

## **ROAD CONSTRUCTION, DEPENDENCY, AND EXPLOITATION IN LADAKH, NORTH INDIA**

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### **ABSTRACT**

This article explores the politics of road construction and its effects on migrant workers in Ladakh, North India. The Zaskar Highway, a 292-kilometer-long trans-Himalayan road that has been under construction since 1971, provides employment to more than 1,200 seasonal and permanent road builders and their families. It is being built by the Border Roads Organisation, a public company that recently made the headlines for its abysmal treatment of workers, labor rights violations, and high fatality rate. Through an ethnography of road builders and their families, I document their situation and their particular relationship to death and danger. I attempt to assess the effects of road construction on workers' livelihoods and well-being, and point to a paradox: whereas labor-intensive methods are devised to generate employment and benefit workers, institutional mechanisms maintain workers in a situation of dependency and exploitation. The article identifies these mechanisms and suggests some potential solutions.

This article deals with the experience of migrant road workers on the Zaskar Highway, a high-altitude trans-Himalayan road under construction in Ladakh, North India. One purpose of road construction is to provide employment and generate livelihoods: road construction is used as a poverty alleviation tool, but how does it benefit road workers in reality? What are its effects on their livelihoods and well-being? Based on ethnographic observations, I argue that the agency of workers is severely constrained by structural factors that in many

cases prevent workers from benefiting from the redistributive effects of road construction. As a result, migrant workers see little or no improvement in their well-being.

The article is divided into four sections. The first section situates Ladakh, the Zaskar Highway, and the company in charge of its construction, the Border Roads Organisation (BRO). The second section consists of an ethnography of migrant road workers in Chilling and their families, their daily experiences on the road, and their immediate experience with danger. In the third section, I attempt to understand the wider framework and the factors that structure their experience as migrants and road workers. The article concludes with a section on potential solutions in response to the specific issues identified in the article, with the goal of alleviating the suffering and improving the situation of road workers based on existing mechanisms of protection and on the needs and demands of workers and their families.

## **SITUATING LADAKH AND THE ZANSKAR HIGHWAY**

### **Ladakh and the Road**

Ladakh is a sparsely populated mountainous region situated in the state of Jammu and Kashmir (J&K) in North India. The region is characterized by high-altitude mountain ranges, a semi-Arctic climate, and scattered villages that rely to a large extent on agriculture and pastoralism. Once an important Central Asian trading place located on one of the feeders of the Silk Route (Rizvi, 1999), Ladakh saw this flourishing trade end with the closing of its borders toward the end of the 1940s at the time of India's partition and the Chinese invasion of Tibet. Ladakh is also a contested territory that has seen four wars with Pakistan, in 1947, 1965, 1971, and 1999, and one with China in 1962. Parts of Ladakh are controlled by Pakistan and China, and its borders remain disputed. As recently as 1960, Ladakh was still unconnected by roads, and today some villages remain several days' walk from where the nearest road stops.

Currently, two roads link Ladakh to the rest of the country: the Srinagar-Leh road, completed in 1962, and the Manali-Leh road, completed in 1973. The two roads provide access to the region for nearly eight months of the year, but they are closed in winter. Since perhaps 1971, a third road has been under construction: the Zaskar Highway (it is difficult to date the beginning of the construction of the Zaskar Highway since the Public Works Department (PWD) office in Leh—and with it, all records of road construction in Ladakh—was “accidentally” burnt down in 2006. However, some of my respondents at the PWD have dated it as early as 1971 or 1979). The 292-kilometer-long road—whose trajectory follows the steep, narrow gorges of the Zaskar River and crosses the 5,060-meter-high Shingo La—will ultimately link the Indus Valley in the north to the

region of Zaskar and the state of Himachal Pradesh in the south, making the region accessible overland all year round for the first time. The road is being built to improve accessibility and link remote regions and their populations to the road network. It is also being built to answer strategic needs, as was the case with the Srinagar-Leh and Manali-Leh roads, which first opened for military traffic and are managed by the BRO. The Zaskar Highway was first under construction for civilian purposes, but it became a military project as it passed into BRO hands in 2001, following the Kargil war of 1999 and the recommendations of the Kargil Committee (Foundation stone laid, 2002).

The Zaskar Highway—like roads in general—also matters in terms of employment. Road construction provides employment, creates wealth, and redistributes income. Edmonds and Howe show that such labor-intensive methods have been consciously used by developing countries—where labor is generally abundant in relation to capital—to employ a mass of unemployed or underemployed laborers, often in order to provide a safety net to prevent poor people from falling into destitution and sometimes as food-for-work or famine relief programs (Booth, Hammer, & Lovell, 2000). By creating employment in rural areas for unskilled labor, labor-based methods also decrease rural-to-urban migration; they allow local contractors to be employed and therefore bring economic development to rural areas at the same time as they increase rural workers' skill levels. Importantly, they generate an income that can be immediately invested, thereby increasing agricultural production and rural industrial activities. In the longer run, labor-intensive methods can also be used for road maintenance, providing durable employment to the population. For these reasons, labor-based road construction and maintenance are strongly encouraged and favored by donors (see Porter, 2002). In its annual report on the Sub-Saharan Africa Transport Policy Program (SSATP), the World Bank considers employment generation to be one of the crosscutting issues of transport development (SSATP, 2008) and actively promotes the concept (SSATP, 2007, 2011).

In India, also, the objective of employment generation has long been included in road construction considerations: the Bombay Plan stated that “road construction and maintenance can provide employment for a very large number of skilled and unskilled labour[ers],” and it was later established that employment generation should be seen as one of the key objectives in the development of the country's transport system (Dalvi & Verma, 1984). Chief engineers estimated that “road construction and maintenance can provide employment for a very large number of skilled and unskilled labour[ers],” whose number would grow “from about eight *lakhs* [800,000] in 1961–62 to 42 *lakhs* [4.2 million] in 1980–81” (Central Road Research Institute, 1963: 100). In 1974, a study commissioned by the Planning Commission estimated that the construction of every kilometer of national highway would create 141 to 153 person-years of work, along with up to 96 for state highways, 85 for district roads, and 32 for village roads (NCAER, 1974). Road construction targets included in the Fifth Five-Year

Plan (1974–1979), it said, would generate an employment level of 10.8 million person-years, while the transport sector would employ another 2.9 million people permanently. The employment component can be found in the following five-year plans issued by the Planning Commission, which state that numerous village roads have been constructed under various employment programs and famine relief schemes: see, for instance, the Ninth Five-Year Plan (Government of India, 1997). The Eleventh Five-Year Plan insists on the use of labor-based technology to provide employment in rural areas and contain rural-to-urban migration (Ministry of Rural Development & Planning Commission, 2006). This highlights the dual objective of road construction in India: delivering roads as well as creating employment and redistributing income. And BRO is the subject of a full chapter in Edmonds and Howe's *Roads and resources* as one successful illustration of the use of labor-intensive methods in road construction on a large scale (Soin, 1980).

In Ladakh, the Zaskar Highway provides employment to more than 1,200 seasonal and permanent road builders and their families on four different construction sites. These workers—who originate from Nepal, Jharkhand, Bihar, and West Bengal—live and work in incredibly difficult conditions, moving with the road as it slowly progresses into inhospitable territory. However, as the sections below tend to show, the road provides employment and immediate means of subsistence, but besides that, workers tend to live in abysmal conditions, their incomes are insufficient, they see no long-term improvement in well-being, and their situation remains vulnerable and marginal. But before looking at the ethnography of road workers, I would like to present the BRO, its history, and the legal and institutional arrangements that define its relationship with road workers.

### THE BORDER ROADS ORGANISATION

BRO was created in May 1960, under the impetus of the then prime minister of India, Jawaharlal Nehru. BRO is an interministerial agency under the chairpersonship of the prime minister (of the minister of state for defense since 1985), and it is part of the Ministry of Road Transport and Highways. It is in charge of the construction of strategic infrastructure (roads, bridges, airstrips, buildings, etc.) and supports the army in time of war. Since its creation, BRO has been entrusted with road construction in several states of India, as well as in Bhutan, Burma, and Afghanistan. BRO has a semi-military structure and is composed of the General Reserve Engineer Force (GREF), engineers of the Indian army's corps of engineers, as well as numerous casual workers. BRO controls 15 projects. In Ladakh, the project is called Himank from the Zoji La in the west to the Tanglang La in the east.

As of 2004, BRO employed 37,300 GREF personnel, and 70,000 CPL (casual paid labor) personnel, the latter engaged on six-month contracts. Although the immense majority of the work force is called "casual," in reality many CPL

personnel work permanently for BRO: some workers I interviewed had been working for BRO without any interruption for more than six years. Yet their working conditions are extremely precarious, and their contracts can be terminated at any time without advance notice, or not be renewed. For instance, in February 2005, 306 CPL workers were laid off in Akhnoor and formed a workers' association. As the chief engineer of the project mentioned:

Para 503 of Border Roads Regulations clearly says: "The personnel may be employed on daily or monthly rates of pay. If on monthly rates, the period of their engagement shall be for a maximum period of six months at a time and the personnel shall not be eligible for any of the privileges of continued employment under Government. The services of the personnel are liable to be terminated at any time without notice and no terminal benefits shall be payable." ("Termination of services," 2005)

The workers' action was also labeled "illegal and unjustified," since working conditions are constrained by army rules and by the Army Act, although CPL personnel are not entitled to army benefits such as salaries, pension, compensation, or other advantages. Therefore, basic rights such as those contained in the Minimum Wages Act and the Industrial Dispute Act, the right to unionism, and simply the right to the formation of an association do not apply to BRO workers (Termination of services, 2005). And it is a fact that BRO workers are denied minimum wages and benefits ("Wages for BRO workers released," 2008).

In wartime, BRO acts as a military organization by repairing roads, bridges, and airstrips of strategic importance. For this, it also relies heavily on CPL workers. During the Kargil war in 1999, 1,300 laborers were brought in from Dumka to maintain and repair roads and bridges that were being shelled by the Pakistani army (Noatay, 1999). Although BRO workers are entitled to compensation in case of death or disability (Rs200,000 in compensation in the case of death; Rs150,000 in the case of total disability; and Rs100,000 multiplied by the percentage of loss of earning capacity in the case of partial disablement), the rules also state that workers employed for less than 179 days are not eligible for compensation (BRO, 2009). Even though CPL workers or their families generally do receive compensation, the payment is often delayed ("Demands of CPLs," 2003) and is only provided after a lengthy (18 months) and complicated process during which most of the money is diverted toward bribes and other expenditures. If a deceased worker's body is not found, as in Chilling in August 2006 when two bodies were swept away in the Zaskar River, compensation can only be paid after seven years. Many other accidents and diseases linked to working conditions, such as pulmonary edema, are not covered and do not give workers the right to compensation (Noatay, 1999).

Despite the absence of political rights, CPL workers episodically take action, demonstrate, and go on strike to demand better working and living conditions. In 2001, a group of workers complained to the All India Trade Union Congress

regarding the lack of compensation, delayed payment of salaries, absence of retirement benefits, and generally “anti-labour policies” (“Defence civilians to observe July 13,” 2001). In 2003, workers complained to the state of J&K about “non-payment of bonus, supply of inferior quality uniform and shoes, non-clearance of wage arrears and delayed settlement of compensation cases” and asked for the payment of retirement pensions, the issuance of insurance, and the reinstatement of workers who had been laid off (“Demands of CRLs,” 2003). In 2004, the J&K minister for labor and employment raised the issue and asked BRO “to take appropriate measures for improving the working conditions of its vast human resource.” Workers were asking for transport, temporary shelter, medical aid, and the supply of essential commodities at fair prices, as well as the “implementation of Labour laws, security cover and other welfare schemes for all Casual Paid Labourers and early disposal of cases under [the] Workmen’s compensation Act and payment of compensation as per provisions of the Act” (“Jora commends BRO,” 2004).

In the past, BRO has applied extremely repressive policies to its employees. In 1980, the Centre of Indian Trade Unions (CITU) in a note to the ILO complained that BRO workers “ha[d] been refused the right to form an association, ha[d] been arrested, tortured, detained without trial and dismissed for their trade union activity and had their ‘illegal’ trade union premises broken into, their documents confiscated and their funds seized” (ILO, 1981). These events took place in December 1979, after 2,000 workers employed in Tezpur, Assam, formed an association to demand better working conditions. A protest was held, the army was sent in, and workers were fined and beaten and 335 of them “arrested and held in prisoner of war cells for weeks and months without sanitation, food, water or lighting arrangements and their families were terrorized by the military” (ILO, 1981). Some were held for 18 months before being discharged without trial, while some were still in jail awaiting their trials at the time of the 1981 report (ILO, 1983). The case was finally dropped in 1983 after the ILO acknowledged the conclusions of an internal Supreme Court judgment that ruled that army rules—and therefore the absence of freedom of association—applied to BRO employees (ILO, 1983).

Although this incident was never mentioned by the workers themselves (and probably was never heard of by them), such facts explain why in Chilling BRO workers were not politically organized. They complained about working conditions, their pay being raised and decreased, the fact that maternity leave was no longer granted, and the fact that promised rations and equipment were never delivered (working equipment, clothes, shoes, and mattresses, for instance), but they rarely complained formally to the hierarchy. As the then director of BRO, Major General Soin, put it in 1980: “BRO is run along military lines,” which “produces relative efficiency” (Soin, 1980: 165). BRO relies heavily on “casual” laborers, who—although not trained—are permanently employed to perform the most dangerous tasks in place of BRO’s regular employees. Institutionally, everything seems to be set up to sustain this relatively cheap and docile source of labor.

## ETHNOGRAPHY OF MIGRANT ROAD WORKERS

### The Life of Thinle Sherpa

Among the 1,200 migrants who work on the four construction sites of the Zaskar Highway every summer, around 300 are stationed in the village of Chilling, at the northern end of the road. They stay in three camps situated on the side of the road at a distance of 500 meters to five kilometers before and after the village. The experiences of these men and women provide first-hand material that helps us understand the consequences of roads and road construction for road workers in terms of livelihoods and well-being. During my fieldwork, I focused on two groups of workers. The first was a crew of Nepali CPL workers (mainly Sherpas) living and working in Chilling on a long-term basis. Most of them lived there with their families (wives and children) and formed the vanguard of the drillers and blasters. The second group was a crew of 48 seasonal workers—or ICPL (imported casual paid labor) workers—all men, recruited in Nagrota, near Jammu, to work in Chilling during the four summer months (June to September). Like most road builders in Ladakh, they came from the district of Dumka in Jharkhand, to which they generally returned after their four-month period in Chilling.

From September 2006 to July 2009, I engaged with many migrant workers along the Zaskar Highway and collected many different stories. Out of this complexity and this myriad of experiences, some elements were shared by many workers: there seemed to be certain recurrent patterns in their choice to migrate and work on the road, and in their experience with work, death, and danger. These are well embodied by the concept of “structural violence” (Farmer, 1997, 2004; Galtung, 1969), which was first used by Galtung to differentiate it from personal violence: it is not the violence that a particular person commits but that which is “built into structure” (Galtung, 1969: 171). Close to constituting a situation of social injustice, structural violence does not deny migrants agency, but it curbs it and puts some people more at risk of suffering and death than others. I use this concept to try to understand what drives workers on the road, what structures their choice, and why they do not benefit from the road. I propose to explore these themes through the life of Thinle Sherpa, one of the first CPL workers I met when I returned to Chilling in April 2007. It was he who introduced me to the world of road workers as I followed him from his morning rituals to his drilling work during the day and back to his tent in the evening. It was also with his family that I stayed in winter. Many of the things I learnt on the road were through Thinle, and heuristically, his life and experience on the road contain most of the elements necessary to understand the lives of road workers in Ladakh.

Thinle was born around 1967 in a village called Kiangsing in the district of Sindhupalchok in Nepal, close to the border with Tibet. At the age of 15, he started working far from home to supplement the household’s income, when he left to sell garments on the streets of Bombay and later in Karnataka. He returned

after four long years and married Zangmo, with whom he had four daughters before he left Nepal again. Thinle sometimes worked in the lumber business, illegally exporting wood to Tibet and reinvesting his income to buy cows. When he started experiencing losses, he decided to leave again, alone, to sell garments in Bombay. He returned after a few months and bought 50 goats, most of which died of disease. The political and security situation in Nepal was grim as the country was going through the People's War of 1996–2006, and the national and local economy was deteriorating further. Thinle and his family lived in fear of forced enrollment by the Maoists and had to face looting and acts of violence from both Maoist and government forces, as both would ask the villagers for support while suspecting them of helping the enemy.

In 2003, like many others, Thinle and Zangmo decided to leave Nepal with their two eldest daughters and their fifth, newborn daughter Passang Dolma. They started their long journey in Himachal Pradesh, where Thinle and Zangmo worked for a private road contractor. Yet, as is often the case with migrants, they were cheated and were never paid. When they heard that working conditions in Ladakh were better, they decided to cross the Himalayas. They worked in Stok, building walls and canals, but once again they were not paid the full amount that was due to them. From Stok, they went to Skalzangling, where Thinle worked as a mason and Zangmo gave birth to their sixth child and only son, Tashi. Whereas their economic situation had been deteriorating for years, and had deteriorated further since they had left Nepal, it now started to improve for the first time, although only temporarily. From Skalzangling they moved to Shey, where they found work in stone breaking. They then moved to Kargil in 2005 to work in road construction for a private contractor and there married their eldest daughter to a relative. When they heard about work opportunities with the army in Batalik, they moved there, and Thinle started carrying food rations from the main army camp to advanced posts. The work was well paid, but conditions were terribly difficult: he had to work at night, carrying heavy loads in the snow, and he was the only breadwinner. Once again, they left in search of a better livelihood.

In November 2006, Thinle and his family reached Chilling. Some of their relatives were already working there, and Thinle had heard about work opportunities with BRO on the Zaskar Highway. This is how he recalled his arrival in Chilling when I first met him in April 2007:

The officer recruited us for that purpose [drilling]. We didn't want to, we were scared, but the officer said, "There are no vacancies in road maintenance and embankments; there are only vacancies in drilling." We had heard about the deaths [Four workers had died in an accident in Chilling in August 2006]. The officer didn't tell me, but because of the deaths in August, the drilling had stopped until December. Because of that, they told me they would give me employment as a driller. This is my first job as a driller.

I came here and I heard from people who had been working here longer that people had died right at that place. And for the first three days, I was



really scared. Nobody was working there at the time. From December to April, we've received more money than people normally get for drilling: Rs3,900 [about \$85] per month instead of Rs3,200. This is more than you get elsewhere.

Until June 2007, Thinle, Zangmo, and three of their children—Mingmar, Passang Dolma, and little Tashi—shared a concrete shelter with another Nepali family next to the trolley over the river, on the uphill side of the road. In 2007, Thinle's family, along with about 12 other families, was relocated to a campsite opposite the place where the Markha River flows into the Zanskar, where the new trolley now stands. The new camp was closer to the construction site, but there was no stream nearby: water had to be brought to the camp every morning in large barrels in the back of a truck.

Unlike Chilling or other villages in Ladakh situated in areas that receive a lot of sun in summer and winter, both of the areas where the road builders lived lay in the shade of high peaks and ridges most of the day, barely receiving two hours of sun per day in the middle of winter. If the temperature inside the tents was suffocating in summer, it dived far below zero during winter as the icy Zanskar wind blew along the river, penetrating the numerous tears and holes in the tents, seeping through the blankets, and freezing one to the bone. When I asked a camp inhabitant in spring where the hens I had seen the previous autumn had gone, she told me they had frozen overnight. And indeed, once the small *bokhari* stove had stopped producing its heat and smoke, the temperature would become arctic: I remember staying awake and shivering the whole night in Thinle's tent. In the early morning, the drillers would leave for work severely underequipped; they would build small bonfires in order to get warm in the shade of the cold vertical walls that dominate the river, a thin dark-blue ribbon partly covered by ice and snow at that time of year. It was so cold that fuel tanks and engines had to be heated over the flame of a stove placed underneath the tipper, before the engines could be started.

Unsurprisingly, the climate was a fundamental variable in workers' lives and well-being in Chilling. It determined their living and working conditions, what food was available and how much it would cost, how much they would have to spend on heating, what work could be done, and how much they would be paid. The winter months were thus cold and difficult: people often fell sick (especially children), food was limited and expensive, and heating was costly. On the other hand, workers were paid more, working days were shorter, and the frost held the rocks together so that rock falls were less frequent. In summer, the heat could be unbearable (especially in the tents for women who stayed at the camp), so that food spoiled easily, there was a bigger workload, and the melting frost and rain could trigger numerous landslides. The working conditions were much more dangerous. Yet in summer, migrant workers could also work for the local villagers and sell *chang* (beer) and *raksi* (distilled alcohol made of fermented rice) to seasonal workers and earn extra income.

Thinle and his family worked on the construction site for nearly two years: Thinle as a driller, and his wife Zangmo as a *chowkidar*, guarding the camp during the day and monitoring movement on the dirt track during the night to prevent people from stealing road-building materials. Mingmar—their second daughter—also worked on the road, mixing cement and building walls. Zangmo also prepared rice *chang* and *raksi* over the fire during the day, selling it to workers who stopped at the camp during or after work. Sometimes, she also cooked for them. Workers—CPL and ICPL but also regular BRO employees—usually paid her at the end of the month when wages were distributed. Workers sometimes left Chilling in considerable debt, and sometimes people’s money was stolen, which is how Zangmo’s neighbor Neema Dolma lost Rs7,000 one day. In spite of this, the three wages paid by BRO allowed Thinle and his family to make a living and save money.

The cost of living is high for migrants working on the road: they do not have access to government rations, most BRO rations are sold on the black market, and, as a result, a large proportion of their income is spent on food and fuel for heating (wood and kerosene). Because living costs are high, many workers do not manage to save much, spending most of their income on what is required for their subsistence and that of their family. Yet Thinle and his family were among the few who were doing well. This was the first time in his life that Thinle had managed to save so much—Rs10,000 to Rs12,000 a month on average, mostly thanks to the sale of *raksi* and *chang* (up to Rs8,000). This was very unusual for Chilling, where, in general, the level of savings was much lower—around Rs2,000 a month—while many households and workers did not manage to save anything. Thinle and his family even made plans for their future back home in Kiangsing, as the situation in Nepal had improved since the end of the civil war and the signing of a peace agreement in 2006. Thinle’s family had a small piece of land in Kiangsing, and they would send money back home to build a house. They were planning to buy sheep and goats and restart Thinle’s cattle business. Zangmo even talked one day of buying a car—how seriously it is difficult to tell, since there is no road to Kiangsing. Their daughter Mingmar was happy with these plans: “I don’t like working on roads. My dream is to become a goat-keeper in Nepal. My father told me we’re leaving next year in October [2008]. I’m looking forward to that.”

### **Living with Danger**

Building the road in Chilling was terribly risky. The danger was obvious to anybody visiting the area, but many workers were willing to take the risk, as here at least they were not cheated too heavily and payments came in regularly. Based on the intensity and dangerousness of the tasks, there were essentially two types of work in Chilling: drilling/blasting and other diverse tasks such as digging, building walls and drainage, breaking stones, loading trucks, setting the

stone roadbed, and tarring. The drillers and blasters were mostly CPL workers overseen by a junior engineer, diesel engine operator, and blaster, while other tasks were performed mostly by ICPL workers, loosely supervised by their *mate* (labor broker and manager) and sometimes by a BRO overseer. Doing physical work at this elevation and in these conditions is necessarily strenuous, but the pace of work for the ICPL workers was rather lax—except when the officer in command was due to visit, generally on Wednesday mornings. Tarring—although impressive to an outsider because of the flames, the dark clouds of burning kerosene, the smell of melting tar, the sooty faces and blackened clothes, and the hellish picture that emerged—was not perceived as a difficult task by the workers themselves, although they largely ignored its health consequences.

In comparison, drillers and blasters worked at the forefront, digging the road, blast after blast, at a pace of two meters a day. Two to three blasts were carried out each day and between 5 and 20 holes had to be drilled for each blast. The drilling machine was powered by a compressor stationed outside the danger zone, to which it was linked by 100 meters of rubber pipe. As the drilling progressed, three drill-bits of different lengths had to be used. Up to six workers could be required to hold the machine and exert enough pressure for the bit to penetrate the rock, while another worker held the bit in his bare hand to direct it into the hole. A lever that had to be operated intermittently stopped the drilling and released a powerful stream of air into the hole to clear it of rock dust. Sometimes, the bit would get stuck, so that work would have to be interrupted for a time to release the bit with the help of a hammer and wrench. Drilling one hole generally took between 10 and 20 minutes depending on its depth, the hardness of the rock, the position of the drillers, and whether or not the workers had to look out for falling rocks or be careful not to slip down the cliff. For anyone standing less than three meters away, the noise was deafening and unbearable; the vibrations in the soil could be felt up to 20 meters away, shaking the whole rock face; and the operation sent up clouds of dust. Despite this, the workers were equipped with only minimal protection: a helmet, a scarf over the mouth to prevent dust from entering the lungs, and a cheap pair of sunglasses to protect the eyes from dust.

Before the drillers had finished, the blasters would start filling the holes with explosives—five sticks (600 grams) for a small hole, and up to 16 sticks (2 kilograms) for a 10-foot-deep hole—pushing them in with a wooden stick until each hole was full. All the holes were then connected by a green gunpowder wire, while the last hole was connected to a fuse and lighting wire: 50 centimeters allowed a one-minute lapse between the ignition and the explosion. When everything was ready, everyone vacated this theater of operations, except for two blasters who stayed behind. When we observed the scene from a distance of 300 to 400 meters, everything seemed silent. Far away, we could see the two blasters running in our direction to find shelter behind the compressor. For another 20 seconds, nothing happened. Still silently, a sudden, violent burst of rocks and dust erupted horizontally from the cliff, drawing a vertical asymptote as stones

were gradually drawn by gravity toward the river below. Only then, 1.5 seconds later, would a thundering explosion shake the whole gorge, resonating deep inside our bodies as small stones and sand started falling from above us. At the same time, as more and more stones became detached from the face of the explosion site and fell into the river, a large cloud of dust would rise up toward the sky, obscuring the valley and spreading the smell of gunpowder. Sometimes, a second landslide, even bigger than the first, might follow, as the rock face, weakened by the explosion, collapsed, taking down with it everything in its way. This is why the biggest blast usually took place at the end of the day so that the stones would fall at night when nobody was onsite.

After the explosion, the place had to be prepared for the next blast. Drillers and around 7–10 helpers had to clean the site, throwing rocks down the cliff with the help of picks, bars, and shovels and sometimes pushing stones forward with their feet or hands while a colleague loosely secured them by holding onto their shirt collars. If the platform was wide enough, then a bulldozer could be brought in to clear it all in one go, although the vibrations of the tracked vehicle often provoked further rock falls from above. The cliff face above also had to be cleared of loose rocks, for which long rods were used; or Thinle and other Sherpas would climb up and try to detach the biggest and most unstable elements. Yet this kind of terrain could never be totally cleared, and one could never be sure that the face would not crumble at some time or another.

It was fascinating to see how workers—especially drillers—managed to deal with danger on a daily basis. They could not avoid it, and so they seemed to try and tame it, often with the help of their gods. I once discussed this with Thinle:

Are you less afraid now?

Everybody prays to their gods in the morning; there is a small temple up there. We pray to our own gods.

How is the work compared to what you expected?

It's OK. The only fear is that we might die. Otherwise the work is not difficult.

In May 2007, Thinle and the others went back to drilling following a blast in which a whole section of the mountain collapsed. One of the drillers—Shanta Bahadur—was killed on the spot, while another was injured. Thinle, who had been standing just next to Shanta, was miraculously safe. When we talked about it, Thinle was trying to understand. That morning, Shanta had told Thinle that he wanted to quit his job in Chilling and go back to Delhi to a safer job, even if it paid less. “Why him and not me?” said Thinle. “He also respected the gods. Perhaps he didn't believe sincerely.”

Prayers and faith were often the only protection that workers had: as they often put it, “Everything depends on the mercy of God(s).” In Chilling, the day always started with a *puja* (prayer ritual), for Hindus, Sikhs and Buddhists alike, at home and/or at the small Shiva *mandir* under the cliff where representations

of Shiva, Hanuman, Durga, and Guru Nanak were displayed (the temple was built where the four workers had died in August 2006, and was completely washed away by a landslide a few months later), and more especially at the old Lamaguru sanctuary where Thinle would pray. A *puja* to Vishwakarma was also carried out on bulldozers and compressors, which were all marked with an “Om.” On the helmets of the drillers and helpers were painted the words “Om nama Shiva” or “Jai mata di,” tridents as symbols of Lord Shiva, or the words “God doesn’t forgive the sinner” or “If you want to take me, ask my boss first.” Engineers also took part in the *pujas*, paying their respects to the gods before starting work, washing their feet, prostrating, lighting incense, and ringing the bell at the *mandir*. Builders sometimes built small statues of Durga in the walls, using the remaining cement, and inscribed “Jai Ma Kali” in the fresh concrete.

Yet people carrying out the most dangerous tasks, such as drilling, seemed to defy danger. It was very common to see them standing on the most unstable rocks at the cliff’s edge, quietly rearranging their scarves and helmets. During breaks, a common game was to throw stones at each other’s helmets or at the cliff just above somebody who was sitting down or napping, initiating small rock falls: the person lying underneath had to stand up quickly and jump aside to avoid being scattered with rocks. It was also common to see two or three workers “clearing” unstable cliffs by throwing stones at huge rocks above them with diabolical precision—causing rocks and soil to fall—while they could have done it more efficiently and quickly with a long iron rod. At the end of the day, everyone jumped into the back of the tipper; as it drove dangerously fast along the edge of the cliff, one had to bend down to avoid being injured by overhanging rocks, while the youngest drillers would push each other and simulate falls. When Thinle and his companion Karma were clearing the slope, the whole scene looked like a ballet as they gracefully danced along the cliff, ignoring the 70 or 80 meters of emptiness below them. There was no sign of fear as Thinle proudly cried out “Sherpa!” to designate his friend: Thinle was a Sherpa too, and they did not fear the void. There seemed to be an excitement about danger. As Thinle put it, the job was not difficult: the only risk was death. Although they were perfectly well aware of the danger, they did not flee from it. Perhaps because the risks were unavoidable and largely unpredictable, workers often seemed to play with them, taming danger and relying on the mercy of the gods rather than attempting in vain to avoid danger.

If the drillers were most at risk, the danger did not spare other workers and family members either. It affected them in a different and more insidious way, putting them at risk of losing someone they loved, who was often also the main breadwinner of the family. After the accident of May 2007, “safety measures” were adopted. Somebody would look after the drillers and blow a whistle if rocks started to fall. The measure seemed of little use because the noise of the drill would conceal the sound of the whistle. Mingmar became the “whistle blower” while her father was drilling: “The work is easy. I just have to carry the

water and blow the whistle”; but “Drilling is dangerous; I fear for my father. Stones can fall at any time.” Zangmo too feared for Thinle. At 4 p.m., in what had become a daily ceremony, Zangmo and her neighbor Kamla would wait outside their shelter, scanning the end of the road, anxiously waiting for the truck that would bring their husbands and children back to the camp.

The last time I saw Thinle and his family was in January 2008, before I left Chilling for Leh in the back of a tipper with two Bihari road workers who were freezing to death in their cotton trousers, acrylic socks in plastic flip-flops, and torn woolen gloves. I hoped I would meet Thinle some day when he and his family had returned to Nepal, but it was not to be. In October 2008, I received a message from a friend who had just returned from Chilling, bearing bad news. At the end of September, just after an explosion had occurred, Thinle and three other workers returned to the site to inspect the work of the blast, when a freshly destabilized section of the mountain collapsed. The other three workers just had time to flee, but Thinle, who was behind them, was hurt when a stone struck him on the head. He was brought unconscious to the hospital in Leh in a BRO tipper and pronounced dead three days later, on October 1, 2008.

### THE WIDER FRAMEWORK

Leaving aside the ethnography of road workers, let us attempt to understand the larger social matrix in which this ethnography is embedded. The story of Thinle and his family is unique, but some of its features correspond to patterns that are common to many road workers’ stories in Ladakh. There are probably many Thinles and Zangmos whose stories remain undocumented. The stories of Nima Dorje, Shanta, Doma, or the four Jharkhandi workers who died in the summer of 2006 would also have unveiled “some of the mechanisms through which large-scale social forces crystallize into the sharp, hard surfaces of individual suffering” (Farmer, 1997: 263). As seen in the story of Thinle, several factors can help us understand the conditions that drive migrants to work in road construction, and make them accept work as drillers and endure intolerable risks. None of these factors is explanatory on its own: rather, it is the cumulative effect of the political, social, and economic forces that structure the risk and might help us explain the situation of road workers, their willingness to endure risks, and the incidence of “structural violence.”

The first factor mentioned in Thinle’s story was the situation in Nepal, which has a long history of labor outmigration: estimates of the number of Nepalese working in India vary between 250,000 and 1 million (Seddon, Adhikari, & Gurung, 2002; see also Seddon, 2011). The situation was further exacerbated by the civil conflict of 1996–2006, which drove many people who faced threats and could not make a living in Nepal out of the country. This was a common feature in the stories of other Nepali migrants in Chilling.

A second factor that had aggravated Thinle's situation was the precariousness of work. After they left Nepal in 2003, Thinle and his family worked in eight different locations in less than five years. Often, the work was temporary, and once the work was finished they had to look for another source of income. If labor demand in Ladakh is high in summer (due to tourism and agricultural work), it is low during other seasons and nearly nonexistent in winter, when it is too cold for construction work and the whole economy comes to a standstill. In two locations, their employers cheated them out of the full amount due to them. This set of circumstances led many migrants to work for BRO, where at least they received their full wage on a monthly basis and all year round.

A third factor was the limited amount of bargaining power and the narrow margin of maneuver that Thinle had, due to economic as well as institutional factors. When he came to Chilling with his family, he needed to work. He did not want to be a driller, he was scared, he had no experience of drilling, he had heard of accidents occurring, but it was the only job he was offered. Most drillers were in a similar position: they were traveling with their families, had limited resources, and had to work to provide for their needs. This made them accept short-term contracts and dangerous jobs such as blasting and drilling. Thinle's family shared their shelter with another Nepali family: Preeti Bohra, his wife Kamla Devi, and their two sons, Buddhiram and Harida. Both the father and the elder son (16 years old at the time of the interview) worked as drillers, while the mother worked at night as a guard. When I asked Kamla why they had come to Chilling, her answer was: "Anyway, I have to work because I have to feed my family." When they arrived in Chilling, they had nothing and had to borrow Rs3,500 from Thinle's family in order to survive during the first month.

Workers' bargaining power varies greatly. It depends partly on their family situation, since people with dependents are less mobile than those without, and cannot easily refuse a job or stay unemployed for long, but it is also determined largely by their status. ICPL workers are relatively free to refuse dangerous tasks. When I asked an ICPL worker, a male without dependents, whether he would agree to drill, he answered: "I'd tell them to go to hell and I'd run away." As a BRO medical officer once told me: "BRO is more careful with ICPL [workers]: we are responsible for them." ICPL workers are seasonal migrants recruited in their region of origin; they arrive as a crew and are hired on a collective contract for a fixed period (four months in Ladakh), during which they cannot be laid off, and at the end of which their transport back home is paid for by BRO.

There was one occasion on which ICPL workers went on strike successfully because BRO did not provide them with enough water in the mornings. They also went on strike after the accident of August 2006. CPL personnel, I was told, could never do that, as they might easily be discharged.

However, the working conditions of BRO workers are by no means unusual in the world of road construction in India. Although laborers who work for civilian companies and contractors are not prohibited from forming associations,

their situation is far from compliant with the legal standards set by the main national regulations such as the Contract Labour (Regulation and Abolition) Act 1970 and the Payment of Wages Act 1936. Despite claims to the contrary, a study commissioned by the ILO in 1996 found that “hardly any worksite” complied with the requirements set by the ministries of labor and health with regard to minimum wages, gender equality, child labor, drinking water, toilets, shelter, and first aid (ILO, 1996). The situation was hardly better when workers were employed by local government agencies. The study also mentions the conclusions of the Working Group of the Planning Commission, 1995, which point to serious violations of labor standards at the same time as they reveal a lack of interest in seeing the labor standards applied:

As of date, nearly a score of labour laws are applicable to construction sites all over the country. . . . The fact, however, is that none of these laws is implemented or followed even in its essentials. The primary reason seems to be that the laws themselves have little relevance to the realities of construction business and logistics of construction sites. (ILO, 1996: 25)

Similar reasons were cited when I visited the Labour Department in Ladakh in 2009: as the person in charge explained to me, “The Labour Department is not very active.” People are posted to this department for only a year or two and therefore do not bother to learn the job or the relevant laws since they are there for such a short time. There is only one labor inspector for the whole district, and labor inspectors can easily be bribed when labor standards are violated. Most of all, as the person in charge told me: “Our labor laws are very strict, but if every law was implemented, contractors could not work in this country. Even BRO wouldn’t be able to work.” Hence, while rules exist, they are not implemented, and therefore, in the end, workers have no legal protection.

As this examination shows, the limited amount of bargaining power that workers—especially CPL workers—have is due to two sorts of factors: personal factors, such as family situation, resilience, and financial capacity, but also institutional factors. Such factors, whether legal (as in the absence of the right to form an association) or linked to inefficient protection mechanisms, contribute heavily to maintaining workers’ vulnerability. They also fail to diminish the risks incurred by road workers, and they prevent workers from asking for safer and better working conditions. This might be aimed at “producing relative efficiency,” as the director of BRO put it—although this is far from proven—but the result is that it fails to provide real benefits to workers and their families.

A fourth factor that is important to an understanding of Thinle’s situation and his enduring acceptance of risk is the high cost of living that workers face while living on the road. In 2007, monthly wages were Rs3,000 and Rs3,700 for simple labor (for summer and winter, respectively), and Rs3,200 and Rs3,900 for a driller, which is high for India but slightly lower than what workers could expect for doing a similar job in the civilian sector in Ladakh. Yet, with



BRO, wages were paid all year long, even in winter when employment opportunities are scarce. As migrants had no access to rations at subsidized rates, they had to bear the heavy cost of food and fuel for heating: about Rs3,500 a month for a family and an additional Rs700 a month for kerosene in winter. For many road workers, the cost of living was simply too high. This was also the case for ICPL workers, who, in addition to being exploited by the company, had to cope with exploitation by the *mate*, who would charge them a high price for the food they consumed and for any item they could buy through him (mostly soap, toothbrushes, alcohol, and *beedies* [herbal cigarettes]). When adding other expenditures, ICPL workers could hope to save only a maximum of Rs4,000 to Rs6,000 in four months; this was just enough to provide for family expenses until the following spring, when they would migrate again to work for BRO.

Moreover, their meager savings were often used up in health-related expenses, and sometimes in gambling and drinking or in supporting relatives back home. Those who managed to save often did so because they did not depend solely on a single road worker's wage but earned multiple wages and sold *chang*, *raksi*, or commercially manufactured items, as in the case of Thinle and his family. Some workers also managed to save because they were involved in corruption networks with BRO officials, selling diesel, rations, equipment, and construction material, or were very skilled at playing cards, which could rightfully be considered a livelihood activity in Chilling. Corruption is quite widespread on the road, according to the workers I interviewed, and only a few cases are reported in the press. Workers cited several cases in which they had directly observed corruption or in which quantities of working material, rations, and fuel were not monitored and disappeared. In Zanskar, for example, the BRO camp is the only available source of diesel in the whole valley and is notorious for providing diesel to other inhabitants. Corruption was also clearly evident in the quality of the construction of buildings and retaining walls: because the ratio of cement to sand is too low, pieces of wall break off if rubbed by hand, and walls have to be rebuilt after two years. To a large extent, corruption benefits officers, but it also necessitates the help of workers in making the material available and carrying it to external buyers. Workers who had won the confidence of officers and were involved in such operations could earn a hefty amount from corruption, often twice their wage.

Thus, on one hand, the high level of expenditures in comparison to low wages keeps workers vulnerable and dependent on the company. On the other hand, other possibilities of gain explain why many workers who want to quit their jobs eventually stay longer as they are earning more than they might in most other jobs. But there are few people in this category. A parallel can be drawn with the camp system that supplies the workforce for South Louisiana's offshore oil and gas industry, whose existence is "driven primarily by the marginality of the workers" and depends on the reproduction of "the continuities between work and poverty for [a] marginalized underclass" (Higgins, 2005: 12). Migrants working for BRO are small peasants at home, partly self-sufficient and partly

integrated into market relations. Working on the road provides them with a means to meet the basic needs of their families but not more, as potential savings are sucked into diverse expenditures, living costs, payments to the *mate* and officers (particularly during the recruitment process), alcohol consumption, gambling, and so forth. As their gains remain marginal, in the end, many workers are left with little choice but to migrate to other construction sites and continue working for the company, so that BRO benefits from a limitless pool of construction workers.

A final, decisive factor is the dangerousness of the task itself and the widespread view that casualties are unavoidable in road construction in difficult terrain (see, for instance, Tan [1945] on the Burma road or Ispahani [1989] on the Karakoram Highway). As BRO proudly states on its official Web site:

Let us not forget that roads in this difficult terrain have been built not only with mere cement and concrete, but also with the blood of men of the Border Roads Organisation of India. Many lost their lives for the cause of duty on the project. To these men, who always play with danger and laugh at death, duty comes first.

I was often reminded of this view by BRO officers. As a BRO supervisor once put it: “Because it [the road] is built for defense, it has to be completed. For every worker who dies, BRO will recruit 50 others.” Casualties were truly seen as inevitable: they did not even seem to enter people’s calculations in the decision to build bridges or whether or not to avoid a dangerous area; if they did enter the calculations, it was only in terms of compensation. As an engineer said: “Accidents can happen. But roads are more important for the army and to develop the country. Road construction accidents happen anywhere.” Casualties were seen as a price to pay, and it seemed that some people had to be sacrificed for the road. In the business of road construction, death becomes normalized.

This factor was aggravated by the choice of construction methods and the necessity of building the road in the allocated time. After an explosion, the surrounding cliffs are seriously weakened, so that the worst rock falls generally happen not during the explosion but minutes or hours later and at a time nobody can predict. The pace of construction lagged behind the targets set and the road had to be built quickly. As a result, workers had to start drilling right after explosions while the rocks were still unstable, the rock walls had not been cleared properly, and only ineffective protective measures (such as blowing a whistle to warn drillers of rock falls) were in place. Most accidents happened in such conditions; inevitably, more will happen until the road is completed.

Chilling in particular is known among workers as a dangerous place. Many workers have died there, although it was impossible to obtain exact figures. Many rumors circulated among workers, stories were transmitted from one worker to the next, and the figures given by the company itself were inexact. When I arrived, I was told by a BRO staff member that 13 workers had died in one year in the 1990s, forcing the PWD to stop construction. Yet these figures were never

confirmed by the inhabitants. On the contrary, in Ladakh, accidents that affect migrants are quickly forgotten and erased from collective memories. During my fieldwork in Chilling from August 2006 to October 2008, seven people died in four separate accidents. Two of these casualties were not recorded by BRO, and there is evidence from the body count published in its monthly newsletter that many CPL casualties are not even disclosed. In 2002, an article estimated that “at least” 124 lethal accidents had affected BRO workers in Ladakh over the previous 15 years, a figure that is probably far below the reality (Sharma, 2002). In 2010, the Indian parliament expressed its concern regarding the high fatality rate among BRO workers: nine fatalities every 10 days or 330 fatalities every year, “which is higher than the fatality rate of any army battalion in J&K” (Press Information Bureau, 2010). BRO’s regular employees also die on roads, but the majority of fatalities are casual workers, most of them migrants.

These are some of the factors that affect most migrant workers living on the road. They help us understand the presence of migrant workers on the road, the risks they are subjected to, their acceptance of these risks, and ultimately the violence they confront. Working and living conditions also explain why road construction, despite being presented as a development tool aimed at providing employment and redistributing income, actually fails to benefit workers. In Chilling, workers were kept in a situation of precariousness, their bargaining power limited by personal and institutional factors, their gains insufficient in relation to high living costs, and the tasks assigned too dangerous. Most workers did not manage to save anything, so that their well-being improved only temporarily or marginally, or stagnated. Thinle’s family was one of the few for whom I had hope, because they had managed to save and had plans to leave Chilling, but this hope vanished with the death of Thinle.

### **CONCLUSION: A SEARCH FOR SOLUTIONS**

Paradoxically, whereas one of the alleged purposes of road construction is to provide employment, generate livelihoods, and alleviate poverty, the case of migrant workers on the Zaskar Highway shows that they see no improvements or only marginal improvements in their well-being. The reason for this, I argue, is that their agency is constrained by exploitative conditions and structural factors that in many cases prevent them from benefiting from the redistributive effects of road construction. However, this does not need to be so. Road construction could truly be used as a poverty alleviation tool, and the exploitative conditions and structural factors I have identified also enable us to point at potential means to improve the lot of this category of workers.

Through the life history of Thinle and the experience of other workers, I have identified five main sources of vulnerability. The first one was the situation in Nepal, and the country’s long history of labor outmigration. The idea here is not to consider “migration” as a problem in itself: not all migrations are distress

migrations, migrations are often motivated by factors other than economic, and as Ellis (2003) writes, mobile populations tend to be the norm in human history rather than the exception. Yet it is also evident that for most workers, the situation in the country or state of origin appears as one of the main reasons to migrate. For Nepalese, migration was often motivated by civil war and its economic consequences. Among workers from Dumka, the main reason cited was economic and had to do with the absence of livelihood opportunities in Jharkhand. Jharkhandi workers were aware of the fact that the company recruited workers in the state because it was poor, badly governed, and corrupt; they wished the central government would spend as much in Jharkhand as it did in J&K. Migration was often a consequence of political instability and underdevelopment. As many workers told me when asked what could be done for them: “if you want to do something for us, do it at home.”

The situation in these two regions is eminently complex, and attempting to solve the problems of Nepal and Jharkhand is clearly beyond the scope of this article (and beyond my ability), but one can see in the Indian National Rural Employment Guarantee Act (NREGA) an interesting embryo of a solution to rural underemployment. Since 2006, the act has been providing a guarantee of 100 days of employment per year to rural households at a minimum wage in the states in which it has been implemented. It mainly targets rural unskilled manual laborers and households living below the poverty line, by creating employment locally when labor requirements in agriculture are low; at the same time, it creates productive assets (notably roads, irrigation ponds, dams, etc.). The program also encourages people’s mobilization and informs workers of their rights. Naturally, the implementation of NREGA has its shortcomings (see, for instance, Sjoblom & Farrington, 2008), but there also seems to be evidence that, thanks to the scheme, “wages are rising, migration is slowing down, productive assets are being created, and the power equations are changing too” (Drèze & Khera, 2009: 3). The scheme largely benefits the most disadvantaged households, enabling them to avoid migrating for work, to cope with illness, or to send children to school. Hence, NREGA appears to be one potential solution: by increasing employment possibilities it would decrease distress migrations, leaving workers better informed of their rights and in a stronger position to negotiate their wages and employment conditions. And evidence shows that the scheme creates labor shortages for the BRO, “depleting BRO’s traditional labour pool” and making workers reluctant “to leave their villages for the gruelling manual work involved in building border roads” (Shukla, 2011).

The second and third factors identified in the article were the precariousness of work and the limited amount of bargaining power and narrow margin of maneuver workers have, which contribute heavily to maintaining workers’ vulnerability. This is due to two sorts of factors: personal and institutional. Precariousness of work and a limited amount of bargaining power is often the lot of migrants, who are not necessarily informed of their rights, do not know where to go to complain,

and have no political representation, in contrast to local workers. Also, they are often hardly considered and cheated. In the case of BRO workers, the situation is worsened by the interdiction against forming associations, the absence of political rights, the lack of trade unions and the instances of control, the inefficiency of the labor office, and the fact that labor regulations exist but are not applied. Realistic labor regulations should be adopted with the aim of having them implemented, and labor conditions should be monitored.

The fourth factor was the high costs workers have to bear while living on the road. Wages are low in relation to living costs, gains are sucked away in expenditures, and the situation also contributes to the maintaining of workers in a vulnerable position and in a situation of dependency vis-à-vis the company. Workers mentioned that their wages were too low given the tasks and risks involved and the cost of living. Low wages also result in resources being wasted: if workers were better paid, human resources would be more efficiently employed. Also, promised rations should be delivered, along with better housing and better living conditions for the workers and their families. When asked what should be done, workers mainly revealed their anxiety about their children, as they did not want the children to suffer as the parents did. Schools (or transport to village schools) and childcare are needed, especially when young mothers are forced to work on the road in order to make a living. But for living and working conditions to improve, once again the immense “casual” workforce of BRO should be allowed to organize itself politically, and the situation of casual workers should be regularized. Presently, the situation is in the balance: that the Supreme Court raised the issue in March 2011 and denounced BRO’s “unfair labour practices” may be received with a lot of hope (“SC chides Centre,” 2011; Venkatesan, 2011); that the central government has endorsed BRO’s labor policies in a case that has been pending since 2001 appears less promising.

The fifth factor was the dangerousness of the task and the view that casualties are unavoidable in road construction. Given the nature of the work and the type of environment found on the Zaskar Highway, casualties are inevitable. However, many could be avoided. Inexperienced and untrained workers are sent into dangerous situations, without proper equipment, in which survival depends merely on luck. Training and equipment could be provided; simple mountaineering techniques could be used to secure workers and clear slopes before drilling; when the slope is too unstable, tunneling techniques could be employed; and when accidents happen, proper medical facilities should be provided. These could significantly reduce the rate of casualties on the road.

This article has largely been organized around a central paradox: roads are built in order to provide employment, but working conditions tend to perpetuate a situation of precariousness, dependence, and exploitation, so that workers do not benefit from road construction. I hope the article has shed some light on the reasons for that paradox. When I point to certain factors and label them as *structural*, I do not want to sound fatalistic: the agency, ingenuity, and sense of

solidarity that prevail among most workers should be trusted. But to enable workers to develop their full potential and to use road construction as a real development tool, fair conditions should first be set in place. A great deal could be done: first, to reduce the workers' suffering; and second, to ensure they also benefit from road construction. I hope this article has also made a contribution to the search for solutions.

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