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The ethics of material provisioning: Insiders' views of work in the extractive industries

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1. Introduction

Each year thousands of mining and minerals industry personnel, academics, and students convene at the Society for Mining, Metallurgy and Exploration (SME) conference. The program spans multiple days and features panels in which industry personnel, consultants, and academics share projects and research. The greatest emphasis is on engineering, geology, and metallurgy, though a few panels usually consider government and stakeholder relations. In addition to the technical sessions, conference attendees spend time in a large exposition and trade show full of booths – around 750 in recent years – in which companies promote their services and products. Universities also sponsor booths to provide information on their mining engineering undergraduate and professional programs, and the largest ones host social events for their alumni to gather together with current students and professors. Crucial networking happens in those spaces as well as in happy hours, meals, student competitions, and other social events with corporate sponsorship. In short, the conference is a space in which people who work in mining constitute themselves as a profession, sharing knowledge and nurturing professional and personal relationships.[1]

In response to public criticism of mining, the SME began hosting a "Move Mining" competition in which participants proposed strategies for improving the public perception of mining. During the 2018 conference, held in Minneapolis, Minnesota, the competition took place at the very beginning of the conference. It was sponsored by PolyMet, a company seeking to develop a controversial large-scale copper mine near the state's Boundary Waters, a wilderness area beloved by nature enthusiasts for its unparalleled opportunities for canoeing and camping (Phadke, 2018). The competition began with an acknowledgement of PolyMet's sponsorship and featured one of their promotional videos extolling the necessity of copper for Americans' way of life. The language mirrored that found on their website: "Found in everything from wind turbines to diabetes test strips, cancer treatments and car exhaust catalysts, the metals from our project are essential to our everyday lives. Imagine life without electricity, cars without pollution controls and medical care without many of today's medical devices."[2] The emcee also underscored the importance of mined materials in general and PolyMet's minerals in particular while introducing the judges, saying, "Judges will be logging their scores on an iPad, which, coincidentally, comes from mining. Everything in an iPad comes from mining, right? So we're using the technology that comes from mining right here." Each of the teams who competed in the final round stressed the importance of sharing accurate information with the public in order to counter negative stereotypes of mining, including a team who peppered their PowerPoint slides with the hashtags #miningforlife and #mineforprogress. The winning team was a group of Colombian mining engineering students who proposed to build on their efforts to educate kids about the importance of mining and minerals in their everyday lives.

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[1] The other major annual mining conference is held by the Prospectors and Developers Association of Canada in Toronto and focuses more on finance. In contrast with the SME – where attendees mill around in business casual clothing or even jeans and flannel shirts, looking as if they were reporting to work at an actual minesite – PDAC attracts a lot of people in suits, such as mining investors, executives, and national government officials.

[2] http://polymetmining.com/northmet-project/importance-of-metals/.

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Motivating the founding of the Move Mining competition, the teams' proposals, and the emcee and judges' comments was a particular view of mining's place in the world: mining provided the material basis for people's everyday lives around the world. It is difficult to underestimate the significance of this point of view for people I met who work in the mining as well as petroleum industries. In this article, I argue for the importance of recognizing and theorizing this point of view as an "ethics of material provisioning." This ethical framework, which adds a positive moral valence to work inside of industry, is simultaneously a political one (High and Smith, 2019), as it justifies the projects and interests of industry players over those of their detractors. Recognizing this political narrowing, anthropologists and other social scientists who have encountered this framework in their research critique it as an ideology of inevitability that forecloses criticism (Chapman, 2013; Huber 2013: 309; Hughes, 2017: 90; Nader, 2004). While acknowledging this critique, I argue that dismissing this point of view as simply ideology hinders our ability to collectively chart more sustainable energy and resource futures, as doing so loses sight of how people who work in controversial industries themselves understand the "good" of their work.

This article draws from long-term research with people who work inside the mining and petroleum industries. The most recent material includes in-depth interviews with about 75 people. Three-quarters were engineers or applied scientists from a variety of disciplines, and the rest were personnel who worked in external and community affairs.[3] These interviews took place both on- and off-worksites, primarily in person and but a few over Skype. All of the interviewees had lived or studied in the United States, and almost all were white. Many of these connections were facilitated by my status as a professor at the Colorado School of Mines an engineering and applied science university with longstanding and unique ties to both mining and petroleum. Since 2012 I have been working among engineers and applied scientists; teaching engineering and applied science students and supervising their research; collaborating with mining, petroleum, environmental and geophysical professors in teaching their courses; conversing with alumni and recruiters at campus events, including a biannual career fair; attending and organizing campus lectures by engineers from industry as well as academia; and attending and presenting at the major conferences of the professional associations primarily associated with mining and oil and gas activity. Over the course of the research I have also toured mines and wellpads and accompanied engineers on their public engagement activities. This immersion into the fields of engineering and applied science builds on the research I have been actively conducting since 2006 in relationship to mining, which originally focused on miners themselves (Rolston, 2014).

The article begins by reviewing the place of "industry insiders" in the social science literature on the extractive industries. The following section examines key public places and institutions that through which the ethics of material provisioning circulates. Next, I analyze ethnographic interviews to show how this ethical framework animates the ways in which people who work in industry understand their vocation and respond to public criticism. I conclude by outlining how attention to this ethical framework can help advance both research and public debate about the mining and oil and gas industries.

2. Research inside of industry

In the ongoing boom of social science research on mining, oil and gas, the dominant analytic strategy to understand these industries has been to document and critique the social and environmental harms development projects generate, often from the perspective of the people who experience these harms first-hand or who organize in order to address them (*e.g.* Jacka, 2015; Jalbert et al., 2017; Kirsch, 2006; Kirsch, 2014; Kirsch (2018); Sawyer, 2004; Willow, 2018; Wylie, 2018; see Jacka, 2018 for a recent summary in anthropology). This research strategy is well represented in *The Extractive Industries & Society (EXIS)*, the key journal for bringing together social science research on these industries.

The relative dearth of "inside the fence" studies of the extractive industries is partially due to the power of corporations to control access to production sites and headquarters (Müftüoglu et al., 2018). The social scientists who have been able to conduct research inside of mining corporations have generated rich research on the plight of personnel dedicated to corporate social responsibility (CSR) functions. Rajak (2011)'s pioneering study of CSR at the mining multinational Anglo American persuasively shows how CSR extends the moral authority of corporations. She found that CSR practitioners brought deeply-held personal passions of "doing good" to their work of "empowering" the subjects of their programs, but ultimately reinscribed coercive gift relationships with them that inspired "deference and dependence rather than autonomy and empowerment" (2011: 236). Welker's (2014) study of Newmont CSR personnel proposes a provocative – and productive – retheorization of corporations as multiply enacted entities. Her ethnography shows that these personnel enacted the company to different ends – as a "pot of money" versus a "set of skills" – as they attempted to ameliorate the harms created by mining activities (65). Rogers (2015) argues that the practice of CSR during the postsocialist oil boom in Russia's Perm region produced an "interpenetration of corporation and state" (176) and remade the region through widespread cultural projects that played upon the materiality of oil and gas and their attendant infrastructure. Owen and Kemp have conducted perhaps the most extensive research inside of mining companies from their positions as researchers at the University of Queensland's Sustainable Minerals Institute. Working inside of companies allows them to show how grounding calls for social responsibility inside of the business case for the social license to operate can undermine efforts at sustainable community development; to document how CSR practitioners experience marginalization inside of corporate structures that leave them out of major decision-making; and to identify voices for change inside of companies that are "holding ground against the narrow business case view of the world" (2017: 223).

Far fewer scholars have taken up the experiences of industry personnel outside of CSR teams. Those that consider technical personnel such as engineers point to the politics, exclusions, and harms embedded in infrastructure that is otherwise cloaked in the banners of neutrality or progress. Li (2015) examines the role of engineering knowledge in mining-related controversies in Peru, including how the structural conditions of engineers' employment shape their ability to bring social and environmental concerns into their professional practice. She also shows that engineers and *campesinos* differently understand phenomena such as water quality. Espig and de Rijke (2016) call attention to the differences between how engineers and the people who live closest to coal seam gas production understand risk and uncertainty. Kneas (2016) shows how personnel working for a junior mining company constructed geological assessments of copper mineralization in Ecuador to sell the "potential and possibility" of a copper resource to be mined (73), forming part of a much longer history of the contested creation of geological knowledge about the subsoil (Kneas, 2018). Hughes (2017) ethnographically demonstrates how petroleum scientists and engineers in Trinidad and Tobago construct oil reserves, resources, and reserves that become resources through graphical representational techniques (79–81).

EXIS has also published a few key articles that substantively engage industry insiders beyond those who work in CSR functions. Carrasco (2015) provides a poignant portrait of an early 20th century US engineer who whose humanitarian actions, she argues, are largely responsible for the positive and nostalgic feelings in the social memory of

[3] About half of the interviews were conducted by the author, and the other half were conducted by Nicole Smith, who worked as a postdoctoral scholar on the research project.