of *conflictos* as having spread throughout the country, with the potential to explode. The accompanying article, meanwhile, noted the absence of mechanisms for local participation and a lack of information, allowing companies to impose their will on the population. What was necessary, the article suggested, was for the Ministry of Energy and Mines and other state institutions to play a stronger role. In the popular discourse on mining activity, the emphasis was on strategies that aimed to resolve the conflicts through dialogue and agreements reached by governments, corporations, and affected communities. During my two years of field research in 2005 and 2006, the conflicts did indeed seem to multiply, but the possibility for "solutions" seemed more and more elusive.

While conflictos mineros appeared regularly in newspaper headlines, they also began to surface in the work of government agencies and nongovernmental organizations. In October 2006, the Council of Ministers created the Comisión Multisectorial de Prevención de Conflictos (Multisectoral Commission for Conflict Prevention) to respond to cases of social unrest in various parts of the country.[7] Having been sworn into office in July of that year, President Alan García needed to show that his government was capable of controlling the problems in mining areas. That same year, the Defensoría del Pueblo (ombudsman's office) created the Unidad de Conflictos Sociales (social conflict unit), which was responsible for

conflict monitoring and mediation, and for submitting recommendations to the government. The Defensoría tracked the number of active conflicts per year and classified them according to various types, including "socio-environmental" ones, and those specifically related to mining activity. On the NGO front, the Red Muqui,[8] an umbrella group bringing together NGOs working on mining issues, created the Observatorio de Conflictos Socioambientales (Socio-Environmental Conflict Observatory). The Observatorio produced reports and a monthly electronic bulletin with regional updates on issues relating to resource extraction. These and other organizations contributed to the ongoing work of monitoring, counting, and classifying conflicts.[9]

Discussion about conflictos abounded, but the term seemed to be a sort of shorthand used to talk about problems that defied simple explanations. It could be said that conflictos had become a kind of "black box," a term whose meaning is taken for granted, and whose histories and inner workings need not be known (Latour 1988). In popular analyses, the term "conflict" glossed over the intricacies of what was being described, often obscuring more than it revealed. To explain the cause of popular discontent about mining, analysts (whether representing the government, corporations, NGOs, or the media) tended to cite a similar set of issues: the lack of transparency of mining operations; inadequate processes of consultation; environmental regulations that were too lenient or not enforced; and the scarce economic benefits received by communities affected by mining activity (see, for example, Defensoría del Pueblo 2005; Alayza 2007; CooperAcción 2006). Many of these reports called for public participation in decision making, more stringent environmental regulations, and more investment in local communities. In some cases, these recommendations were framed in terms of increased accountability and a stronger commitment to "Corporate Social Responsibility," another term ubiquitous in discussions around extractive activity.[10]

Over the course of my fieldwork, corporations and state institutions seemed to gradually adopt many of the recommended mechanisms of accountability. They invested unprecedented amounts of money on community relations and local development, implemented participatory environmental monitoring programs, and organized public assemblies and information sessions intended to foster dialogue and public participation. It could be argued that these measures were not sufficient, or were

not adequately implemented, but it was evident that companies were responding to public criticism and following at least some of the recommendations made by government bodies and NGOs. Even as these measures were adopted, however, tensions seemed to intensify and the conflicts continued to multiply. That these efforts did not ease the problems between mining companies and people living in the vicinity of the mines was something that puzzled corporations, state officials, and NGOs alike.

To explore the apparent contradiction between the proliferation of protests and an increased emphasis on practices of accountability, I draw on anthropological studies of "audit cultures" (Strathern 2000a; Power 1994; Hetherington 2011). Both terms (audit and accountability) come out of financial accounting but have been introduced into other aspects of modern life and have become so widespread internationally that they are both ubiquitous and taken for granted. According to anthropologist Marilyn Strathern (2000a:2), these practices are characteristic of a period in which governance has been reconfigured by a proliferation of NGOs and environmental liability has emerged as an issue of global concern. She relates audit regimes to the emergence of neoliberalism and the changing role of governments in the management of corporations, public entities, and individuals. An audit seeks to make explicit the norms and procedures necessary to monitor indicators of performance, and transparency is equated with integrity. Ultimately, however, audits not only *monitor* performance, but come to *define* efficiency, quality, and good practice.

I bring these insights to the analysis of mechanisms that corporations and the state use to monitor environmental performance in mining operations, and that have accompanied the expansion of mining activity in Peru. These practices do not simply enforce an economic model and limit the role of governments; they also contribute to new ethical and moral standards that shape understandings of risk and responsibility. In conflicts over mining, practices of accountability often appeal to values such as democratic participation, transparency, and environmental stewardship, making them very difficult to criticize. Those who challenge these practices (or seek to redefine them) face an additional risk: being accused of being against dialogue, democracy, and development.

Instead of taking transparency and participation as the end point of the analysis (the desired outcome that will prevent or reduce the incidence of conflicts), I consider how mechanisms of audit, environmental manage-

ment, and accountability take shape and become enmeshed in the controversies. What I am proposing is an analysis that gets beyond commonsense understandings of the "conflicts" as a failure of state and corporate accountability. I am not suggesting that companies should forego public consultation, environmental audits, and other ways of demonstrating their accountability to the public and the state. Certainly, these mechanisms are necessary, and calls for more measures of accountability have led to some changes in the mining industry in response to public pressure. Before 2003, for example, Environmental Impact Assessments were publicly presented only in the capital city of Lima, not in the communities closest to a proposed mine site. In 2003, Peru adopted mine closure requirements, which obligate companies to include reclamation measures beyond the productive life of the mine. These are significant changes, and more needs to be done to incorporate environmental safeguards and community participation into the legal framework.

Regardless of the legal exigencies, however, mining companies are not all the same, and they operate with different standards. Some companies have adopted voluntary guidelines of "best practice" and invested in technologies intended to improve environmental performance (as defined by the industry), while others fail to meet even the minimum legal requirements and have received sanctions for their lack of compliance. However, some companies like Newmont have won industry awards even as the wider public criticizes their operations. Newmont has gained notoriety for infractions in other countries where it operates, in addition to its problems in Peru. In Indonesia, a government lawsuit accused Newmont of polluting the fishing village of Buyat Bay and affecting the health of the local people, accusations that the company denied (Perlez 2005). In Ghana, authorities fined Newmont for a cyanide spill in 2009, resulting in water contamination and fish kills (Earthworks 2010).

Evaluating corporate performance on a case-by-case basis can yield contradictory results, and can obviate the larger context of mining expansion and the political, legal, and technical mechanisms that facilitate it. Thus, an analysis of mining conflicts needs to situate the practices of individual companies within a hegemonic economic model that has emphasized resource extraction as a necessary path to "progress" and "development." In Peru, this economic model has been promoted by successive governments but has been met with anger and resistance from an increas-

ingly large segment of the population. The tensions surrounding extractive activity have brought to light the profound inequalities entrenched in Peru's socioeconomic landscape.

The Promise of Extraction

"Peru is a beggar sitting on a bench of gold" (*El Perú es un mendigo sentado en un banco de oro*).[11] This popular saying reflects what some Peruvians see as the contradiction between the country's extensive natural wealth and the conditions of poverty that prevail. While some scholars have written about the "resource curse" to highlight conditions of economic underdevelopment in countries that rely on resource extraction (e.g., Sachs and Warner 2001), these theories have a specific local resonance in current debates over mining in Peru. The multiple meanings of this aphorism capture the tensions, contradictions, and ambiguities that drive controversies over extraction. For some Peruvians, the story of the proverbial "beggar" began with the Spanish conquest, continued with the extraction of mineral wealth during the colonial period (1550–1824), and changed form as colonial interests were replaced by those of foreign corporations during the republican period. As mining activity intensified in the 1990s and a rise in the price of metals brought windfall earnings to transnational companies, the aphorism took on new significance for those who saw this as a new kind of plunder. For others, however, the saying had another meaning: it placed the blame on Peruvians who seemed unwilling or unable to make effective use of the country's bountiful resources. In the case of mining, the aphorism implied that those who protested against mining development were condemning the country to continued poverty in spite of the wealth of mineral resources beneath the ground.

President Alan García expressed this sentiment most explicitly when, in an editorial piece in the newspaper *El Comercio*, he evoked another saying: "*El perro del hortelano, que no come ni deja comer*"; this parable refers to the fable about a dog in the manger, who spitefully prevents others from having what he himself does not need. The moral of the fable is that people often begrudge others and prevent them from having something that they themselves have no use for. Many Peruvians, García argued, are unable to make land productive, or to commercialize the country's vast resources, yet they are also stubbornly unwilling to let others (i.e., private investors) do so. He attributed the country's underdevelopment to "dema-

goguery and lies which say that these lands cannot be touched because they are sacred," and to unsubstantiated fears about polluting mining technologies, which he characterized as a "topic of the past century" and irrelevant for today's clean modern mining industry. Local people who oppose mining, or who argue that lands cannot be touched because they are sacred, are like the "old communist anticapitalists of the nineteenth century, [who] disguised themselves as nationalists in the twentieth century, and changed shirts again in the twenty-first century to become environmentalists" (García 2007). In other words, protestors cloak their arguments in environmentalist terms to hide their true intentions, and in doing so, they stand in the way of the nation's progress. García's assessment reflects the polarized views that have permeated political and public rhetoric: specifically, the idea that modern mining represents a break from the polluting practices of the past and a new vision for the future that protestors fail to see because they are still caught in another era.

García's comments and much public discussion around mining invoke the country's long history of extractive activity to suggest both rupture and continuity. The legacy of mining in Peru continues to inform popular sentiment and debates over mining. These mining imaginaries and debates often rely on simplified oppositions between "old" and "new" mining, to distinguish the technologies and practices of older mines, such as those in the Central Highlands, from the "mega-projects" that began to operate in the 1990s. Transnational companies have been particularly adept at using this distinction in their public relations campaigns, insisting that "modern" mines like Yanacocha operate in a more socially and environmentally sustainable manner than older mines. A recognition of the environmental "passives" of older mines made this distinction particularly important, since the visible signs of mine runoff, dead rivers, and abandoned tailing ponds was not one that companies wanted to have associated with their operations.

While transnational companies and the government have been eager to play up the benefits of "new" mining over the "old" mines of the past, I do not want to treat these as unproblematic and mutually exclusive categories. Mining projects in Peru include large-scale open-pit mines, smaller underground mines, and informal (also called artisanal) mining. Sometimes these different types of mining can coexist in the same district. The technologies and labor practices of current mining projects do not nec-

essarily correspond to the categories of "old" and "modern"; nevertheless, I want to examine how different actors give these terms meaning and strategically deploy them in current debates. I also make a distinction between "old" and "modern" mining to examine how neoliberal policies and the subsequent expansion of mining activity contributed to the particular dynamics of recent conflicts.

Given Peru's long history of dependence on extractive industries, economic policies encouraging investment in mining activity cannot be solely attributed to the neoliberal shift that took place in the Latin American region in the 1990s.[12] By drawing attention to the turn of the twenty-first century as a significant temporal marker in this long history, I do not mean to suggest a complete break from earlier policies of extraction. Nevertheless, the turn of the century brought with it policies of economic liberalization and deregulation that would significantly influence extractive activity and local reactions to it, including a marked proliferation of protest activity in response to extraction that neoliberalism did not foresee (see Sawyer 2004).

In Peru, neoliberal policies were tied to the controversial government of Alberto Fujimori,[13] who was elected in 1990 and implemented a series of measures intended to bring the country out of an acute political and economic crisis. To curtail hyperinflation and revitalize the economy, Fujimori introduced a radical program of liberalization that focused on removing subsidies, privatizing state-owned companies, and reducing the role of the state in the economy. This restructuring program followed the neoliberal guidelines established by the International Monetary Fund and the World Bank as a precondition for receiving loans and technical assistance.

When criticized for his authoritarian leadership, Fujimori justified these reforms and his discretionary use of power (including an "auto-coup" in 1992 that dissolved Congress and suspended the Constitution) as necessary to defeat the Shining Path guerrilla movement and end the violence that had ravaged the country since 1980.[14] In keeping with this larger goal of overcoming political turmoil and economic instability, reforms in the mining sector were aimed at creating an investor-friendly climate. Legislative reforms resulted in the elimination of restrictions on remittances of profits, royalties, and capital; changes to indigenous land tenure; the lowering of taxes; and the elimination of royalties. Furthermore, tributary

stabilization agreements guaranteed fixed tax rates and the application of current statutes on environmental regulations for a period of ten to fifteen years. With these reforms, the role of the state was limited to the regulation of technical issues and newly introduced environmental regulations mandated by the World Bank through its loan incentives and technical assistance programs (Szablowski 2007; de Echave and Torres 2005). For example, the Environmental Impact Assessment was introduced as part of the environmental legislation implemented in the 1990s.

Neoliberal reforms also introduced new labor legislation that reduced the influence of unions, which were already weakened by the Shining Path's armed struggle. On the one hand, the Shining Path intimidated and murdered union leaders and other activists who refused to join their movement, while on the other, the Fujimori government repressed all union activity as part of its efforts to eliminate subversive activity. Caught between the Shining Path and the government's antiterrorism campaigns, the trade-union movement and popular organizations more generally were dealt a severe blow that would have long-lasting repercussions for political organizing and grassroots activism in the country (Boyd 1998).

As economic reforms were implemented in the early 1990s, there was a general slowdown in the global mining industry and a drop in mineral prices, but liberalizing the economy ultimately brought the desired results. The period from 1993 to 1997 was characterized by a global "mining boom," and interest in Peruvian mineral deposits resulted in a six-fold expansion of surface area allocated to mining activity (from 4 million hectares to 24 million hectares) (de Echave and Torres 2005:10). Between 1990 and 1997, investment in mining exploration grew by 90 percent at the global level, by 400 percent in Latin America, and by 2,000 percent in Peru (World Bank 2005, cited in Bebbington 2007). In the 2000s, the high price of metals continued to drive the expansion of mining's frontiers, pushing extractive activity into areas formerly used for agriculture and farming and affecting more than half of Peru's approximately six thousand campesino communities (de Echave and Torres 2005) (see figure I.1). During the mining boom, the single largest venture in Peruvian mining was the Antamina project, a copper and zinc mine in the department of Ancash developed in 1998 with a US$2.3 billion investment by a consortium of Canadian companies. Another significant investment involved the Canadian company

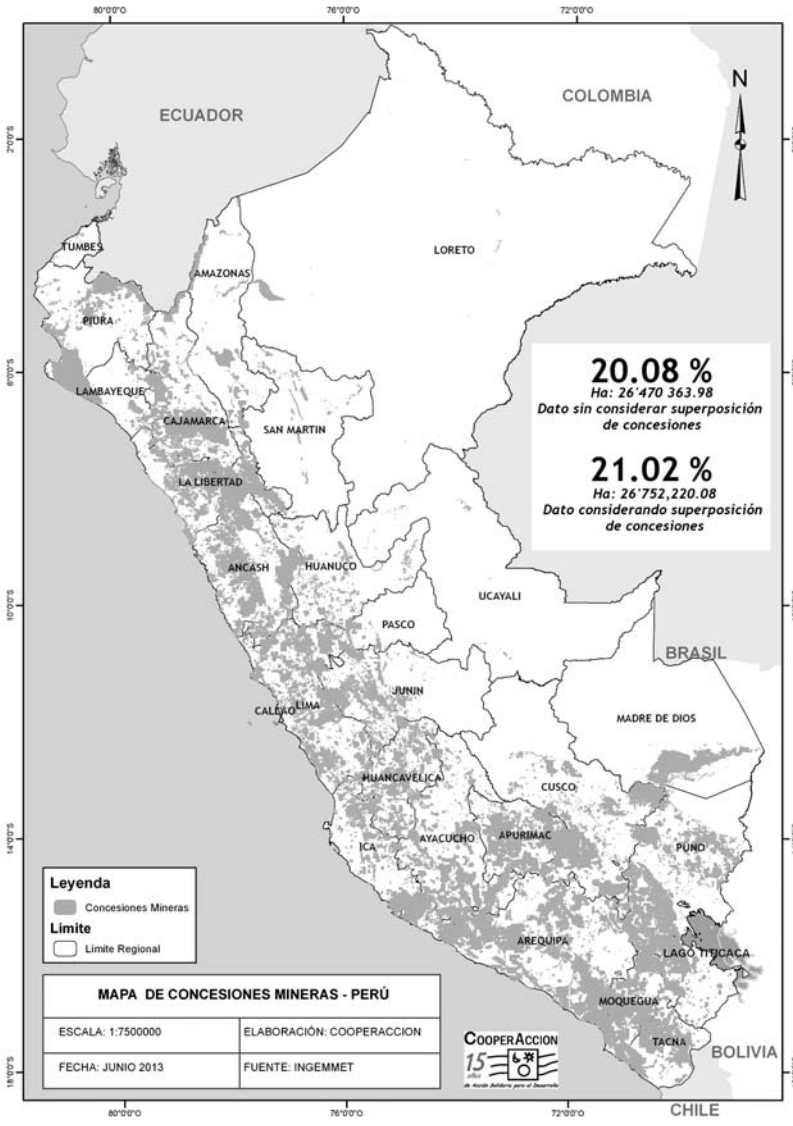

FIGURE 1.1 NGOs have called attention to the rapid expansion of mining activity. This map shows that mining concessions made up approximately 20 percent of the country's territory in 2013. Courtesy of CooperAcción.

Barrick Gold, which developed the Pierina gold mine (in the department of Huaraz), also in 1998.

The shift toward neoliberal policies that made Latin America a particularly attractive place for mining investment coincided with the diversification of the global gold mining industry, which led to an increase in gold production in Peru. A look at the world's top gold producers since the 1970s shows the extent of changes in the industry. In 1970, South Africa alone accounted for 67.7 percent of world production, with the former USSR a distant second. Canada, the United States, and Australia were the next largest producers, while the rest of the world accounted for less than 9 percent of total production. By the year 2000, the picture had changed dramatically, with these five countries together accounting for just over 50 percent of total world production. This diversification trend continued as South Africa's share of global production declined to 10.8 percent in 2006; that year, South Africa, the United States, Australia, China, Peru, Indonesia, Russia, Canada, Papua New Guinea, and Ghana ranked as the top ten producers, while a host of other countries (including Chile, Uzbekistan, Tanzania, Mali, and Brazil) accounted for 30 percent of world production (Johnson 2013).

At the turn of the twenty-first century, Peru was the most important gold-producing country in Latin America, in large part due to the output from the Yanacocha mine in Cajamarca. Aside from its economic significance, the symbolic importance of the Yanacocha mine cannot be overlooked: the mine was owned in part by Newmont, one of the largest mining companies in the world, and had the avowal and financial backing of the World Bank. For the Fujimori government, this project was an opportunity to showcase the country's new stability and attractiveness to foreign investors. Highlighting this point, President Fujimori was featured in the national media receiving the first bar of gold produced by the company Minera Yanacocha, in 1993.

Meanwhile, the state embarked on a privatization program that included the enterprises and concessions of Centromin, the state-run mining consortium formed in the mid-1970s from the expropriated holdings of the Cerro de Pasco Corporation. Among the Centromin enterprises that went back to private ownership was the metallurgical complex at La Oroya, which was purchased by the American company Doe Run (see figure I.2). While mining projects like Yanacocha symbolized a new era of

FIGURE I.2 The smelter in La Oroya, constructed in 1922, attests to the consequences of mining activity in the Central Highlands.

"modern" mining practices, the smelter at La Oroya represented the "old" mining of decades past—albeit in a new "green" guise that accompanied Doe Run's efforts to modernize the metallurgical complex and project an image of social and environmental responsibility.

Transnational corporations like the Newmont and Barrick Gold sought to differentiate modern mining from the underground tunnels and pickaxes of traditional mines, and from the legacy of pollution in places like La Oroya and the Central Highlands. In an effort to break free from these images, companies argued that new mining relied on chemical processes, powerful machinery, and sophisticated laboratories that made its operations safer and more efficient. But there were other significant differences from the mines of the past. Unlike underground mines, newer mines required a small labor force and created few opportunities for direct employment relative to the population in the mine's area of influence. And in comparison to earlier mines, modern open-pit mines made a huge imprint on areas that overlapped with peasant communities, pastures, and agricultural land (see figure I.3). Activists used the term *mega-mining* (*megaminería*) to describe the large-scale, chemical mining that characterized

FIGURE 1.3 The Yanacocha gold mine in Cajamarca, an example of an open-pit "mega-mining" project. Photograph by Brando Palacios.

these projects and brought about new challenges, risks, and uncertainties even as it continued a long history of extraction in this "mining country."

Transforming Landscapes

As foreign investment, privatization, and mining expansion intensified in the late 1990s, responses to mining activity reflected a new set of concerns. In La Oroya, air quality (particularly high levels of lead) became an object of study, monitoring, and transnational activism. In Cajamarca and other mining centers, issues around water quality and quantity became the focus of campaigns against the mine *and* of efforts by companies to demonstrate a commitment to social and environmental responsibility. The effects of mining could not always be measured and quantified (as mandated by the new audit culture) and became the focus of contestation. Determining what counted as an "impact" or what constituted "pollution" became points of controversy, as various actors sought to make perceptible (or imperceptible) the indeterminate and often unpredictable threats of mining activity.

As mining technologies transformed, severed, or realigned relation-

ships between people and the landscape, "the environment" emerged as an increasingly contested terrain of political action. By treating the environment as a political terrain, I build on foundational work in political ecology (see, for example, Bunker 1985; Peluso 1992; Peet and Watts 1996; Bryant and Bailey 1997), which seeks to combine political economy with a concern for the environment, including the unequal relations of power that characterize environmental conflicts and shape the emergence of social movements. Extending the field of political ecology, scholars have produced critical studies of landscapes that consider its material and agentive qualities (e.g., Kosek 2006; Cruikshank 2005; Raffles 2002). Others have suggested that resource conflicts are not only conflicts over the production of knowledge, but are also *ontological* conflicts over the making (or destruction) of worlds (Escobar 2008; de la Cadena 2010; Blaser 2009). I draw inspiration from these bodies of literature to examine *how* things like pollution take form and become tangible, *when* they matter, and *for whom* they become politically significant. These questions move us away from the idea of nature as a commodity or fixed external reality by considering the continuous process through which a substance comes into being, and its potential to reconfigure political terrains.

Pollutants and other entities (like a sacred mountain or a threatened lake) are not fixed or constant, but are the effect of practices that create stability and fixity, or that perpetuate the *in*stability of their material form. "The environment" and its constituent elements are not part of an external reality-out-there (Law 2004) but are the effect of relations among a collective of actors. Similarly, an entity like pollution also emerges from historically situated practices and performances, and it is only through its continuous enactment that it stabilizes and congeals (and in some instances, it may fail to congeal). These entities do not exist prior to or independently of the practices that revolve around them but are produced through "processes of history, concrete social and technical arrangements and the effects of power" (Murphy 2006:15). Protest actions, claims for compensation, and corporate public relations campaigns contributed to making pollution materialize as an entity, but maintaining the stability of objects requires continuous effort (Mol 2002). What are usually glossed as "conflicts," I suggest, consist of these ongoing efforts at stabilization, efforts that are fraught with tensions and which do not always produce the intended effects.

My analysis of materialization draws on Bruno Latour's distinction between "matters of fact" and "matters of concern." Latour (2004) questions the scientific certainty about nature and notes that—as mining makes clear—ecological crises open up controversies that preclude the establishment of indubitable "matters of fact" that can serve as the base for political decisions. In the face of this situation, two attitudes are possible: "We can wait for the sciences to come up with additional proofs that will put an end to the uncertainties, or we can consider uncertainty as the inevitable ingredient of crises in the environment and in public health. The second attitude has the advantage of replacing something that is not open to discussion with something that can be debated, and of binding together the two notions of objective science and controversy: the more realities there are, the more arguments there are. Matters of concern have replaced matters of fact" (Latour 2004:63). Latour uses the term "controversies" to describe this shift from matters of fact to matters of concern, through which indisputable, obstinate, and self-evident "facts" become destabilized, contentious, and connected to an ever-wider range of actors. A matter of concern is "what happens to a matter of fact when you add to it its whole scenography, much like you would do by shifting your attention from the stage to the whole machinery of a theater" (Latour 2008:39). Analyzing the "conflicts" as matters of concern requires shifting our attention to the networks of relations and the making of knowledges that shape the controversies.

In the case of resource extraction, the long-term effects of mining activity are indeterminate and uncertain and have become the basis of heated debate, producing controversies that cannot be settled through consensus or negotiation. Matters of concern challenge the idea of an incontestable, monolithic Nature that scientists must learn to speak for. Instead, Latour's commitment to ontological multiplicity suggests that not only are there many cultures (multiculturalism) that produce different representations of a unitary Nature, but a multiplicity of actors and agencies that enact socionatural worlds.

Water, land, and other entities are often thought of as "resources," and although their value might be contested, nothing seems more solid and self-evident than these elements of the landscape that are so crucial for human survival. Yet conflicts over mining reveal the multiple ways of configuring what we usually conceive of as "Nature" and its constituent ele-

ments.[15] The physical properties of the landscape are not natural or uncontested; rather, they are the product of constant negotiation, which sometimes exceeds human intentionality. People's relationships to the landscape are not based only on its utilitarian value, nor can these relationships necessarily be understood in terms of an environmentalist ethic. In the Andes, for example, people engage in practices that "enact the respect and affect necessary to maintain the relational condition between humans and other-than-human beings" that make life possible (de la Cadena 2010).[16] The idea that nature is ontologically plural challenges the conception of "resources" as targets of either extraction or conservation projects.[17] The multiplicity of nature also enables a different kind of politics and opens up the possibility that "reality might be otherwise" (Law 2004).

The emergence of new actors and concerns in conflicts over mining has opened up the space of the political, challenging dominant representations of nature. At the same time, the focus on water and pollution in recent conflicts has sometimes led to a reliance on technical solutions and scientific arguments that can exclude other forms of knowledge (and other socionatural worlds) from view. The technocratic management of the conflicts includes a focus on mechanisms of accountability aimed at promoting transparency, environmental management, and participation. Such initiatives can take the form of community dialogue, participatory environmental monitoring, and other initiatives under the rubric of "Corporate Social Responsibility."

Efforts to resolve the conflicts through these mechanisms of accountability rely on the knowledge of experts, who are called on to evaluate and monitor the practices of mining corporations. Increased transparency is often presented as a solution to the conflicts, but making corporate performance *explicit* can have the effect of making other things invisible (cf. Strathern 2000a; Barry 2009). What I want to draw attention to is that which remains outside of the frames of visibility: those elements that are not overtly part of political discussions about mining but nonetheless contribute to and perpetuate the controversies around it. To get at these undercurrents I use the concept of *equivalence* as an analytical tool to examine, on the one hand, how solutions to the conflicts are conceptualized, and on the other, the underlying tensions that remain beneath the surface. The term *equivalence* is intended to capture two related processes: First, equivalence refers to forms of expertise and technical tools used to make

things quantifiable and comparable; second, I take equivalence to be a political relationship that involves constant negotiation over what counts as authoritative knowledge.

Contested Equivalences

My interest in equivalence arose from efforts to understand how engineers and company officials rationalized their environmental management plans even as these were rejected by local people, who presented a different set of arguments to support their claims about the mine's negative effects. More generally, some politicians, industry representatives, and local residents sought to justify the expansion of mining as an activity that would contribute to the greater good, neutralizing any potential harm. Embedded in their respective arguments were calculations of costs and benefits, inputs and outputs, damages and reparations. Although people did not necessarily use the term, a logic of equivalence was implicit in many contexts that I observed in my fieldwork: in agreements that assigned a monetary value to the damages caused by the mine's operations; in environmental management plans that sought to balance water inputs and outputs; and in efforts to measure water quality against national and international legal standards.

My treatment of equivalence overlaps with but also differs from the way this concept has been employed in the literature. Equivalence has been a long-standing concern in anthropology, generally focusing on how things are made comparable and exchangeable. Rhoda Halperin (1994) provides an overview of this literature and traces the concept of equivalencies to the work of Karl Polanyi on the evolution of the market economy and cross-cultural models of economic organization. This and other work in economic anthropology centers on the social and ideological structures that condition equivalencies, and take equivalency-formation processes to be fundamental in all economies and for all facets of production, distribution, and consumption. My own use of equivalence, by contrast, is not restricted to markets and exchange. In my conception, equivalences involve processes of negotiation that can help elucidate the dynamics of contemporary conflicts, precisely because what is being negotiated often falls outside the logic of the market and rational calculation.

Any discussion of equivalence inevitably leads us to questions of value, a concept that refers to the meaning or importance society ascribes to a

thing.[18] As Miller (2008) notes, value can allude to both the alienable and inalienable qualities of an object: the work of giving it calculable monetary value (i.e., price), as well as that which makes it impossible to do so. If we look at the classical literature on value, however, value implies a comparison of entities, and commodity exchange is seen as establishing a quantitative equivalence of value between objects. According to Maurer (2006), the usual story told in works spanning from Karl Marx, Max Weber, and Georg Simmel to more recent works in the social sciences is that modern money transforms that which is socially embedded into abstracted economic forms. Money, we are told, commensurates the incommensurable, bringing things into a common metric. Money is often seen as the ultimate objectifier that transforms all aspects of life—from the material to the affective—into numerical cash equivalents. Yet scholars have shown that this is not necessarily the case and have drawn attention to the way people create or assign value to things within various social, political, and economic contexts. In a study of domestic money, for example, Zelizer (1989) shows that money is differentiated through the different meanings and uses we assign to it (for instance, compensation money, lottery winnings, and an ordinary paycheck are not all equal kinds of money).

By emphasizing the cultural and social structural factors that give value to things, these studies point to questions that are also fundamental to the conflicts I address in this book. How do people assign value to things deemed to be incommensurable? How are things made comparable? Zelizer (1989) and Maurer (2006) problematize the argument that money homogenizes all qualitative distinctions into abstract quantity. Contrary to many academic theories and popular assumptions, money (and quantification more generally) does not flatten social relations or erase the cultural dynamics of commensuration. Drawing on these insights, I want to explore how attempts to make and dispute equivalences create *new* social relations of collaboration and antagonism. More specifically, I want to examine what counts as equivalence in the calculation and evaluation of the effects of mining activity. To do so, I focus on the knowledge practices and mechanisms of comparison that make equivalences possible (or lead to their rejection).[19]

The equivalences I analyze include, but are not restricted to, monetary exchange and quantification. I also ask: How do people interpret and negotiate radically incompatible knowledge practices and forms of ethical rea-

soning (cf. Povinelli 2001)? How do mechanisms of comparison help make some problems or places visible and worthy of attention? How does a logic of equivalence disallow different ways of knowing and inhabiting the landscape that do not correspond to technical language, systems of measurement, or legal frameworks? How do technical devices (for example, legal environmental standards, international guidelines, and corporate codes of conduct) make it possible to assess and compare the quality of different objects and practices (Barry 2001)?

Claims and counterclaims about equivalence lie at the core of controversies over mining and strategies for conflict resolution but remain unexplored in the ways that conflicts get analyzed and "resolved." Some of the chapters that follow examine how this logic of equivalence is promulgated and contested, but I am also interested in what is excluded from equivalences, and what falls outside the legal and scientific frameworks that inform strategies for environmental management and conflict resolution. Perhaps it is useful in such cases to think about the *remainder*, that which cannot be subsumed by the measure of equivalences (Obarrio 2010). The conflicts that I look at in this book are never absolutely resolved, since the dramatic changes to land and livelihoods that are produced by mining activity cannot be fully compensated. The remainder represents what cannot be repaid, and this "leftover" has ramifications that open up a circuit of debt (Obarrio 2010:164). Communities in the vicinity of the Yanacocha mine continue to demand further compensation, employment opportunities, services, and benefits that they consider to be their right, even if they cannot always turn to the law to substantiate their demands. The remainder is outside the guidelines that inform strategies for environmental management and conflict resolution. In some cases, the remainder is also outside of any identifiable political arena, since the tensions that erupt from it do not easily translate into established political interests (e.g., leftist politics, environmentalism, or labor activism).

In my fieldwork, a logic of equivalence was implicit in discussion about extractive activity and embedded in calculations, comparisons, and exchanges that shaped the dynamics of mining conflicts. For instance, compensation agreements can be seen as a form of commensuration, a process of transforming different values or units into a common metric (Espeland 1998). Price, cost-benefit ratios, and other forms of quantification and standardization make different entities comparable. In other words,

two values or goods can be said to be commensurable if they are deemed to be equivalent based on a common standard of value (such as money), unit of measurement (e.g., rate of water flow), or system of classification (e.g., chemical composition).

A dispute over the mine's effects on an irrigation canal is one of the cases I use to show how a logic of equivalence was used to bring disparate entities into relation, with the aim of comparing (and ultimately reconciling) different forms of value. Canal users were awarded monetary compensation and received chemically treated water pumped from the mine's treatment plant into their canal in order to compensate for reduced water flows. These negotiations reflected a logic of equivalence that relied on a series of assumptions. First, it implied that water from a natural source was interchangeable with water coming from a treatment plant. Second, the mining company considered water quality acceptable if proven to meet the established legal standards for trace minerals and other substances. Third, the company asserted that the mine's effects on the canal could be reversed by "returning" the same amount of water that was lost and by compensating canal users with monetary payments, employment opportunities, and development projects.

In the canal controversy, equivalences enabled the mining company to turn protestors' demands into compensation packages and programs that aimed to demonstrate a commitment to Corporate Social Responsibility. However, equivalences must be negotiated and are thus always open to contestation. In some instances, canal users worked within the logic of universal equivalence to obtain benefits from the mining company: jobs, community development, compensation packages, and more water in their canals. At other times, however, they employed a different logic of equivalence, one that did not depend on universal currencies and measurements. They argued that legal classifications and water quality standards for canal water did not correspond to the campesinos' daily use of the water for domestic consumption, and that the compensation agreements did not make up for their investment in the construction, maintenance, and administration of the canal. In these cases, canal users argued that some things were incommensurable; the water from the canal was not just a resource to be used, and could not simply be "returned" in the form of chemically treated water pumped into the canal. Rather, the canal encompassed things, people, and experiences that were defined as

unique and thus incommensurable with the mine's offer of compensation (cf. Espeland 1998).

While these equivalence-making processes were used to measure and compare water and air quality, or in negotiations between canal users and the mining company, the equivalence of knowledges was also at stake. Underlying the disputes over mining were disagreements about what counts as evidence and whose knowledge (that of mining experts, scientists, NGOs, or peasant farmers) was credible and legitimate. The language and tools of science and expertise lend knowledge legitimacy and make it possible for knowledge to travel. Technical devices and regulatory regimes, from maps and measuring instruments to laws and environmental standards, enable otherwise incommensurable and isolated knowledges to move in space and time from the local site and moment of their production (Turnbull 2000).

Entering into equivalences was crucial for validating arguments for and against mining activity. A logic of equivalence informs assumptions about when toxic substances or alterations in the landscape exceed the threshold at which an "impact" becomes irreversible. This threshold is established through commensuration with legal norms—for example, the established legally permissible limits for trace minerals in water and air. These environmental standards, in turn, serve as a basis of comparison with international guidelines that activists can use to challenge the validity of existing norms. The principle of equivalence provides a powerful tool for environmentalism, which insists on international standards for environmental protection. For example, establishing equivalence between La Oroya and the North American site of a smelter owned by the same company revealed the discrepancies between Peruvian and international environmental standards. In this case, engaging the political through equivalence served as a strategy to create regional and transnational networks of solidarity.

According to anthropologist Tim Choy (2011:11), ecological politics, as well as our own forms of academic analysis, work through comparisons, "acts of relations—of nature, culture, politics and more—through which a given animal, plant, health problem, landscape, or question comes to matter epistemically and politically." In the chapters that follow, I explore how equivalences are made and contested. In doing so, I seek to make visible the relations between people, things, places, and issues unearthed by intensive processes of extraction. The lens of equivalence elucidates the

politics of comparison that are central to controversies over extraction, including the possibilities for action that it enables and the conditions that contribute to the perpetuation of conflict.

Unearthing Conflict

This book is based on a long-term engagement with environmental and mining issues in Peru, including two years of ethnographic research from January 2005 to December 2006. During this time, I was based primarily in the city of Cajamarca, in the northern province of the same name. The focus of my analysis was the Yanacocha mine. In Cajamarca, I divided my time between the city and rural communities in the vicinity of the mine. My research sites were varied: a public hearing to present an Environmental Impact Assessment; the inspection of an irrigation canal; protests and roadblocks; NGO offices; participatory water studies; information sessions; and other mining-related events. Working in a context of increasing polarization made it necessary for me to be explicit about my allegiances while being cautious about the information that was shared with me.[20] My initial contacts were made through NGO networks and led me to the offices of GRUFIDES (Grupo de Formación e Intervención para el Desarrollo Sostenible [Training and Intervention Group for Sustainable Development]), a local organization that became a key protagonist in the conflicts. Much of my time was spent among a circle of activists and leaders who took a critical stance on mining. I did not have the same level of access to corporate actors or their allies, but my position as an academic researcher allowed me to interview some Yanacocha representatives and others who supported the company. I also attended the many public events organized by the mining company and other institutions that were held in Cajamarca and traveled to communities where allegiances were far from clear-cut.

My fieldwork was empirically grounded in Cajamarca but followed the reverberations of the conflict beyond its borders. Short trips to the capital city of Lima allowed me to keep sight of the national context while following mining debates as they developed in conferences and NGO circles. Additionally, I traveled to other mining areas, including the Central Highlands. In this book, the case of La Oroya provides some background on the history of mining in the Central Highlands, showing that the conflicts are not isolated from larger national and international debates, or disconnected from global forces and processes of extraction.

I returned to Cajamarca in 2009 for follow-up research, and again in 2012 to examine the development of another conflict, over the Conga mining project, which offers a glimpse of the future of mining controversies and related activism.

The chapters in this book are divided into three parts. Part I, "Mining Past and Present," examines how mining transformed the landscape and forms of livelihood in the Central and Northern Highlands. I focus on mining technologies, political activism, and corporate practices in two time periods: the beginning of the twentieth century, and the turn of the twenty-first century. Chapter 1 traces the story of La Oroya from the early 1900s and the arrival of the Cerro de Pasco Corporation to the early 2000s, when a North American environmental organization named La Oroya one of the world's ten most polluted places. This global notoriety allowed for an expansion of alliances as residents, NGOs, scientists, solidarity activists, and other supporters worked to make pollution visible. At the same time, corporate programs that sought to control pollution shifted the burden of responsibility from the company to the larger community. By exploring the emergence of activism, changes in corporate practices, and the processes through which pollution comes to matter, this chapter situates recent controversies over mining within national debates and historical processes.

In chapter 2, I examine the technologies of mega-mining used at the Yanacocha gold mine. To distance their operations from the problematic legacy of environmental degradation in mining areas such as the Central Highlands, transnational corporations have sought to create a new image of *modern* mining that branded their practices as more socially and environmentally responsible than those of earlier operations. Meanwhile, protestors argued that the mine would reduce the quantity and quality of water available to local communities. I focus on a participatory water monitoring program to show how various actors used the language and tools of science and participation to support their claims.

Part II, "Water and Life," looks at water's capacity to provoke politics, inspiring large-scale protests and international activism against the mine as well as the day-to-day altercations that characterize relationships between the mine and neighboring communities. In chapter 3, I discuss one of the most significant protests against mining activity in recent years: protests against the expansion of the Yanacocha gold mine into Cerro Quilish

(Mount Quilish). In campaigns against the mining project, Cerro Quilish entered the struggles as an aquifer (a store of life-sustaining water) and an Apu (usually translated from Quechua as "sacred mountain"). Crucially, the knowledges that shaped the Quilish campaigns were not part of an already existing "indigenous tradition," nor were they simply a set of meanings that environmentalists, scientists, and protestors assigned to a preexisting thing. Rather, their discursive practices and the mountain's material form (as a mineral deposit, aquifer, and Apu) were mutually articulated as the controversy took shape. Cerro Quilish's changing form illustrates the political consequences of Nature's multiplicity. The many definitions of Cerro Quilish did not need to be reconciled into a single identity, for its multiplicity was precisely what enabled the creation of alliances across difference.

In chapter 4, I describe how an irrigation canal and the fluid relations built around it became the focus of disagreements about the effects of the mine on water quantity and quality. An attention to the material and affective connections between people and landscapes inspired me to think about irrigation canals as sites of entangled social and natural histories. The canals connected people and landscapes through relations that encompassed but were not reducible to economic or utilitarian concerns. Thinking relationally about a canal and those who used it revealed how landscapes are made through constant engagement and interactions between people, land, and other elements of the environment. These various relationships—made through affect and kinship, antagonisms and necessity—were crucial for understanding the disputes with the mining company.

Part III, "Activism and Expertise," examines the role of expertise in the conflicts, focusing on mechanisms of accountability that sometimes reduce conflicts to their technical dimensions. In chapter 5, I examine a key process in the making of social and environmental accountability in mining projects: Environmental Impact Assessment (EIA). I argue that the form of the documents produced for the EIAs (i.e., their required components, as established in legal frameworks) and the process of making them public (participatory meetings and public forums) can take precedence over their content. Two aspects of the EIA make this possible. First, the risks that are identified in the EIA are those that a company deems to be technically manageable based on the solutions and interventions

that it has to offer. Second, the participatory process of the EIA creates collaborative relationships among state agents, corporations, NGOs, and communities. These forms of collaboration strengthen the EIA's claims of accountability while circumscribing the spaces for opposition to a proposed project.

The delegitimization of opposition to mining activity (and the criminalization of protest) has contributed to the persistence of conflict in a climate of continued mining expansion. In the conclusion, I examine the continued problems in Cajamarca and their implications for thinking about corporate accountability and political activism. I relate the book's chapters to the 2012 protests over the Conga mining project, which once again brought resource extraction to the national consciousness and produced a marked shift in public opinion. The book's conclusion offers a reflection on Peru's expanding frontiers of extraction, the techno-political and economic regimes that make it possible, and the potential of grassroots movements to reshape national politics.