



Toward a theory of local legitimacy by MNEs in developing nations: Newmont mining and health sustainable development in Peru

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ABSTRACT

This paper describes a current initiative by Newmont Mining Corporation (Newmont) to develop sustainable community benefit in communities around its mining operations in Peru in response to heightened criticism of Newmont by non-government organizations and the media. Using anthropologically oriented methods, a community health assessment project in an area of projected mining is described in detail in this paper. This case adds to London and Hart's social embeddedness strategy for multi-national enterprises (MNEs) working in developing nations by introducing a locally-based community interaction model, which we describe as a local legitimacy strategy, in an effort to bring about sustainable development in the communities that surround a MNE's production activities. The components of our local legitimacy strategy include co-analysis of community needs by MNEs and community partners, and planning and investment in developments to enhance the social fabric and the physical infrastructure needs of communities. The developing world is getting better at publicizing and monitoring the work of MNEs. We argue that it will be increasingly necessary for MNEs, like Newmont, to add local sustainable benefit into their strategic mix to gain the social license and legitimacy that is needed to operate in poorer communities.

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1. Introduction

This paper is an exploratory examination of the theoretical dimensions of multi-national enterprises' (MNEs) involvement in poorer population areas of the world. As such, the research questions of this paper are “why do MNEs seek local legitimacy in developing economies?” and “how do they do so?” To date, the lack of interest in developing nation economies has led to a transnational model of global strategy, which is pre-occupied with describing strategies that seek to overcome the lack of a Western-style business environment (Peng, 2001). That is, to the extent the local environment includes features inconsistent with what is typical in developed economies, an MNE will implement strategies to “fix” those features. A transnational model suggests that MNEs generally rely on proven global capabilities to adapt existing business models, such as a subsidiary strategy to control resources, extract knowledge and leverage economies of scales (Bartlett and Ghoshal, 1989). Also, MNEs are accustomed to creating competitive advantage through patents, brands and contracts and are wary of entering emerging markets where their proprietary technology and knowledge cannot be protected through enforceable legal mechanisms (Delios and Henisz, 2000). In effect, this paper argues that the transnational model needs to be amended to allow for a hybrid approach that balances local and global

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strategies by MNEs. Alternatively, a social embeddedness strategy model for MNEs in developing nations has been introduced (London and Hart, 2004). Social embeddedness is defined by London and Hart as the ability of MNEs to create competitive advantage based on a deep understanding of and integration with the local environment. This capability involves the ability to create a web of trusted partnerships with a diversity of organizations and institutions, generate bottom-up development and understand, leverage and build on the existing social infrastructure.

What the case of Newmont in Peru adds to the social embeddedness construct is the extent to which MNEs are reaching out to gain legitimacy in the local communities in which they are working. London and Hart's social embeddedness construct describes, to a greater extent, why MNEs should to take a bottom-up local partnership approach to move their products in emerging economies. The Newmont case, however, isn't about moving product into new markets (Pralhad and Hammond, 2002). This case is about providing sustainable benefit to poor local communities in exchange for the minerals that Newmont is extracting out of the ground for trade on global markets.

This is a remarkable development. As described in detail in this paper, community protests and pressure from NGOs have compelled Newmont to finally consider the welfare of the community. Beyond just providing jobs, Newmont must now convince the community that it can and will provide benefits that offset the environment and social externalities of mining. Newmont has begun to enter the realms of health services development in the communities surrounding its mining sites. To assist this effort, Newmont engaged an independent team of health experts and social scientists from the University of Colorado to visit communities around Newmont's mining sites in Peru and make recommendations as to what actions Newmont could take to improve health conditions in those communities.

Newmont's foray into the development of the health sector is not the only example of extractive resource MNEs attempts to improve health conditions. Anglo-Gold and other mining companies in South Africa have funded and provided anti-retroviral therapy for their workers with HIV. In Mozambique, BHB-Billiton began treating its employees for malaria, but soon realized that public health efforts, in coordination with local government, were necessary to effectively address the disease in its workforce. In Papua New Guinea, Freeport-McMoran launched community-wide treatment for lymphatic filariasis to decrease the impact of this debilitating disease on its workforce (Gifford et al., 2007). The Newmont case in Peru, however, is unique in that the organization did not enter the health arena as a response to employee productivity losses. Instead, Newmont discovered that social license and legitimacy were becoming necessary inputs to its mining operations. The defensive strategies of environmental and social impact assessments alone, and ensuing mitigation efforts, were failing. Addressing health in a health-service shortage area, alternatively, represented an attempt at a proactive investment by Newmont to secure long-term legitimacy in the community.

As Newmont has learned, and non-government development organizations have long known, any social investment requires in-depth knowledge of the community, extending far beyond the demographics of the employable workforce. This realization is the basis for this paper's presentation of a community health assessment case study. We suggest that such assessments will increasingly become the norm as extractive resource MNEs encounter organized community resistance to the development and operation of mining sites in the developing world. More broadly, we argue that the case of Newmont in Peru is an example of a changing equation where mutual benefit will be a new goal and standard for MNEs in developing nations.

Because this case study attempts to address complex phenomena and thus requires a rich, holistic understanding of conditions, our approach is primarily qualitative and includes extensive contact with participants throughout communities and at multiple organizational levels. Also, our data gathering includes extensive use of archival and supplementary data sources. In presenting this study, we first outline the unique challenges for Newmont associated with its mining work within poorer population areas of the world. We then review the international business approach. Unlike similar institutional theory-based research, this paper suggests that Newmont's attempt to gain local legitimacy at its mining sites is expected to be a key element for its success in the global marketplace. The paper concludes with a discussion of the analysis results, limitations of this research, and possible new research directions.

1.1. Responding to NGOs' scrutiny

The fact that the developed world comprises 20% of the world's population, yet uses 80% of the world's resources, shows that the world is not flat yet, to use an expression of a popular recent book on globalization (Friedman, 2005). For example, it is estimated that almost 60% of the world's six billion people live on less than \$2 (US) dollars a day (World Bank, 2001). To a great extent, these poorer populations have not seen the benefits of the globalization of markets. Yet, the areas where poorer populations live in the world have and continue to serve as a very important component in the development of globalization because they often provide the raw materials and labor for extractive industries like oil and mining that drive the globalization process.

In the past, the poor of the world have had little voice, and much of the developed world has had little understanding or appreciation for the plight of the poor. However, with the advent of the internet and the globalization of mass media (Smith, 2007), as well as the proliferation of goodwill-oriented organizations such as NGOs (e.g., CARE), foundations (e.g., Bill & Melinda Gates Foundation), service clubs (e.g., Rotary International) and government aid workers and individuals, the tables have turned. The developing world is now able to monitor and publicize the work of MNEs, and it will be increasingly necessary for MNEs to add local sustainable benefit into their strategic mix to gain the social license and legitimacy that is needed to work in poorer communities.

Newmont, and other gold mining firms, are key actors in globalization with their international operations and the sale of their products on worldwide commodity markets. Yet, these firms have come under heightened public criticism in recent years. The communities around mining operations not only tend to be poor and vulnerable, but also often lack government protection, and

the environmental and economic changes wrought by MNEs eventually affect health and society in areas of operation. Accordingly, questions have been raised concerning MNEs' social and environmental performance in emerging economies (Meyer, 2004).

Some argue that MNEs have a human rights obligation to affected communities, which extends to health, education, and the environment (Sullivan and Frankental, 2002). For example, the health, social, and environmental impacts of mining MNEs cannot be considered in isolation from one another or from an MNE's overall corporate strategy (Caplan and Silva, 2005). Social critics argue that MNEs often elude public policy controls. In seeking to reduce costs, MNEs may play employees and countries against one another, creating downward pressure on wages and social standards on a worldwide basis (Dowell et al., 2000). Also, developing nations typically have less sophisticated market-supporting institutions and legal and regulatory capabilities. Inefficiency and corruption often prevent governments from effectively managing the external costs of industry and the resulting costs to society (Warner and Sullivan, 2004).

MNEs can play a pivotal role in linking rich and poor economies and in transmitting capital, knowledge, ideas and value systems across borders. Foreign direct investment (FDI) by MNEs has motivated many governments to offer attractive incentive packages to entice these corporations to their countries. The rationale is that the social benefits of inward FDI would exceed the social costs to a nation (e.g., pollution) of FDI (Blomstrom and Kokko, 2003). For example, a number of subfields have developed among management researchers regarding corporate citizenship (Waddock, 2004), business sustainability (Holliday et al., 2002) and corporate strategies in developing nations (Prahalad and Hart, 2002). Also, MNEs are increasingly being expected to consider the societal and environmental impact of their activities and to develop a more inclusive capitalism model (Hart and Christensen, 2002; Margolis and Walsh, 2003; Soros, 2002). Bansal (2005) found that government, media and public opinion play substantial roles in encouraging corporate led sustainable development. Further, many MNEs working in developing nations partner with NGOs and non-traditional stakeholders, such as local tribes, to develop social responsibility strategies (Rondinelli and London, 2003). An integrated local approach to economic development and poverty alleviation is especially important in low-income markets where economic, social and environmental considerations are closely intertwined (Chambers, 1997; Sen, 1999; World Bank, 2001).

2. Theory: MNEs and institutional change in developing nations

A good understanding of the role of MNEs in developing nations is a precondition for considering their institutional legitimacy. For example, should MNEs feel obliged to create positive, or at least non-negative, spillovers to the local economy? Research is beginning to suggest such. For example, Dowell et al. (2000) found that developing countries that use lax environmental regulations to attract foreign direct investment may end up attracting poorer quality, and, perhaps, less competitive firms. Also, Eskeland and Harrison (1997) found that MNEs are more environmentally responsible than their local competitors, and that a firm may find that moving downward from accustomed higher standards violates established corporate routines and is actually more costly. Christmann (1998) argues that adopting a single stringent environmental standard across countries, even when certain nations may have significantly lower environmental standards, is consistent with the pursuit of global competitive strategies by MNEs. By adopting higher environmental standards, it can be argued that firms will develop competitive advantage and create market entrance barriers to firms with lesser financial means, knowledge and capability. To date, research has focused on MNEs and environmental externalities, but the social and health status impacts of rapid industrialization are significant and often negative.

2.1. Global institutional change

Neo-institutional theory emphasizes the influences of the systems surrounding organizations (i.e., the organizational field) that shape social and organizational behavior (Scott, 1995). Organizations behave in accordance with this socially constructed reality because to do so reduces ambiguity and uncertainty. Over time, these shared understandings, or collective beliefs, become reinforced by organizational initiatives and community responses such as regulation, involving state agencies and professional bodies. Regulatory processes thus both disseminate and reproduce coded prescriptions and social reality. Deviations from such prescriptions cause discomfort and trigger attempts to justify and/or legitimate departures from the social norm.

Institutional processes may, for a time, give an organizational field the appearance of stability. Nevertheless, the appearance of stability is misleading because fields are not static, but evolving as organizations respond to pressures for deinstitutionalization. Oliver (1991) argues that firms can change their institutional environments by developing strategic responses instead of adapting passively. Thus, there is a need to not just understand the institutional processes in a firm's environment or, to put it another way, a firm's constrained strategic choices; but also to consider firms' active strategic choices (Oliver, 1991; Barney, 1991). Researchers have described numerous environmental changes which have led to a change in institutional norms, including "jolts" (Meyer et al., 1990), social upheaval (Zucker, 1986), technological disruptions, competitive discontinuities (Fox-Wolfgramm et al., 1998), or regulatory changes (Greenwood et al., 2002).

Over the past decade many MNEs have reacted to the increasing scrutiny of NGOs and the media by introducing corporate codes of conduct (Van Tulder and Kolk, 2001) and adopting new non-governmental systems of labor standards and monitoring (O'Rourke 2003) and environmental protection. Failure to comply with standards to which a firm has committed itself may severely affect the firm's reputation, and thus its sales and its bottom line (Spar 1998). Not all firms will respond to environmental pressures towards institutional change. However, it can be argued that leading firms in an industry, such as Newmont in the international gold mining industry, are more likely to respond to institutional pressures. Sherer and Lee (2002), for example, found that highly prestigious

law firms often initiate change within their organizational field, and that it is then incumbent on smaller, less prestigious firms to follow this lead.

Newmont Mining, for example, has received heightened scrutiny from NGOs, the media, and others in recent years. As one of the world's top gold producers, Newmont has been cited for a number of environmental problems, including a mercury spill in Peru and pollution from submarine tailings in Indonesia (Moore, 2006). The New York Times ran two front page exposes on the gold mining industry, with a focus on Newmont, and Newmont's alleged buy-off of Peruvian government officials for their mining operations in northern Peru (Perlez and Bergman, 2005; Perlez and Johnson, 2005). Likewise, the Public Broadcasting System ran a Frontline series in October 2005 that was critical of Newmont's mining activities in Indonesia and Peru. These incidents, regardless of contradictory assertions by Newmont and environmental groups, have resulted in public relation problems for Newmont and the international mining industry generally. As a result, Newmont is in a turnaround situation in an effort to gain social license to work at their mining sites in Peru and Indonesia. Today, Newmont is not just defensively responding but also proactively seeking local social license at newer mining sites, such as their site in west central Ghana.

2.2. *Local social embeddedness*

The transnational model of global strategy identifies global efficiencies, national responsiveness and worldwide learning as the crucial capabilities for a successful MNE (Bartlett and Ghoshal, 1989). This model focuses on MNEs' efforts at developing consumer models. Developing nations, however, should not be viewed as following a homogenous pattern of economic development in which all markets are evolving toward a more Western-style business environment. Although the wealthy elite in these countries may participate in global capitalism, the vast majority of the population has been excluded from this economic system (De Soto, 2000). As such, MNEs must develop relationships that enable them to better understand the social context of an environment that is local, diverse, dynamic, complex and unpredictable (Chambers, 1997; Dawar and Chattopadhyay, 2002; Hart and Sharma, 2004). Further, it might be more appropriate to develop separate strategies for wealthy, rising middle class, and poor customers across country markets (Hart and Milstein, 1999).

It can be especially difficult for MNEs to work in developing economies because social contracts, not legal, dominate relationships with governmental entities, at national, regional and local levels (Chambers, 1997). Firms without a capacity to appreciate and create social value or to become locally embedded in the social infrastructure that dominates low-income markets may struggle to overcome their liability of foreignness (World Bank, 2001). London and Hart (2004) offer an alternative to the transnational approach in developing nations. Their approach, which we label as social embeddedness, leverages the strengths of existing market environments in developing nations by developing relationships with non-traditional partners, co-inventing custom solutions, and building local capacity. Characteristics of a social embedded strategy approach including: scalability, flexibility, decentralization, knowledge sharing, local sourcing, and local entrepreneurship (pg. 367).

London and Hart's social embeddedness approach suggests that MNEs need to be open toward involving local partners as meaningful participants in projects. Partnering often means that MNEs will have to work and socialize with non-traditional partners, including NGOs, community groups, and even village and local tribal governments so projects fit local customs and culture (Hart and Sharma, 2004). For example, Andean communities have a long history of collaboration, where villagers collaborate voluntarily on community work projects, such as the building of a bridge or a new school (Bury, 2004).

2.3. *Theory development: local legitimacy*

A social embedded approach emphasizes local partnering by MNEs. These social investments are aimed at opening markets to an MNE's products. Newmont, and other extractive industry firms, however, have little or no interest in opening up product markets in developing nations. As such, these MNEs are interested in longer term, mutually beneficial relationships with the communities in their mining areas. These interests lead some MNEs, like Newmont, to make substantial contributions to infrastructure development. We argue that MNEs that get involved in such infrastructure development issues, which are outside of their core competencies, have clearly made a commitment to working on key issues as defined by local communities.

A project of the nature and magnitude of a new mining operation will place considerable strain on the existing physical infrastructure, and it will require the development of new infrastructure capabilities. Key community infrastructure issues in developing nations include clean water and sanitation, solid waste management, transportation and transportation systems, electrical systems, telecommunications networks, family shelter and public facilities such as schools, and the availability of health services. These issues are generally taken for granted by MNEs, which typically are based in industrialized nations that already have built-out infrastructures.

A new mining operation will provide new employment, training and educational opportunities, increasing annual incomes and the capability of local residents to work in ways other than in agriculture. However, the operation will disrupt the activities of local residents and irrevocably change the social fabric of the mining area, requiring extensive planning of social support interventions. For example, Newmont's mining operation in the Conga region of Peru is changing the local economy and cultural lifestyle away from agriculture. In such a setting, kinship relationships as well as an economic and social sharing of resources may break down, leaving vulnerable populations (elderly, children, disabled, disadvantaged women, unemployed) especially at risk. Also, community support may fade when the bulk of hiring and the contracting of procurements are completed.

Many other changes will come about from a new mining operation. Families in the mining area will be displaced, and other families may have to resettle due to inflation of housing costs. There will be an influx of new residents seeking employment

opportunities from mining operations and the peripheral industries that will develop. This influx and other social changes often lead to increases in prostitution, drugs, teen pregnancy, drunkenness, and crime. As a result, there may be a need for additional security and a police presence. Change from subsistence livelihoods will require money for management training and small and medium enterprise development. Also, there will be unfulfilled expectations for individual and family lifestyle improvements from those who don't gain employment opportunities. This could lead to decreased emotional well-being and could lead to alcohol abuse and increased incidences of family violence.

The introduction of mining into an area will also challenge traditional authority structures. As such, it is necessary for an MNE to partner and work with traditional authority structures to help them retain authority and credibility in their communities. By including input from civil society, local community groups, and the public sector, firms are better able to understand the social and business environments (Rondinelli and London, 2003). This capability involves the ability to generate bottom-up development, and understand, leverage and build on the existing social infrastructure.

2.3.1. Local legitimacy propositions

In an effort to gain local legitimacy in developing nations, MNEs will work with local communities to determine and develop key infrastructure needs. Components of such a local legitimacy approach include:

1. Co-invention and analysis of community needs and issues by MNEs and community partners,
2. Planning and investment in developments to enhance the social fabric of communities, and
3. Planning and investment in physical infrastructure needs such as water and sanitation systems, transportation, electricity and telecommunications networks, and education and health facilities.

3. Methods

This paper is an attempt to build theory through a rich analysis of the Newmont Mining in Peru case study. As described, there is a dearth of theory available to account for MNEs' strategies in developing nations. This is because the development of global strategy theory is at a relatively early stage and because until recently MNEs have given little attention toward entering developing nation markets (Prahalad and Hart, 2002).

We argue that a case study approach can prove beneficial toward developing testable research propositions. Likewise, Eisenhardt argues that a case study approach "is particularly well-suited to new research areas or research areas for which existing theory seems inadequate" (1989: 549). What is particularly important in this process is the need to craft theoretical concepts through the use of multiple data collection methods, including: qualitative and quantitative data, multiple investigators, and archival research. Using a variety of data collection processes can create synergy and ultimately lead to new theoretical concepts that emerge from the analysis process itself, rather than being specified a priori (Eisenhardt, 1989).

As described below, multiple investigators have used a variety of data sources over a couple years of research to develop a consensus of health and other infrastructure needs in Newmont's mining area in Peru. During this process, it became clear to us that current theories of global business strategy did not adequately address the phenomenon that was being witnessed in this case. This situation led us to the development of the local legitimacy theory concept.

3.1. Project background

Newmont commissioned the Center for Global Health at the University of Colorado Denver and Health Sciences Center (CU) to conduct a community health assessment in an area of projected mining, the Conga Area in the Cajamarca Region of northern Peru. There are 20 communities in the Conga Area, and the Cajamarca Region refers to the southern portion of the Department of Cajamarca in northern Peru. It is the area surrounding the city of Cajamarca. Mining already exists in the area, and the area has been identified by Newmont for significant expansion of mining operations. Much of the labor force would come from the local community. Thus, it is in the interest of Newmont for the community to be healthy and stable.

CU assembled a 6-member faculty team for the Conga mining area project. All of these team members have had prior work experience in Latin America and all speak Spanish. The composition of the team incorporated several areas of expertise, including: high-altitude medicine, neonatology, toxicology, healthcare management, tropical medicine, public health, community health and development, medical anthropology, family medicine, nursing, emergency medicine, pediatrics, women's health, and internal medicine. Before conducting its assessment, the team sought and obtained approval for the research from the Colorado Multiple Institutional Review Board. Also, it should also be noted that the first author of this paper was not on the Conga mining area health assessment team. The first author took the recommendations that were put forth by CU's Peru team and used them as data in this paper for an investigation of the local legitimacy concept.

3.2. Guiding principles

The CU team adopted several guiding principles for this health assessment project, including:

1. Adopt a long-term development perspective,
2. Use and strengthen existing organizations,

3. Invite community participation and prioritization,
4. Build credibility locally, regionally, and nationally,
5. Engage in true public–private partnerships,
6. Respect and protect community social structures,
7. Seek collaborative financing with governments, NGOs, foundations and others.
8. Use a broad definition of health. A broad definition of health permits integration with social and environmental considerations. According to the World Health Organization, health is not merely the absence of disease, but a “state of complete physical, mental and social well-being” (World Health Organization, 1948). Those who work in public health also recognize that health is “a dynamic condition combining individuals, society, and an adaptation to the environment” (Janzen, 2002: 4) and thus is affected by political, economic, social, and environmental conditions and not solely by the presence or absence of health care personnel, facilities, and programs. Such factors as the quality and quantity of potable water, patterns of waste disposal, sources of income and food production, and habits of daily living must also be evaluated to adequately assess a community’s health status.

3.3. Rapid assessment process

Given time constraints, the team selected data collection methods based on the Rapid Assessment Process (RAP), described by James Beebe (2001), for its applicability to a community health assessment and for its feasibility. The RAP, by definition, considers geographic, political and social environments, as well as health conditions. The utility of RAP is to “quickly develop a preliminary understanding of a situation from the insider’s perspective (2001: xv).” RAP was developed by individuals designing and implementing international development programs who found that successful programs must be based on partnership between the outsiders who control resources and the insiders who will ultimately implement the program (Beebe, 2001). A key element of RAP is triangulation, or corroboration with documents, informants, and other sources, external to the direct assessment. This element requires pre-trip planning and data review, as well a continued commitment to finding additional sources of information while in the field.

3.4. Document review methodology

In preparation for its field work, the CU team collected and reviewed documents from the following sources: 1) Internal Newmont documents 2) Colorado local press; 3) US national press; 4) Peruvian national and local press; 5) Websites of non-governmental organizations (NGOs) active in environmental health in Peru; 6) Scientific literature searchable through MEDLINE; 7) MINSA, the Peruvian Ministry of Health, and local/regional health departments in the Conga Region; 8) Google web-searches relevant to Peru, mining, Newmont, and health. In addition, the CU team inquired about and requested pertinent documents (such as internal reports from NGOs and local health departments) during all of its field interviews, as described below.

3.5. Interview methodology

“Experience has shown that health programs that fail to recognize and work with indigenous beliefs and practices also fail to reach their goals.” (Scrimshaw, 2001: 53). Accordingly, the CU assessments included both community insiders and outsiders to understand the cultural context in which areas of health interventions exist and have meaning. For example, interview sources included community members, healthcare providers and authorities, civil authorities, representatives of NGOs and community groups as well as government officials (e.g., the Ministry of Health), university faculty, and Newmont officials. Many of these interview sources were non-traditional. That is, they were not the typical partners with which an MNE, like Newmont, generally works.

The CU team spent two weeks in the field in June 2005, with site visits and interviews in all 20 communities targeted in the Conga Area, as well as site visits to 15 healthcare facilities in the Cajamarca Region, including two health posts in the immediate Conga Area and two larger referral hospitals. The RAP process was flexible in that the interview agenda was initially set, but also evolved over time in response to interview results.

Team members separated themselves to conduct interviews in Spanish of community members, healthcare providers and authorities, civil authorities, and representatives of non-governmental organizations and community groups. On all visits, team members were accompanied by Peruvian professionals with experience in healthcare or community development in the region. The visits to communities and healthcare facilities enabled direct observation of healthcare delivery, community activities, and the use and condition of available infrastructure. As part of the RAP process, the team and its Peruvian counterparts gathered every evening to share findings and engage in preliminary analysis and formation of research propositions, before forming a plan for the following day’s activities.

Twenty-six interviews were conducted in the 20 communities within Conga Area in 2005. The majority of interviews were group interviews, involving several members of the team and several members of the community. In all cases, Peruvian team members were present to facilitate the discussion. To the extent possible, female team members interviewed women apart from the men to avoid any potential for social inhibition. However, these “on the side” encounters were not logged as separate interviews. In all cases, the CU team’s semi-structured interview format queried respondents about the following issues related either directly or indirectly to health: common illnesses, perceived major community health issues, access to healthcare,

healthcare seeking behaviors, emergency evacuation plans, means of livelihood and community economic status, food and water availability, access to clean water and sanitation, prevalent cooking and, heating methods, access to schools, availability of telecommunication and transportation, and availability of electricity. In addition, the team asked participants about the perceived impact of the proposed mining activities on their communities.

An additional 35 interviews were conducted outside of the Conga Area in 2005, and the Peruvian team members, once again, facilitated the discussion. Interviews were conducted in the Cajamarca Region and in Lima, the Peruvian capital. Respondents included Newmont officials, civil society leaders, religious leaders, healthcare providers, and government officials. These semi-structured interviews touched on similar topics as those explored in the community interviews in the zone of influence, with the distinction of an emphasis on the macro forces and policies affecting health and development in the Cajamarca region and the whole country. Further, the CU team members conducted numerous on site follow-up interviews of the 2005 interview sources in January and July of 2006.

4. Analysis of archival data

4.1. Geographical context

The Conga Area is located in the department of Cajamarca in northern Peru, and straddles two provinces (Cajamarca and Celendín). The city of Cajamarca, capital of both its department and its province, has a population surpassing 200,000. Newmont's existing Yanacocha mine is located outside of Cajamarca and part of the way toward the Conga Area. The Conga Area is located approximately 2 h travel by unimproved road northeast of the Yanacocha mine, approximately 4 h from Cajamarca, 2 h from the town of La Encañada (population around 2000) and 3 h from the town of Celendín (population around 15,000).

The Conga Area of projected mining and the surrounding communities lie in the first range of the Andes Mountains, at an altitude between 2500 and 3800 m. Most of the communities are separated by deep river gorges, and the few roads in the area are unpaved and unimproved, requiring a heavy duty vehicle such as a truck. Some communities are only accessible by foot. Although distances between communities are deceptively small on a map or by air, the condition and geographical contour of the roads require that travel be calculated in terms of hours rather than distance, with the average time between any two communities at least 1 h by road.

The environment consists of alpine plateaus and sub-alpine valleys, with very few trees and primarily open grasslands. Average annual temperature is 6 °C, with occasional frosts at higher elevations. The valleys of the Conga Area are farmed, while the higher elevations serve primarily as pastureland. The climate is wet, with an average annual precipitation of 134 cm/year, although during the dry season (June–August) many of the smaller springs dry up. There are several small lakes in the Conga Area, and because the area sits on the crest of surrounding valleys, it contributes to the headwaters of four separate rivers basins.

4.2. Political context

A review of newspaper articles, Newmont documents, and website and other publications from environmental groups highlighted the oft tense relationship between Newmont's Peruvian subsidiary, Yanacocha, and the surrounding community. The communities around Yanacocha and NGOs have lodged a number of complaints, mostly centered on water issues, against the mine since its opening in 1992 (Newmont, 2005; Perlez and Johnson, 2005; www.grufides.org and www.nodirtygold.org).

One incident in particular has gained local and international notoriety. In June 2000, a truck operated by a contractor and carrying waste mercury from the Yanacocha mine to a coastal port overturned in the village of Choropampa. Many locals collected the mercury, thinking it had medicinal properties or that it contained gold. Approximately 1200 people were exposed, and 200 were hospitalized. A documentary film released in 2002, "Choropampa, the Price of Gold," highlights the suffering of the locals and is highly critical of Newmont (Guarango, 2002). Many from Choropampa attribute ongoing health problems to the mercury spill. Accusations against the mine include: that the mercury was not properly contained; there was inadequate oversight of contractors; there was a failure to take responsibility; there was a slow response to the spill; and, that medical treatment was offered in exchange for release of liability. Whether or not all these claims are justified, the reality remains that residents of Choropampa have suffered, and that Newmont/Yanacocha's reputation and credibility in the region were significantly damaged.

The repercussions of Choropampa and of disputes over water contamination are alive and well (Stratus Consulting Inc., 2003). Environmental groups in the region continue to engage in grassroots organizing against planned mining activities. In September 2004, large demonstrations in Cajamarca led Newmont/Yanacocha to back down from planned mining activities at Cerro Quilish, near Cajamarca. In October 2004, the mayor of Celendín, the administrative seat of the province comprising the majority of the Conga Area, declared the area to be an ecological reserve not to be touched by mining activities. To this date, negotiations continue toward a socially and environmentally acceptable mining plan for the Conga Area. On several occasions between 2004 and 2007, demonstrations and blockades related to grievances about the environmental, social or health impacts of the mine have blocked the major road to the Yanacocha mine, preventing employees and supplies from reaching the mine, and gold from leaving. One can assume that such work stoppages stemming from lack of social legitimacy do indeed affect Newmont's bottom line.

4.3. Healthcare context

The healthcare system in Peru, like many others in Latin America, is composed of a public sector and private sector. The public sector is served by the Ministry of Health (MINSA, see www.minsa.gob.pe) and the Social Security network (EsSalud). MINSA

operates 89% of healthcare facilities in Peru and provides the bulk of the care, especially outside of the major urban areas. EsSalud provides care to insured employees of government and of medium to large corporations, primarily in urban areas. Very few (1–2%) of the population in the Conga Area are covered by EsSalud; primarily only those employed by the Newmont mine. The military and police also run their own healthcare facilities, but they are not directly relevant to the Conga Area. The private sector in healthcare is composed of individual physicians, for-profit clinics and hospitals, and some non-profit institutions run by religious or other non-governmental organizations, and tends to be concentrated in the larger urban areas.

In rural areas such as the Conga Area, MINSA health posts and hospitals provide virtually all the care to the local population. Area residents may live several hours' walk from the nearest healthcare facility, and may not be able to afford basic services, even at subsidized prices. MINSA facilities often suffer from lack of staff and equipment. In remote locations, a single nurse or midwife may perform the duties of a physician, midwife, and public health nurse. "Seguro Integral de Salud" (SIS), or "Integrated Health Insurance," is a national MINSA program legislated in 1997 that provides care to poor children up to age 18 and poor pregnant women. Those who qualify for SIS receive free care at MINSA facilities, including free medication. MINSA then reimburses healthcare facilities for care to SIS recipients on a per encounter basis, with set fees for a nurse well-child visit, a normal birth, a caesarian section, etc.

4.4. Social context: health, education, and demographics

The 20 communities in the Conga Area have a population of around 6000 and fall under three districts: Sorochuco, Huasmin, and La Encañada. The Cajamarca DISA is a large healthcare administrative area within MINSA that includes the city of Cajamarca and the three districts. Summary statistics are presented in Table 1. It is noteworthy that illiteracy rates in women surpass 50% in the three districts, and that 20–25% of school age children (age 6–12) do not attend school. Infant mortality rates are similar to those in the rest of Peru, but the maternal mortality rate remains above the national average (164/100,000 according to www.minsa.gob.pe.) For comparison, the national maternal mortality rate is 12 per 100,000 live births in Peru.

5. Analysis of interview data

5.1. Key stakeholders

As described in Proposition 1, the RAP process has been inclusive, incorporating the perspectives and capabilities of local groups and individuals as well as in-nation professionals from the Ministry of Health and universities. Community interviews and meetings with officials identified the key stakeholders in health. These include the Ministry of Health (MINSA) and its local officials since it is their mandate to look after the health of the whole region. Ideally, the regional MINSA authorities would help to coordinate all health-related initiatives in the area, since it has the incentive to avoid duplication of services and expand service access to the greatest possible number. MINSA suffers through the political cycle because its regional leaders are political appointees. These leaders may be further hamstrung by a mandate to meet coverage targets for various national health programs or initiatives.

Table 1
Health and socio-economic indicators –Conga area

Indicator	DISA Cajamarca	La Encañada	Sorochuco	Huasmin
<i>Demographic indicators</i>				
Population	636,393	26,386	11,161	15,042
Population under 15	246,551	10,220	4324	5833
Population > 65	27,822	1157	492	654
Rural population %	70.7	96.4	93.4	98.6
Illiterate population %	27.2	43.1	36.6	44.1
Without potable water %	30.2	41.7	16.7	0
Without sewage %	75.7	10.4	99.7	93.4
Without electricity %	78.6	61.5	97.4	86.8
Below poverty line %	51	31.8	62.0	49.3
<i>Health indicators</i>				
Inpatient beds per 1000 population	1.1	0.7	0.4	0.4
Doctors per 10,000 population	2.5	1.1	1.8	0.7
Women of reproductive age	161,601	6690	2841	3732
Estimated pregnant women	21,931	905	401	512
Birth rate per 1000 population	27.6	27.5	28.8	27.3
% institutional births	45.3	18.0	32.7	19.5
Maternal mortality (per 100,000)	214	317 (all Celendín Province)		
Perinatal mortality (per 1000)	30.2	38 (all Celendín Province)		
Infant mortality (per 1000)	30.0	39 (all Celendín Province)		
MMR vaccine coverage %	89.3	95.2	75.3	100
DPT vaccine coverage %	89.0	81.9	75.7	98.8

Dirección Regional de Salud (DISA) executive summary.

Civil authorities, including mayors and local officials, are another key stakeholder. They have a broader and more general community development perspective than health officials, including such key priorities as water, education, electricity and roads. Through a decentralization policy in MINSA, some municipal governments have taken over the administration of health posts and exercise considerable fiscal autonomy, although they must still adhere to national health programs and guidelines. Some municipalities, such as La Encañada, have been quite aggressive in pursuing health infrastructure development, at times with a remarkable lack of coordination with MINSA.

Another key stakeholder is Newmont/Yanacocha. The company has already been involved in many health and development related projects in the region, though often without a long-term strategic vision. ALAC, the Newmont/Yanacocha corporate foundation in Cajamarca, supported primarily small business development projects, but had formed a task force to investigate health-related issues. Three years in operation, it appeared ALAC was beginning to take on its own identity, although its administration and financing were almost completely reliant on Yanacocha. ALAC was not active in the Conga Area.

Other key stakeholders included NGOs, the Universidad Nacional de Cajamarca, and the communities. CARE is the most active NGO in the greater Conga area, with projects in nutrition and water supply, among others. CARE is widely viewed as a trustworthy and dependable organization in the Conga area. The state university in Cajamarca has a medical and nursing school, as well as an environmental engineering department. Many of the university's faculty have considerable experience in community health, but do not always feel their input is welcome at MINSA. The communities have a number of formal and informal leaders, at times "lieutenant governors" tied to the district authorities, at times respected members of the communities, such as teachers or the heads of community organizations. Depending on the community, influential organizations included Juntas de Agua Potable (potable water councils) and "rondas campesinas," a sort of self-defense group for the protection of land and property.

5.2. Health infrastructure

Two first-level health posts were situated within the Conga Area, both staffed solely by a nurse and a nurse's aide. The physical plant of most health posts visited was adequate: a few basic exam tables, a stock of essential medicines, and a refrigerator (gas-powered) for vaccines. Other health posts visited in slightly larger communities typically benefited from the presence of a physician and nurse-midwife. The mountainous topography of the area, however, limited access to the clinics and made outreach by clinic staff more difficult. Some of the outlying communities were located 3–4 h walk from the nearest health post. Vehicular transport over the dirt roads was rare to non-existent. In a few instances, health posts were able to expand their outreach through health promoters, that is community health workers with basic training who live and work in their communities. To compound the problems of remoteness, most health posts did not have an adequate communication system. Two-way radios, if available, often did not work. Satellite phones were solar powered, functioned only during the daytime, and were typically located in the home of a community leader, not in the clinic. Not surprisingly, medical communications in times of an emergency were difficult to impossible.

The hospitals were located in Celendín and Cajamarca. Celendín Hospital, technically the referral hospital for most of the Conga area, was 4–6 h travel from most of the communities. Due to shortage of personnel and equipment, it lacked the capacity to resolve many common problems. A donated X-ray machine had never been installed. It was rare that both a surgeon and the necessary supplies were available to conduct a basic operation such as Caesarian section or an appendectomy. At Cajamarca Hospital, the regional referral center for a population of over 600,000, specialty services such as surgery and obstetrics were available. At the time of the visit, only one X-ray machine and one ultrasound machine were functioning. Special cases needing a neurosurgeon or other sub-specialist needed to be referred to Lima.

5.3. Healthcare workforce

Many local providers work long hours to serve their communities. Due to staff shortages, communication difficulties, and remoteness of health posts, health providers must often close a health facility for travel to Cajamarca or Celendín on either personal or official business. Successful providers tend to originate from the community or have remained long enough to develop deep connections to the community. Recent graduates from training are more likely to feel isolated and overwhelmed. Virtually no ongoing support exists from the regional health administration in terms of continuing medical education. Health promoters, trained either through the ministry of health or through NGOs, face similar challenges. Only one NGO organized continuing education for its former trainees.

5.4. Community health issues

Newmont and key community stakeholders have been involved in the analysis and invention of possible interventions for key local infrastructure issues. For example, interviews with local health professionals and with community members confirmed the occurrence of the frequent problems reported by MINSA. Upper respiratory infections led the list, followed by malnutrition in children, gastrointestinal parasites and diarrheal diseases, and skin infections such as scabies and impetigo. The team also noticed recurrent complaints of cough, headaches, and difficulty concentrating. These complaints may stem from chronic exposure to soot and carbon monoxide: Most homes in high-altitude regions of Peru have little in the way of ventilation or windows, and families use open fires for cooking and for heating.

Time and again, interviews revealed water to be the central issue in every community. First, locals cited the concern for pollution from any possible mining activities, and the resultant damage to their own health or to that of their livestock. Second,

locals feared that the quantity of water would decline as a result of water use by the mine. Communities already face significant water shortages during the annual dry season.

From a community perspective, latrines were not a top-priority. Blue-green latrines installed with government help over a decade ago dotted the countryside. Most overflowed during the wet season. Few latrines were built with local materials or were adequately maintained. Not surprisingly, many community members opted for their fields over the latrines.

Most families in the Conga Area earned a livelihood in subsistence agriculture and dairy. Most milk was sold to market, and little remained for domestic consumption. If some milk was kept at home, it typically went to the most productive member of the household, the man, rather than to the young children at risk of protein malnutrition.

The milk trucks collecting milk from dairy families were the only source of regular transportation in the Conga Area. Certainly, no motorized transportation was available for emergencies. Some communities had organized emergency evacuation committees that would physically carry ill community members to the nearest road or health facility.

Radio communication was one-way only: Since many community members had am/fm receivers, the local radio station became a source of announcements and convocations for meetings. This media appeared to be underutilized for health-related messages.

Education suffered from high-absenteeism of students, and at times from that of teachers: Those teachers commuting weekly from the town or the city tended to arrive on Monday afternoon and leave Friday morning, thus impinging on the 5-day school week.

Most communities lacked trust in the healthcare system for anything more than basic preventive care. It was cited that healthcare providers were often absent from the health posts. Mothers willingly brought their children in for vaccinations, however. Most were willing to visit the health post occasionally for prenatal care, though the vast majority of women delivered at home with a family member or a lay midwife. Many community members and local healthcare providers did not believe the hospital in Celendín could be counted on in a time of need. Thus many referrals bypassed Celendín directly for Cajamarca. The prospect of a mine was viewed with a mixture of hope, skepticism, and fear: Hope for cash income and employment, skepticism of the mine's good intentions, and fear of deterioration of their environment. The mine's community relations staff were also viewed with mixed emotions, and often accused of favoritism toward community members in positions of power, or who happened to be pro-mining.

6. Analysis of Newmont's responses

Newmont has responded to negative publicity and has begun to manage its affairs in an attempt to generate local legitimacy and support for its activities. As described on their corporate website (<http://www.newmont.com/en/social/index.asp>), Newmont has a history of being active with community development projects at its mining sites. However, earlier projects by Newmont were typically chosen by Newmont and included solutions like providing money for the construction of a new hospital in La Encanada, Peru. Such decisions did not include significant input from the local community or an independent team of investigators, such as the CU project team.

6.1. Local legitimacy

What is different today is that Newmont has become much more involved and committed to developing legitimacy through sustainable community development on the terms of the communities in the Conga mining area. This new approach goes well beyond philanthropy, and we argue, it adds a substance and a longer-term perspective to London and Hart's social embedded approach.

We have borrowed some aspects of the social embedded approach and added others to come up with three components to our local legitimacy approach. These components include: 1) the co-invention and analysis of key community needs by an MNE and community stakeholders, 2) the development of infrastructure interventions to enhance communities' social fabric (e.g., education, training, domestic violence programs), and 3) the development of physical infrastructure needs such as housing, roads, health facilities, communication network, and the like. Table 2 refers to these three components briefly as: co-invent and analyze, community social fabric, and physical infrastructure intervention.

The recommendations of the CU project team to Newmont are summarized in Table 2. As indicated, Newmont's investment in the mining communities of Peru will not be superficial, quick fixes. For example, Newmont's history in other mining areas, such as Batu Hijau, Indonesia, show that the corporation has been willing to invest in long-term infrastructure development. Newmont has final authority on which infrastructure development projects it chooses to do in Peru. They have expressed agreement with the recommendations of the CU team, but the implementation of the recommendations will depend to a large degree on the economy, attitudes of future managers at Newmont, and other factors that may change over time.

Note that the infrastructure developments recommended by the CU project team cover a whole spectrum of needs. This is because it was evident from the outset of the project that the concept of health could not be limited to medical problems and healthcare services. Alternatively, the project team widened the scope of the project to consider other key infrastructure components which had implications for community health care. This approach is consistent with previous sustainability projects in developing nations. For example, the government-based PROGRESA program for poor communities in Mexico has been cited as successful integration of health, social, and educational policy. This program addressed the supply side of the equation (clinics, school, teachers), but also focused on the demand side, giving families incentives to seek healthcare and send their children to school (Levine, 2004).

Table 2

Recommendations and corresponding type of legitimacy for the Conga mining project site

1. Establish a coordinating body, such as a foundation, to design and implement a comprehensive strategy of social investment in health and development for the Conga Area. The Foundation needs to unite major stakeholders and have financial and administrative autonomy from Newmont. Legitimacy type: co-invent and analyze
2. Commission a household health study to establish a reliable health baseline in the target communities, and repeat this survey every 2–4 years. Legitimacy type: co-invent and analyze
3. Assist communities in attaining a safe and sufficient water supply and effective sanitary facilities. This will require an engineering survey of the target communities to determine the specific needs and available water resources of each community. Legitimacy type: physical infrastructure intervention
4. Assist health centers and communities to develop a sustainable communication infrastructure that improves healthcare. In the case of the Conga area, there is a need to install cell phone towers adjacent to current Newmont installations so health providers' effectiveness can be enhanced through timely consultations and referrals. Legitimacy types: physical infrastructure intervention and community social fabric
5. Improve community access to healthcare. Access can be improved by expanding outreach into the region and by facilitating transport outside the region. Local programs training health promoters should be reinforced, so that all communities benefit from at least one trained promoter from their own community. Legitimacy type: community social fabric
6. Help communities train and retain local healthcare personnel. A program to provide continuing medical education for nurses, physicians and technicians and to provide replacement coverage during absences would have a positive impact on job satisfaction and retention. Legitimacy type: community social fabric
7. Support education and health education in communities through programming and school construction. Beyond its economic and social benefits, female literacy has been directly linked to decreased infant mortality. Legitimacy types: community social fabric and physical infrastructure intervention
8. Support and link nutrition and economic development projects. Many successful NGO projects have connected nutrition and household wealth generation. The raising of chicken or guinea pigs, for example, generates income and provides nutrition for protein-deficient children. Legitimacy type: community social fabric and physical infrastructure intervention
9. Improve healthcare facilities and equipment, especially the referral hospitals (Celendín and Cajamarca) Legitimacy type: physical infrastructure intervention
10. Support applied research into the unresolved health problems of the area. Through the input of the community and public health experts, many projects can be designed that link an intervention to a measurable effect on health. Such research fosters the formation of partnerships with reputable academic institutions. Legitimacy type: co-invent and analyze

Given the recommendations of the CU project team, the authors have subsequently developed the local legitimacy model and its components. As shown in Table 2, these components are applied to the recommendations to see if there is a strong fit between the model and the recommendations. As shown, all the components of the local legitimacy model fit multiple times with the recommendations, providing initial support for all the propositions of the local legitimacy model. To recall, these propositions include: 1) co-invention and analysis of community needs and issues, 2) planning and investment in developments to enhance the social fabric of communities, and 3) planning and investment in physical infrastructure needs.

7. Discussion

Peng (2001) argues that developing nation economies, which represent almost four billion of the six billion people in the world, will become the new battleground for international business competition as MNEs look for new opportunities away from increasingly saturated markets in developed nations. Although the number of MNEs that are exploring economic opportunities in developing nations continues to grow, strategies in these economies are not well defined nor empirically tested at this time. Generally, international business researchers have assumed that the transnational model of global strategy (Bartlett and Ghoshal, 1989) would be as applicable in the developing world as it is in industrialized nations. The transnational model identifies global efficiencies, national responsiveness and worldwide learning as necessary capabilities for MNEs. However, researchers investigating MNEs' strategies in developing nations have found that these transnational strategies are generally not successful. Worse, the top-down strategies from the transnational model may be a recipe for failure for a venturesome organization. Alternatively, a social embeddedness strategy model for MNEs in developing nations has been introduced (London and Hart, 2004). Social embeddedness involves the ability to create a web of trusted partnerships with a diversity of organizations and institutions, generate bottom-up development and understand, and leverage and build on the existing social infrastructure.

The case of Newmont mining in the Conga mining region of Peru provides further empirical support for the social embeddedness model of strategy in developing nations. What the Newmont case adds to the social embeddedness model is the extent to which MNEs are reaching out to gain long-term legitimacy in the local communities in which they are working. For example, the communities around Newmont mines in the developing world are for the most part poor and vulnerable, and some have suffered either directly or indirectly as a result of mining activities. When community relations deteriorate, Newmont's prospects of obtaining social license to operate decline. Discontent over mining activities then spreads globally through the web and other media outlets, and any adverse impact or externality of mining, perceived or real, affects Newmont's ability to conduct business around the world. As described, Newmont's efforts to provide health-related sustainable benefit are beyond the corporation's core mining competence. Also, Newmont's effort goes beyond corporate benevolence, charity or philanthropy.

Overall, we argue that the case of Newmont in Peru is an example of a changing equation where mutual benefit will be a new goal and standard for MNEs in developing nations (United Nations Social and Economic Council, 2003). The four billion people that

live on less than \$2 a day should not just be seen as an 'opportunity' for globalizing capitalists, but as a mass of humanity in dire need of basic infrastructure development. To even the effects of capitalism between global markets and developing nations, MNEs will have to start developing legitimacy by providing sustainable benefit to local communities. These strategies are not simply charitable acts; they also pave the way for MNEs to be welcomed by developing nations for the longer term and promote the local community's ability to support the efforts of the MNE.

7.1. Future research

This case study introduces the theoretical concept of local legitimacy. As presented, this concept consists of three components relative to the Newmont sustainable development case in Peru: co-invention and analysis, development of community social fabric, and development of physical infrastructure. Future international business research should consider the differing ways corporations can and do socially embed themselves in developing nations and seek local legitimacy. London and Hart's path-breaking work and this case study on Newmont have illustrated several examples of this, but there are many other examples to consider.

Future research should also explore the conditions under which MNEs need to develop strategies of local legitimacy in developing nations. Some possible research questions include: 1) Are MNEs that have received negative publicity for previous local environmental and other problems more likely to initiate local legitimacy strategies? 2) Are MNEs, which are in industries that receive less scrutiny from NGOs/Media, less inclined to develop local legitimacy strategies? 3) Are MNEs with higher profit margins more likely to develop local legitimacy strategies? 4) When possible, do MNEs seek locations in the developing world which have lower expectations for local legitimacy strategies? And, 5) Do MNEs which plan to stay in a particular location for a greater number of years more likely to initiate local legitimacy strategies? Another research question to consider is what is the 'tipping point' for which MNEs must bring local legitimacy into their strategic mix. And, is this tipping point moving? That is, are NGOs and mass media clearly moving the tipping point toward greater corporate social responsibility for MNEs in the developing world as well as the developed world?

These suggested research questions concern the international business side of things, however, there is much to consider on the organization theory side too. For example, our research places empirical considerations into a neo-institutional organization theory framework. Are there other theoretical frameworks that might provide more explanatory power than institutional theory? Also, the institutional approach taken in this paper isn't typical. Most institutional approaches focus on values and social structure and how organizations try to match or mimic them (Scott, 1995). However, this case study is more than another description of organization mimicry of a social structure. This case is also about agency and how an organization's actions can change the institutional environment (DiMaggio, 1988). For example, in this case study, Newmont is arguably proactive in trying to change the institutional environment for all gold mining and other extractive resource corporations. Could smaller firms, or firms with less visibility than Newmont, be successful at changing their institutional environment too? Or, more generally, under what conditions does agency have an impact in the institutional arrangement of organizations.

7.2. Limitations

There are limitations to the conclusions that can be drawn from this exploratory study.

First, our research is only done in the Conga mining area of Peru. Despite the intensive health assessment effort by the interdisciplinary team of CU researchers, it would be helpful to have a comparison case or two of other MNE mining firms to corroborate the results of this study. Second, this study is not complete, but will continue to unfold in coming years. The recommendations provided by the CU project team have been sent on to Newmont all provide for substantial infrastructure development. Newmont has accepted these recommendations and appears ready to implement many, if not most, all of the recommended interventions, but the process of doing such is still in a very early stage precluding any attempt to measure the effectiveness of these interventions.

Note that a separate project is being conducted by another CU team in Newmont's two mining regions in Ghana and a third study may be started at Newmont's mine in Indonesia. The Ghana assessment is being completed by a different team of health professionals and researchers, including the first author of this paper. The communities in the Newmont mining areas in Ghana, like the Conga mining area, are very poor, but the social and geographic circumstances are different than in Peru. Despite these differences, most of the issues that have been confronted in Ghana are quite similar to what has been found in the Conga mining area of Peru. More importantly, the institutional-based theory results of this paper are very consistent with what has been happening at Newmont's mining locations in Ghana. In sum, Newmont is working hard to establish local legitimacy at the mining sites in an effort to develop social license for up to fifteen years of mining.

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