

Knowledge Production and Forced Labor: The Intellectual Work and Worlds of Andean *Mitayos* in the Late Colonial Period¹

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Abstract: This article, which focuses on silver mining in the colonial Andes, attempts to bring silo-ed conversations in the history of science and labor history into a shared dialogue. In so doing, it offers a way to reassess the traditional historiographic consensus that independent wage laborers were “high skilled” and forced laborers were “low skilled.” Through linguistic analysis and legal case studies, it shows that miners often crossed back and forth between labor categories and positions, and that frameworks like skills and wages are inadequate to understand workers’ experiences and expertise in highly coercive extractive industries like mining in the colonial period.

Keywords: Mining; Labor history; History of science; Colonial times; The Andes.

The history of mining in Latin America has long revolved around questions of labor economics – and with good reason. The colonial Latin American mining industry and its transoceanic shipments of enslaved workers and precious metals profoundly shaped the history of globalization, binding together Asia, Africa, Europe and the Americas for the first time in recorded history. In the colonial Andes, the source of this extraordinary volume of production was a combination of independent wage laborers (*yanacunas*, *mingas*) and forced

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workers (*mitayos*). Both groups were composed overwhelmingly of Indigenous miners, and many workers crossed between categories of free and unfree labor, often in ways that we have not fully explored in the history of mining. Throughout the 1980s, 1990s, and 2000s, histories of the *mita* tended to focus on the brutally extractive conditions of Spanish colonial systems, and to distinguish the violent realities of forced labor from the skilled, nimble positions of independent artisans in and around Potosí. I do not dispute any of the characterizations of the *mita* as a dehumanizing, destructive labor system. What I want to challenge in this article, building from recent work in labor history, sociology, and the history of science and technology, is the rigid border that scholars have created between unskilled forced labor and skilled independent labor.

Histories of mining in colonial Latin America have largely followed Western economic theories of human capital, which assert that higher skills command higher wages. Wages for draft workers were officially set by the Crown in the late sixteenth century: ore pickers received 3.5 *reales* a week, porters earned 3 *reales*, whether they worked underground or transporting ore from the mines to the refineries, and refiners earned 2.75 *reales*.² By the seventeenth century, *barreteros* in the *mita* earned 3 *pesos* a week (24 *reales*), but one who hired himself out as an independent laborer (*minga*, derived from the Quechua *minccani*, “to hire a person,”³ would earn 10 *pesos* (80 *reales*) in the same period.⁴ Most *mingas*, whether serving as pickers or porters, earned between 9 and 14 *pesos* per week.⁵ Another class of independent workers also earned salaries that were much higher than the artificially low wages of the *mita*, but they were recruited and paid in different ways. *Yanaconas*, derived from the Quechua term *yana* (servant),⁶ were not aligned with *ayllus* (kinship networks) and thus did not pay taxes to Indigenous communities. They hired themselves out to individual mine owners, and were sometimes compensated only in the ore that they extracted – but this could be up to ten times as much as the owners earned, making the position potentially quite attractive, despite the lack of community.⁷ By comparing the salaries of free and unfree workers, scholars have largely concluded that wage laborers, whether *yanaconas* or *mingas*, were “usually” or “tended to be more skilled, and hence more valuable,” whereas *mitayos*, generally assigned “tasks requiring little skill or training,” must have been “trabajadores no cualificados” (low-skilled workers).⁸

2 ZAGALSKY, Paula C. Trabajadores indígenas mineros en el Cerro Rico de Potosí: tras los rastros de sus prácticas laborales (siglos XVI y XVII). **Mundos do Trabalho**, Florianópolis, v. 6, n. 12, pp. 61-62, 2014.

3 GONZÁLEZ HOLGUÍN, Diego. **Vocabulario de la lengua general de todo el Peru llamada lengua Qquichua o del Inca**. Lima: Francisco de Canto, 1608. p. 237.

4 ZAGALSKY, op. cit., p. 77.

5 Ibidem, p. 68.

6 GONZÁLEZ HOLGUÍN, op. cit., p. 365.

7 ESCOBARI DE QUEREJAZU, Laura. Mano de obra especializada en los mercados coloniales de Charcas. Bolivia, siglos XVI-XVII. **Nuevo Mundo Mundos Nuevos**, Paris, [Em linha], Débats, publicação em linha 31 de janeiro de 2011. Acedido el: 4 out. 2023. Disponível: <http://journals.openedition.org/nuevomundo/60530>. REVILLA ORÍAS, Paola A. **Entangled Coercion: African and Indigenous Labour in Charcas (16th-17th Century)**. Berlin: Walter de Gruyter GmbH & Co KG, 2021.

8 BAKEWELL, Peter J. **Miners of the Red Mountain: Indian Labor in Potosí, 1545-1650**. Albuquerque: University of New Mexico Press, 1984. pp. 51 e 135. TANDETER, Enrique. **Coercion & Market: Silver Mining in Colonial**

At the same time, eye-witness accounts from the period and modern histories, including works written by the scholars cited above, have found that *mitayos* were 30-50% more productive than the hired hands, even when *mingas* were paid twice as much.⁹ Peter J. BAKEWELL suggests that this greater productivity could be tied to “something of the old Inca discipline still attached to the *mita*,”¹⁰ or that work meant more when it was connected with community, not just capital. Kris LANE offers another theory, that even though *mingas* “were usually more skilled than the drafted *mitayos*,”¹¹ owners of mines and refineries preferred *mitayos* because it was easier to take advantage of them. These paradoxical points of agreement – that low-paid *mitayos* were more productive and in demand, but less skilled than independent contractors – suggest that modern theories of human capital are inadequate tools to understand knowledge production within forced labor systems. They ignore the mechanisms through which workers were placed into categories, and how they moved across various forms of work. The traditional binary between free and unfree labor reflects what sociologists Léa Renard and Theresa Wobbe call “historically laden categories reflecting universalist European claims,”¹² not local realities in places like the Andes, where historians Paula Revilla Orías,¹³ Rosanna Barragán,¹⁴ Raquel Gil Montero,¹⁵ and Paula Zagalsky¹⁶ have shown that the interplay of free and coerced labor was particularly pronounced.

To begin to assess what *mitayos* knew and how their work mattered to them, this essay takes what sociologist Toby Huff calls a “civilizational” approach to the history of ideas, understanding that “the nonscientific domains of culture,” such as “law, religion, philosophy, theology, and the like” can help explain the technologies and practices that are adapted and rejected in particular places and times.¹⁷ Huff developed the theory to explain scientific divergences in medieval China, Europe, and the Middle East, but a community-based framework is well-suited to analyze histories of science and technology in Latin America,

Potosí, 1692-1826. Albuquerque: University of New Mexico Press, 1993. ABSI, Pascale. **Los ministros del diablo**: El trabajo y sus representaciones en las minas de Potosí. La Paz: Institut français d'études andine, 2005. p. 19. BROWN, Kendall. **A History of Mining in Latin America**: From the Colonial Era to the Present. Albuquerque: University of New Mexico Press, 2012. p. 59.

9 CAPOCHE, Luis. **Relación de la Villa Imperial de Potosí**. HANKE, Lewis (ed.). Madrid: Real Academia Española y Ediciones Atlas, 1959 [ca. 1585]. pp. 173-174. TANDETER, op. cit., p. 83.

10 BAKEWELL, op. cit., p. 122.

11 LANE, Kris. **Potosí: The Silver City that Changed the World**. Oakland: University of California Press, 2019. p. 71.

12 RENARD, Léa; WOBBE, Theresa. **Free Versus Unfree Labor: Challenging Their Boundaries**. In: HERZOG, Lisa; ZIMMERMANN, Bénédicte. **Shifting Categories of Work**: Unsettling the Ways We Think about Jobs, Labor, and Activities. New York: Routledge, 2020. p. 106.

13 REVILLA ORÍAS, Paola A. **Entangled Coercion**: African and Indigenous Labour in Charcas (16th-17th Century). Berlin: Walter de Gruyter GmbH & Co KG, 2021.

14 BARRAGÁN, Rosanna. **Working Silver for the World: Mining Labor and Popular Economy in Colonial Potosí**. **Hispanic American Historical Review**, Durham, v. 97, n. 2, 193-222, 2017. BARRAGÁN, Rosanna. **Women in the Silver Mines of Potosí: Rethinking the History of “Informality” and “Precarity” (Sixteenth to Eighteenth Centuries)**. **International Review of Social History**, Cambridge, v. 65, n. 2, 289-314, 2019.

15 GIL MONTERO, Raquel; ZAGALSKY, Paula C. **Colonial Organization of Mine Labour in Charcas (Present-Day Bolivia) and Its Consequences (Sixteenth to the Seventeenth Centuries)**. **International Review of Social History** v. 61, n. 24, p. 71–92, 2016.

16 ZAGALSKY, op. cit.

17 HUFF, Toby. **The Rise of Early Modern Science**: Islam, China, and the West. 3rd ed. New York: Cambridge University Press, 2017. p. 13.

and especially within violence-based labor systems like the *mita*. The voices of ordinary miners are all but nonexistent in colonial archives, but by reading documents from *mitayo* communities, especially witness testimonies, injury reports, and investigations associated with judicial proceedings, we can identify actions that miners took for their families and their people, and we can use those actions to speculate on their decision-making processes and ways of knowing.¹⁸

As a contribution to this dossier's focus on the meaning of mine work in the early modern era, this essay revisits one of the prevailing historiographic assumptions about knowledge and coerced labor. By comparing the early years of the *mita* with its changing meanings in the seventeenth and eighteenth centuries, I argue for a new reading of the possibilities of knowledge production within exploitative, extractive industries. The essay begins by explaining why the eighteenth-century context is critical to this study. It then provides an overview of the *mita* of Potosí, and it concludes with a close reading of a protracted, eight-year land dispute from Anconaza, near the present-day Villa de Colquechaca, in the province of Chayanta, just north of Potosí. The case, part of a late-eighteenth century corpus in which Indigenous women and men petitioned colonial courts to take action against their *caciques* (chiefs), suggests how community members understood their relationship to forced labor, land rights, and kinship structures. It offers an alternative discourse to skills and earnings through which we can analyze the technical ideas and practices of coerced miners in the colonial Andean silver industry.

A Brief History of the Mita, 1570s-1780s

THE PREDOMINANT SCHOLARLY consensus that unskilled Andean workers went to the *mita* and that high-skilled miners hired themselves out for wages is largely shaped by data from the early years of the draft labor system under Spanish colonial rule. But things changed significantly over time, and especially in the eighteenth century. This section explains the early years of the *mita* and the critical political and economic changes associated with small-scale silver production that emerged in the eighteenth century, against a backdrop of incomplete implementation of Bourbon reforms and widespread peasant rebellions throughout the Andean region.

The Spanish *mita* borrowed very loosely from the Inka *mit'a*, and in all the ways that really matter, the two systems bore no resemblance to each other. For one, Inkaic tribute labor promoted Andean philosophies and cultural practices like gender complementarity. Women and men mined gold and silver and performed other tasks together, such as agriculture, often using their labor to produce ceremonial or ritual goods, as well as more

18 Colonial sources refer to mine owners as “mineros” (miners), but this essay uses modern definitions. “Miner” refers to a person who extracts ore from an underground tunnel. By “refiner,” I mean someone who processes ore. The more general term “metalworker” refers to anyone who contributes to the production of metal.

ordinary objects and foodstuffs. For another, work periods, rotations, and rest cycles were officially regulated, respected, and fully integrated into community life, making the Inka *mit'a* a far cry from the extractive colonial system that took its name from the same tradition.¹⁹ Under the Spanish imperial *mita*, workers were forcibly removed from their communities, stripping kinship networks and sovereign polities of time, labor, and knowledge.²⁰ Some historians thus argue that there is no relationship between the Inka *mit'a* and the Spanish *mita*,²¹ whereas others note that it was Quechua-speaking miners who first used the same word to refer to both systems, suggesting some “institutional and practical continuity”.²² It seems safe to say that the continuities Indigenous workers may have perceived in the first years of the *mita* would have been quickly replaced by a first-hand, collective understanding of the two systems’ profoundly different ways of defining work and value.

In 1573, the first miners who were formally drafted into the Spanish colonial system of forced labor, some 9,500 souls, arrived in Potosí, some having journeyed more than 20 days’ time and covered more than 1,000 kilometers.²³ By 1575, viceroy Francisco de Toledo created the legal infrastructure through which sixteen administrative districts in and around the Cerro Rico, called *capitanías* or *corregimientos*, sent one-seventh of their male subjects between the ages of 18 and 50 years old.²⁴ These men, now totaling closer to 11,000 miners, often traveled with their wives and children, but because colonial officials did not count the family members who accompanied *mitayos*, the full scale of forced migratory labor in the Andes is unknown. What we do know is that some 91,000 men lived within the geographic bounds of the *mita*, and that for more than one-hundred years, beginning in 1578 and lasting through the 1680s, roughly 14,000 of those male miners reported to Potosí’s 234 receiving mines and refineries every Monday morning as part of their community obligations.²⁵ At a minimum, then, 1.5 million men, and many more women and children, would have participated in the *mita* between 1575 and 1685. At least as many people would have been conscripted during the second century of the system’s existence, from 1685 until 1812, when the system of draft labor was official abolished. In practice, though, the Spanish *mita* continued at least until 1825, when Simón Bolívar declared the end of the system in Potosí – and British investors immediately formed a new mining association to replace it, spurred on by European scientists like Alexander von Humboldt.²⁶

19 ABSI, op. cit., 294. GIL MONTERO; ZAGALSKY, op. cit., p. 74.

20 TANDETER, op. cit., p. 15.

21 BARNADAS, Joseph. **Charcas**: Orígenes históricos de una sociedad colonial. La Paz: Centro de Investigación y Promoción del Campesinado, 1973. p. 262.

22 BAKEWELL, op. cit., p. 45.

23 ZAGALSKY, Paula C.; POVEA MORENO, Isabel M. A Diverse World: A Panoramic View of Colonial Mine Labourers Based on Case Studies from the Viceroyalties of New Spain and Peru, *In*: REVILLA ORÍAS, Paola; CRUZ TERRA, Pablo; DE VITO, Christian G. (org.) **Worlds of Labour in Latin America**. Berlin: De Gruyter Oldenbourg, 2022, pp. 19 e 22. Since the 1560s, Spanish-controlled towns in the province of Chucuito had participated in a defacto system of draft labor in order to pay taxes, but the full system was not implemented on a regional scale until the 1570s, see: BAKEWELL, op. cit., p. 57; ZAGALSKY, op. cit., p. 59.

24 ZAGALSKY, op. cit., p. 61.

25 ZAGALSKY; POVEA MORENO, op. cit., p. 19. BARRAGAN, op. cit., p. 12.

26 LANE, op. cit., pp. 71 e 186.

Throughout its 250-year history, the institution of the *mita* changed in response to local initiatives and imperial orders. Almost immediately, it was clear that the system was not sustainable. By the early seventeenth century, approximately 50-70% of the Andean mining workforce was “voluntary,” a combination of *mingas* and *yanaconas*.²⁷ Under the Inka state, *yanaconas* were extracted from family networks and enlisted as personal servants to nobles and elites to support the making of crafts, harvesting of crops, and attending to temples. Under Spanish colonial rule they extracted silver for their owners and reserved choice ores for themselves, using their extra-communal status to avoid taxes and forge personal relationships of servitude that led to greater wages.²⁸ In contrast to *yanaconas* who circulated outside of family and communal networks, *mitayos* temporarily donated their labor in order to maintain permanent ties to their communities, with all of the meaning-making rights and privileges due to them as part of a culturally-coherent, philosophically-whole, spiritually-enriching existence. Some *mitayos* hired themselves out as *mingas* during the periods when they were not required to serve in the mines. The repurposing of resting workers (*mitayos de huelga*), whether orchestrated by *kurakas*, the Indigenous elites who were responsible for delivering miners, their *caciques*, or the miners themselves, happened so frequently that the plan for one-third work and two-thirds rest had instead become a cycle of permanent labor.²⁹ The endless cycle of work was driven by workers’ material needs. *Mitayos* needed roughly 200 pesos to support their households each month, but they only earned 65 pesos during the six-day workweek. Working for wages on their off time, in an “informally obligatory” position, was one way to bridge the gap.³⁰

Another way to supplement the family’s income was for women to refine silver on their own. Indigenous women had always worked with metals, from Inka-era mining for gold and silver in pairs of women and men,³¹ to running mining companies and selling in Potosí’s metallic market (*kjato*) in the sixteenth and seventeenth centuries.³² But the scale of women’s participation in the eighteenth century is considerably more expansive than written records suggest for the earlier colonial periods.³³ The changing relationship of women entrepreneurs – especially Indigenous and mixed-race refiners – to the colonial silver industry is key to understanding the persistence of the *mita* and the wider relationship between forced work and participation in eighteenth-century community life.

Following the ascension of the House of Bourbon in 1700, the Spanish Crown attempted to standardize colonial affairs, including the distribution of *mita* workers and the

27 Ibidem, p. 72. BAKEWELL, op. cit., p. 34.

28 BAKEWELL, op. cit., pp. 34-36. ZAGALSKY, op. cit., p. 59.

29 BAKEWELL, op. cit., pp. 123-124. ZAGALSKY, op. cit., p. 61.

30 BAKEWELL, op. cit., p. 134.

31 ABSI, op. cit., p. 294.

32 MANGAN, Jane E. **Trading Roles: Gender, Ethnicity, and the Urban Economy in Colonial Potosí.** Durham, NC: Duke University Press, 2005. BIGELOW, Allison Margaret, Women, Men, and the Legal Languages of Mining in the Colonial Andes. **Ethnohistory**, Durham, v. 63, n. 2, p. 351-380, 2016. LANE, op. cit.

33 BARRAGAN, op. cit.

collection of tribute, but Indigenous communities prevented Bourbon reforms from being fully implemented.³⁴ When Andean women and men observed a breach in the interests of church and state, they seized the opportunity to define themselves on their own terms and articulate new forms of communal sovereignty.³⁵ They did not abandon the *mita*, which many towns had long since incorporated into their own religious and political ceremonies of belonging to each other, but they instead redefined their relationships with the *caciques* who sent miners to Potosí once a year and collected tribute every six months.

Politically, the *mita* was part of the ritual performance of public life, but economically it was a critical counterpoint to small-scale *trapiches* (ore-grinding mills) where women, Indigenous, and mixed-race miners exerted notable control over their labor and the means of production. *Trapiches* are rudimentary instruments formed by two large stones arranged perpendicularly, so that metals could be ground when one stone was rotated atop the other, powered by humans or animals.³⁶ Most of the silver ground at *trapiches* was extracted by miners on their own time in a practice known as *k'ajcha* or *kajcheo*, a Hispanized form of the Quechua term *khacchani*, what early colonial lexicographers defined as “Desquixarar forcejar por arrebatar algo desgajar quebrar a pura fuerça” (To grind or force by violently removing something, to separate or break by pure force).³⁷

By the eighteenth century, *k'ajcha* was understood as an onomatopoeic interpretation of the sound made by the slingshots that miners used to ward off intruders underground, what Rosanna Barragán reads as potential evidence of conflicts between small-scale entrepreneurs of *trapiches* and the owners of large-scale amalgamation refineries, who tended to be Spaniards or *criollos* of Spanish descent.³⁸ According to an inspection conducted in Potosí between 1761-62, approximately 73% of the silver city’s *trapiches* were located in Indigenous neighborhoods.³⁹ An estimated 15% of the mills were owned by women, which tracks roughly with the finding that *trapicheras* generated between 10 and 20% of the annual silver recorded in bank deposits from 1754-1763.⁴⁰ The overwhelming majority of female-led *trapicheras* were Indigenous or mixed-race entrepreneurs; just over

34 BUECHLER, Rose Marie. **Gobierno, Minería y Sociedad: Potosí y el ‘Renacimiento’ Borbónico, 1776-1810**, vol. 1. La Paz: Biblioteca Minera Boliviana, 1989. Pp. 83-94. Other proposed reforms included technological innovations that would develop at the planned Escuela de Minería in Potosí, whose curriculum was to be based on the *Arte de los Metales* of Andalusian priest Álvaro Alonso Barba, which was published in 1640. The Indigenous-led rebellions of 1780-1782, combined with droughts that brought water-powered amalgamation refineries to a standstill and disputes among local Spanish and *criollo* elites, meant that the proposed technological and educational reforms were never fully realized.

35 PENRY, S. Elizabeth. **The People Are King: The Making of an Indigenous Andean Politics**. New York: Oxford University Press, 2019. pp. 124-142.

36 KENNEDY, Sarah A. **Marginalized Labor in Colonial Silver Refining: Reconstructing Power and Identity in Colonial Peru (1600-1800 AD)**. 2021. Tese (Doutorado em Arqueologia) – Universidade de Pittsburgh, Pittsburgh, 2021. p. 48.

37 GONZÁLEZ HOLGUÍN, op. cit., p. 121. LANGUE, Frédérique; SALAZAR SOLER, Carmen eds, **Dictionnaire des termes miniers en usage en Amérique espagnole, XVIe-XIXe siècle**. Paris: Editions Recherche sur les civilisations, 1993. pp. 304-305.

38 BARRAGÁN, op. cit., pp. 195-196.

39 BARRAGÁN, op. cit., p. 308.

40 Ibidem.

a quarter of them were Spanish.⁴¹ The *mita* and its taxes, like the colonial government, persisted throughout the eighteenth century, but the Spanish system of forced labor operated in tandem with and in response to a *trapiche/kajcheo* industry that operationalized traditional Andean ideas of reciprocity, exchange, and fairness. The violence-based *mita* could not have continued without the consent and participation of communal entrepreneurs, and the two systems cannot be understood without each other.

Defining and Defying the Categories of Mine Work

THE TRADITIONAL CONCLUSION that low-paid *mitayos* were unskilled workers and that higher-earning *mingas* and *yanaconas* were skilled professionals depends on our knowing which forms of work miners performed. This section will explain the main positions that draft laborers and hired hands occupied under and above ground. By attending to the ambiguous language of colonial sources, we see that it is all but impossible to identify strict borders between the forms of minework and categories of labor that existed in and around Potosí. Rather than two self-contained systems, free and unfree labor were part of the same coin, so to speak.

In colonial Latin American mining companies, the chain of production began with investors and mine owners who hired workers to extract and then process ore. Sometimes, these mine owners were small-scale entrepreneurs and *cateadores*, including Indigenous women like Bartola Sisa of Oruro, who in 1644 discovered a mineral vein in the province of Carangas and hired three Native men, Francisco de Corto of Potosí, Francisco Quispe of the San Lorenzo parish of Potosí, home to *mitayos* from Carangas, and Pedro Achatta, from Carangas, to help her work the site.⁴² But most of the operations were larger in scale and run by Spaniards or men of Spanish descent. They hired large teams of workers, beginning with *barreteros* (ore pickers), who read underground landscapes for subtle signs of metallic life and carefully extracted that material from the earth. Many of the eighteenth-century *kajchas* discussed above were ore pickers. Other miners then packaged the material and carried it above ground, zig zagging through narrow passages and climbing steadily at high altitudes without losing anything of value. They were called *apires*, derived from the Quechua *apay* (to carry). Over time, the mine's passageways became dusty and its stone support-beams needed cleaning, adjusting, and, eventually, replacing. These tasks were performed by cleaners (*siquepiches*) and masons (*pirquires*).

At the mouth of the mine, a third group of laborers would comb through the material to select the silver ores that were best suited for amalgamation and those that could profitably

41 Ibidem, pp. 308-310.

42 BIGELOW, op. cit. The case studied is from Archivo y Bibliotecas Nacionales de Bolivia (ABNB), Minas 96.2, 28 June 1644 - 23 July 1644 (Carangas), 7 folios. On the possible Andean etymologies of *cateadores*, see: BIGELOW, Allison Margaret. **Mining Language: Racial Thinking, Indigenous Knowledge, and Colonial Metallurgy in the Early Modern Iberian World.** Chapel Hill: University of North Carolina Press for the Omohundro Institute of Early American History and Culture, 2020. p. 233.

be treated with traditional methods. These workers, often women, were called *palliris*, a term that is derived from the Quechua *pallani* and the Aimara *pallatha*.⁴³ The verb *pallar* referred to at least four separate forms of metalwork, from the sorting of ore just brought from the mine and those recovered from partially-processed slag piles to selling the sorted ores in markets and to individual refiners. According to colonial lexicographers, the term also referred to the act of recording these forms of labor, such that writing, sorting, and selling could and were all called *pallar*.⁴⁴ Terms like *mita* and *pallar* suggest how miners repurposed words and sounds across languages, and how they imported concepts from Spanish into Quechua and Aimara and from Aimara and Quechua into Spanish. The blending of Andean etymologies and various forms of Spanish created a hybrid lingua franca that was used throughout the colonial mining industry.

Once ores had been sorted and sent to their most profitable sites of processing, refiners took control of the process. Of the 14,000 or so *mitayos* who were in Potosí at a given time, 4,500 worked underground, and the rest served in refineries (*ingenios*) that used new amalgamation technologies to extract refractory silver ores (Ag) with mercury (Hg).⁴⁵ By 1576, some 100 refineries were operating in Potosí, almost all of which were controlled by Spanish men.⁴⁶ Written documents and archaeological evidence testify to the precarious conditions in which mining families lived and worked along the ribera de Potosí, with facilities that one religious observer equated to “pocilgas o zahuradas de puercos ... tan baja que apenas se puede estar de pie” (a stable or sty for pigs ... so small that you can hardly stand up).⁴⁷ This astounding disregard for human life has commanded much of the scholarly attention on the *mita*, and rightly so. But it is also true that women, men, and children made their lives in these spaces. The ways that they survived, resisted, and built community are also worthy of study.

In a recent excavation of San Marcos, Ichuni, and Agua de Castilla, three of the *ingenios* that surrounded Potosí’s only source of fresh water, archaeologists uncovered cramped household spaces that matched colonial-era descriptions of precarious facilities.⁴⁸ Researchers spent the most time at San Marcos, located in the parish of San Francisco where *mitayos* from Cuzco and Collao were sent. Their study of San Marcos revealed that the shallow occupancy floors of domestic spaces were saturated with

43 BAKEWELL, op. cit., p. 138.

44 BIGELOW, op. cit., pp. 354-355.

45 LANE, op. cit., p. 71.

46 BIGELOW, Allison Margaret; CRUZ, Pablo. Ingenios and Ingenuity: Rethinking Indigenous Histories of Silver in the Colonial Andean Mining Industry. *Colonial Latin American Review*, Albuquerque, v. 30, n. 4, p. 524-525, 2021. Two notable exceptions are Inka descendent don Juan Colque Guarache and doña María Vello, who might be the same doña María Ñusta Vello who traced her ancestry to the Inka Emperor Wayna Qhapaq, see, CAPOCHE, op. cit., p. 119 e VÁZQUEZ DÁVILA, ‘Visita,’ folios 389-411. On Ñusta Vello, see BIGELOW; CRUZ, op. cit., 540. In the seventeenth century, more women appeared in judicial proceedings and notarial records as the owners of *ingenious*, see BIGELOW, op. cit., p.365-369.

47 OCAÑA, Diego de. *Un viaje fascinante por la América Hispana del siglo XVI*. ÁLVAREZ, Arturo (ed.). Madrid: Studium, 1969. p. 169.

48 BIGELOW; CRUZ, op. cit., pp. 526-531.

mercury, the main reagent in the amalgamation of silver, and they uncovered fragments of refining crucibles that were covered in slag. Whereas the toxic contamination may have leached in from mercury warehouses, *pozos* (wells) or any of the ovens, mixing areas, or other refining sites within the *ingenio*, the presence of handheld refining instruments, combined with the identification of chemical reagents, suggests that *mitayos* may have been producing silver on their own, effectively operating outside of Spanish networks within the heart of Spanish control.

Further isotope analysis is needed to determine whether the slag silver came directly from the mine associated with San Marcos, or whether it had been treated elsewhere and sent to other *mitayos* for finishing, but both possibilities call into question the standard connection between skills and wages.⁴⁹ The first possibility would suggest that *mitayos* in the mines detected specific silver formations underground. Because some ores are better suited to amalgamation and others are more profitably refined without mercury, *mitayos* needed to match the kinds of silver that they extracted from mines with the equipment that was available to them or their peers in domestic spaces. Indigenous metallurgists often employed small-scale ovens like *tocochimbos* (muffle ovens) to refine silver through cupellation after an initial round of processing in the wind ovens (*guirachinas*) that are found throughout the hills of the southern Andes.⁵⁰ Because household spaces were generally inaccessible to Spaniards, we know little of the kinds of small-scale, family-run operations that would have used *tocochimbos*. What we can say is that if *mitayos* extracted ores and brought them to other *mitayo* families in San Marcos, it would seem that supposedly “unskilled” low-wage draft laborers had first-rate abilities to identify metallic specimens and connect them with the optimal refiners. If future analysis reveals that the silver had been treated elsewhere and sent to San Marcos for finishing, we would see evidence of *mitayos* who had forged important social and commercial networks outside of their ancestral communities in order to earn a living in Potosí. Both possibilities call into question the prevailing conclusion that draft laborers who earned (artificially) low wages were also low-skilled workers.

It is true that there are real differences with respect to expertise in the forms of minework described above, from underground picking and hauling to aboveground sorting and refining. But it is also true that workers did whatever was demanded by the owners of mines and refineries, and whatever would help them contribute to the family income. The predominant consensus that emerged in the 1980s and 1990s is that *barreteros*, *palliris*, and *pirquires* had superior competencies, relative to the skills of *apires*, *siquepiches*, and *repasiris* (refiners charged with mixing metals, often barefoot), but these same sources

49 Ibidem, p. 532.

50 VAN BUREN, Mary; MILLS, Barbara H. Huayrachinas and Tocochimbos: Traditional Smelting Technology of the Southern Andes. *Latin American Antiquity*, Washington, D.C., v. XVI, p. 3-25, 2005. VAN BUREN, Mary; COHEN, Claire R. Cambios tecnológicos en la producción de plata después de la conquista española en Porco, Bolivia. *Boletín del Museo Chileno de Arte Precolombino*, Santiago, v. 15, n. 2, p. 31-33, 2010.

include important exceptions to the pattern.⁵¹ Independent wage earners were often found carrying loads in the *ingenios* of Potosí⁵² and *siquepiches* were known to pick ore for themselves and their families during periods of *kajcheo* in the Cerro Rico.⁵³ On the other side of the cordillera, outside of the silver industry, carpenters quickly became ore pickers in the copper mines of Puntiaqui, Chile, suggesting how artisans moved across labor categories with surprising speed and ease in diverse mining areas.⁵⁴ Whereas scholars once maintained that pickers were the most experienced and highest skilled workers in underground units, new research shows that their tools, techniques, and levels of expertise varied widely from mine to mine, and sometimes within sections of the same mine. In Mexico, for instance, Spanish-speaking owners provided only minimal training to enslaved Africans (*negros bozales*) and Indigenous *mitayos* who were then sent to work as *barreteros*.⁵⁵ So, while it is true that pickers could earn an impressive 234 *pesos* in six months by working independently, it was also true that ordinary *mitayos* took on those roles.⁵⁶ It is difficult to make any hard and fast conclusions about the competencies of *mitayos* and *mingas* based on wages or positions, because the workers were largely one in the same.

Early seventeenth-century records from the mercury mine of Huancavelica, Perú, suggest that at least in the minds of mining officials, *mitayos* were considered a form of artisan laborers, just like pot-makers (*olleros*), blacksmiths (*herrerros*), and peons (*oyaricos*, a Hispanized form of the western Quechua terms *q'uya*, “mine,” and *rikuq*, “person who watches”).⁵⁷ Throughout the report, colonial officials linked ethnicity and labor – 112 Chumbivilcas transported goods, 32 residents of Azángaro served in the hospital – but the skill-based distinctions that have mattered in the historiography do not enter the picture.⁵⁸

51 See for example: BAKEWELL, op. cit., 138; TANDETER, op. cit., 3. *Repasiri* is a hybrid form of Quechua and Spanish, but unlike the case of *pallar*, where the Quechua root *pallay* was adapted into an -AR ending verb scheme in Spanish, *repasiri* begins with a Spanish root, *repasar*, or “to mix.” It then takes the Quechua agentive *-ri* to convert the term from a verb into a noun, and is pluralized with an *s*, following Spanish grammar. Today, Quechua speakers also use *s* to mark plural nouns, see MUYSKEN, Pieter. *Multilingüismo y lenguaje mezclado en las minas de Potosí (Bolivia)*. *Linguística*, Lima, v. 33, n. 2, p. 105, 2017.

52 TANDETER, op. cit., p. 83.

53 BAKEWELL, op. cit., p. 153. Cites ABNB Minas 125.13 (Potosí, 12/9/1594), but archival naming conventions changed after his book was published. The file currently called Minas 125.13 is a 72-folio inquiry from 1654-1656 into the collapse of a mine owned by *potosino* don Juan Bautista de Jáuregui. I thank Nelva Celia Delgadillo Hurtado of the ABNB for trying to locate the file on Alonso Yana, a *mitayo* who served as a *siquepiche* during his turn and an ore picker on his own time. If future scholars can locate the case, it would be interesting to see how Yana describes his work in and outside of the *mita* and how his labor is understood by metalworkers and colonial officials.

54 POVEA MORENO, Isabel M. Los barreteros: Trabajo cualificado y sus variantes en el espacio minero de la monarquía hispánica. In: CASTRO GUTIÉRREZ, Felipe; POVEA MORENO, Isabel M. (org.), **Los oficios en las sociedades indígenas**. México: Universidad Nacional Autónoma de México e Instituto de Investigaciones Históricas, 2020. p. 134.

55 Ibidem, pp. 128-134.

56 BAKEWELL, op. cit., p. 134.

57 CALVO PÉREZ, Julio. Sobre préstamos léxicos del quechua al español (desde el entorno peruano). In: HERNÁNDEZ ALONSO, César; CASTAÑEDA CIRILO, Leticia (eds.), **El español de América: Acta del VI Congreso Internacional de ‘El español en América.’** Tordesillas: Diputación de Valladolid, 2005. pp. 239 e 248.

58 Anonymous, “Memoria De Los Yndios q- para todos servicios y ministerios estan Repartidos y señalados para este asiento y minas de Guancauelica y los Corregimientos de donde bienen,” pp. 546-7, in **Memorias y gobierno de las minas de azogue del Perú, su descubrimiento y beneficio en diversos tiempos**, s. XVI-XVII, Biblioteca Nacional de España (BNE), MSS 3041, 593 folios: 546v-547r. ZAVALA, Silvio. **El servicio personal de los indios en el Perú**. México: El Colegio de México, 1979. p. 61, believes that the undated

A governor's report from Potosí, written almost 150 years later, similarly places high-skilled and low-skilled workers into in a common class of "capchas" (*kajchas*) who knew where to find "the good metal" within particular mines.⁵⁹ These workers included *mitayos*, *barreteros*, *apiris*, and *pongos*, a term derived from the Quechua *punku*, "door/doorman," referring to their control of keys to the warehouses where raw materials and written records of silver production were stored.⁶⁰

The words of administrators must be interpreted carefully, since mine owners frequently manipulated colonial officials in order to secure reports that were favorable to their interests. Writing from Lima on March 18, 1616, six months before jurist Juan de Solórzano Pereira was installed as governor of the mines of Huancavelica, don Pedro Osore de Ulloa remarked that mine owners forced him to "hazer informacion de que estaba en mejor estado que auia tenido jamas" (report that it was in a better state than anyone had ever seen).⁶¹ Even reading these reports with a large grain of salt, it is clear that we cannot assess the skills of coerced or free miners based on the positions that they occupied.

A clear distinction between unskilled forced labor and skilled wage labor depends upon our ability to separate categories of knowledge and work, but the porous borders of free and coerced labor in colonial Potosí make that all but impossible. In the Andes, if not throughout the early Americas, supposedly "high-skilled" positions like ore pickers could and were filled by miners with little experience, and so-called "low-skilled" positions like porters were filled by well-paid independent wage earners. Instead of continuing to assess workers' skills through their earnings – which is a reasonable thing to do in other economic sectors, but not within violence-based systems like extractive colonial-era mining industries – this article offers another way of understanding what work may have meant to *mitayos*. Looking outside of economic structures and into the complex political and interpersonal web of relationships within Andean communities, as the following late eighteenth-century case study does, aims to offer insights into the histories of *mitayos*, their families, and their communities.

Forced Labor in Community Contexts

ALTHOUGH IT IS DIFFICULT to access the voices and experiences of *mitayos* – a largely unlettered group of workers who are counted as physical bodies and units of labor, but not often treated with narrative richness or human complexity – legal disputes within Andean communities offer some insight. Because Spanish colonial law requires a plurality of voices and evidentiary forms,

report was written shortly after 1615, when viceroy Juan de Mendoza left office.

59 TANDETER, op. cit., p. 109.

60 GARCÍA DE LLANOS. **Diccionario y maneras de hablar que se usan en las minas y sus labores en los ingenios y beneficios de los metales**. MENDOZA, Gunnar; SAIGNES, Thierry (ed.). La Paz: Museo Nacional de Etnografía y Folklore, 1983 [1609]. pp. 105-106.

61 Biblioteca Nacional de España (BNE), MSS 3041, folios 164-171v: fol. 166r Pedro Osorio de Ulla, "Relacion de los minerales de azogue que su Mag^d tiene en Guan^{ca}," Memorias y gobierno de las minas de azogue del Perú.

including witness testimonies, petitions from demandants, rebuttals by defendants, decrees, and signed works from local authorities, legal cases allow us to peek behind the lists and tallies that populate most of the records from the mining industry and to instead provide texture and nuance to the stories of coerced workers. The case below offers an example of this approach.

On September 17, 1783, one year after the suppression of the rebellions led by by Túpac Amaru and Túpac Catari, a Quechua-speaking widow filed suit against her cacique, claiming that he unfairly took her land and awarded it to five *mitayos* who were serving in Potosí. The 32-folio case dragged on until 1791, during which time the cacique, his second-in-command, the widow, her new Spanish husband, and officials in La Plata debated the right of Pascuala Almendras and the *mitayos* to possess the lands where maize and ají chilis grew. Writing from the Valley of Guaycota, Juan Cárdenas, the cacique and principal governor of Macha San Marcos and *Urucarasi*, in the province of Chayanta, about 150 kilometers north of the Cerro Rico, called Nicolás Espinosa and Pascuala Almendras before him to read the act (*auto*) declared by don Diego Velasco, the region's chief magistrate (*justicia mayor*) and supervisor of mines and registries (*alcalde menor de minas y registros*). In the act, which Cárdenas read to Pascuala in “su idioma” (her language), Velasco explained that “todos Tributarios deben obtener el respectivo terreno con respecto a su calidad” (all Tribute payers should obtain the respective territory that conforms to their station). Cárdenas's predecessor, don Pablo Chávez, used the law to take land from Pascuala's family and award it to five *mitayos* who were in Potosí.⁶²

According to Cárdenas, the land of Uchuculla Pampa, which grew about five pots' worth of maize, were equivalent to the value of the labor that the *mitayos* contributed to the community. The men were entitled to the lands so long as they maintained their service in the *mita*; their labor entitled them to participate in civic life as holders of goods in common, like agriculturally-rich land. Because Nicolás Espinosa was not Indigenous (“por no ser Originario”), and because he had no proof that neither he nor Pascuala Almendras's deceased parents, Pedro Almendras and Francisca Mendoza, both “Indios originarios y afinados Vesinos de la estancia y lugar de Guaycota” (Indigenous and upstanding citizens of the estate and place of Guaycota), had paid taxes, the cacique insisted that his predecessor was within his right to confiscate the land, and he to enforce the policy.⁶³

Roughly two months later, on November 14, 1783, the couple denounced Juan Cárdenas for appropriating their land. In a statement that switches from “we,” when discussing land claims, and “I” to show proof of tax payments, but one that is signed only by the husband, the couple declared that the chief took their lands after the death of “nr^{os} padres” (our parents).

62 Archivo y Biblioteca Nacionales de Bolivia (ABNB), Expedientes Coloniales (EC), 1791.86 (14/11/1783, Anconaza – 28/11/1791, La Plata), folios 1r-3r. Given that eighteenth-century *mitayos* from the *ayllu* of Chayanta lived in the San Francisco parish of Potosí, it is reasonable to think that these unnamed workers did, too, although the case does not mention their location outside of the ancestral community, see BARRAGÁN, op. cit., p. 19.

63 ABNB, EC, 1791.86, folio 3v.

They went on to allege that Cárdenas used a moment of family tragedy to take advantage of the lands and their fruits, all while turning a blind eye to the tribute “q^e yo estoi actualmente pagando” (that I am currently paying) and the other obligations met “de mi cargo” (of my charge).⁶⁴ Nicolás Espinosa and Pascuala Almendras considered that their twice-annual tax payments were sufficient to maintain their ties to and claims over the land. The caciques disagreed. For the leaders, the right to land was about more than just payment; belonging to the community, and holding land that was a communal good, was a privilege earned through labor and time, not cash transfers. Although the couple and the *mitayos* all paid their taxes in silver, the two parties had fundamentally different relationships to the metal and, thus, to the role that it served in upholding community life and lands.

Nicolás Espinosa concluded the petition by presenting a document signed by *justicia mayor* Diego Velasco on September 11, 1783, which confirmed that don Pablo Chávez had overstepped his authority. Subdelegate Judge don Francisco Arias investigated the dispute. On June 25, 1784, he ruled in agreement with Velasco, ordering Juan Cárdenas to return the lands to Nicolás Espinosa and Pascuala Almendras. Two days later, writing once more from Urucarasi, Cárdenas agreed to return the disputed territory to Espinosa and his heirs (“pa el y pa sus descendientes”), omitting Almendras’s name altogether. This omission may have been a gendered silencing of women from the legal process, which was otherwise conducted entirely among men, or it may have been a keen strategy on his part, given that the couple’s claims were tied largely to Pascuala Almendras’s family relationships, not Nicolás Espinosa’s contributions. Her ancestry was never disputed, but his record of tax payments and service as a mail carrier (“Maestre de Postas”) in the town of Macha were debated against the merits of *mitayo* labor to determine the right to communal goods.⁶⁵ In a recent study of the creation of communal forms of sovereignty in the eighteenth-century Andes, historian S. Elizabeth Penry notes that postal service was “an important, highly ritualized civic duty centered on the towns and its annexes,”⁶⁶ and the mail played a critical role in facilitating communication and connections between diverse pueblos. Pascuala Almendras strategically shows how a non-Native man’s labor had been used to support the public good, in the same way that Cárdenas explained the value of *mitayo* labor for the community. Her case, as Penry argues, is one of many such disputes in which carrying mail is cited to support land claims, ascend political ranks, and show “loyalty to the community and to the king.”⁶⁷ It may suggest that she had a robust network outside of Guaycota helping her to develop legal and discursive strategies that were known to resonate with colonial officials, that postal service was inseparable from community life in many towns throughout the late-colonial Andes, or a combination thereof.

64 ABNB, EC, 1791.86, folios 3r-3v.

65 ABNB, EC, 1791.86, folios 3v-5v.

66 PENRY, op. cit., p. 126.

67 Ibidem, p. 127.

In the end, before witnesses, Cárdenas declared that Espinosa could hold the land in his new family insofar as he paid his fair share, “En virtud de ser originario que Tributa” (By virtue of being a Native man who Tributes). The Indigenous governor reminded colonial officials that Spanish law stipulated that for caciques like him, “devemos dar tierras a los tributarios pa su labranza y Ayuda a los Rles tributos y otros servicios correspondientes como á Originario” (we should give land to the tribute payers for their tillage and Help for the Royal tributes and other services that correspond to Native people).⁶⁸ Even as he accepted an outcome that was unfavorable to his side, Juan Cárdenas used the legal space afforded to him to assert his understanding of the connections between land, labor, and community, and his political power to nurture those relationships. He, like Pascuala Almendras and the other Andean women and men who took to the courts in the late colonial period, understood that participation in the legal system “was a political ritual” for all parties involved.⁶⁹

Then, the same day, in a statement that Pascuala Almendras would later challenge for going unfulfilled, Cárdenas signed a document that awarded additional territory to the couple in exchange for their paying a higher level of tribute. As the *cacique* explained, “En virtud de ser originario” (By virtue of being a Native man), Nicolás Espinosa, elsewhere identified in the case file as Spanish (*español*), was entitled not only to Pascuala Almendras’s ancestral lands of Uchuculla Pampa (*chile land*), but also to those of Llanca Pampa (*clay land*), which grows three pots’ worth of maize and was nestled between the fields of community members Silvestre Colque, just below, and Vicente Carvajal, just above.⁷⁰ In returning the traditional land of the Almendras family, and awarding a new parcel to the Spanish husband and Indigenous wife, Juan Cárdenas extended a kind of kinship offering to the couple, one in which their lands were defined through agricultural production and relationships with neighbors. The cacique also named Nicolás Espinosa, for the first time, as a Native man, perhaps in recognition of his responsibility to pay tribute, his connection to the community through Pascuala Almendras and their children, his landed position between two other Andean men, or some combination thereof.

It would seem that matters had been settled by June of 1784, but the next document in the case file, one written by the protector of the Indians, Lorenzo Josef de Laguna, and signed with Pascuala Almendras on August 4, 1791, from La Plata, makes it clear that the cacique never delivered on his promises to return the lands or recognize the mixed-race family. Seven years later, having watched her chief drag his feet and use his power to reward *mitayos*, Pascuala Almendras took matters into her own hands. Mobilizing Spanish concepts

68 ABNB, EC, 1791.86, folios 5r-5v.

69 PENRY, op. cit., p. 126.

70 ABNB, EC, 1791.86, folios 5v-6r (Uchulla Pampa, Llanca Pampa), 10v (“Nicolas Espinosa espanol”). My best guess is that the name *Uchuculla* is derived from the Quechua *uchu*, or what colonial sources call “El comun agi” (the common chile) GONZÁLEZ HOLGUÍN, op. cit., p. 350. His definition of *llanka* as “Greda, o tierra pegajosa, o barro de hacer ollas,” suggests that unlike the chili-rich soils of Uchulla Pampa, the lands of Llanca Pampa could have had the kind of clay-like soil that could be difficult for agriculture but useful for pottery (205).

of femininity and traditional legal protections for *miserables* (the wretched), she presented herself through her protector as a poor widow with children who needed support from the Crown. Although the legal category of *miserable* existed in medieval Iberia, its invocation in colonial courts skyrocketed in the 1580s in response to religious initiatives and imperial desires to centralize the legal system.⁷¹ She threw herself before “la piadosa y caritativa proteccion de VS” (the pious and charitable protection of Your Lordship) to remind the Crown of its obligations to “las viudas y huerfanos de los Yndios tributarios, y originarios, que quedan” (the widows and orphans of the originary tribute-paying Indians who remain). Here, she explicitly takes on the *cacique*’s valuing the labor of *mitayos* outside of the pueblo over the taxes paid by people in it. Switching to first-person plural, she then alleged that Cárdenas was envious of the work the couple had put into the land (“la embidia y codicia del trabajo, que hemos impendido en la labranza de estas tierras”). She concluded with the declaration that the leader’s violent dispossession dismissed her father’s legacy of discovering and working community lands at his own expense (“tierras de las que mi Padre posejo de la comunidad, rozando, y descubriendolas, a esfuerzos de su personal trabajo”) and it ignored her family’s history of tribute payments, “which I have verified” (“lo que asi he verificado”).⁷²

In her statement, taken that same day, but signed only with her name because her husband was sick at home, Almendras emphasized her family’s history on the land “Como Originarios” (as Indians), and her rightful status as inheritor of them (“las tierras Ereditarias de mi asignacion pertenecientes a mi Origen,” “por ser Ereditaria, de mis Padres”). She also insisted on moving quickly toward a decision, since it was planting season.⁷³ In a case that was now in its eighth year, Pascuala Almendras used the realities of agricultural cycles to spur colonial authorities to do their jobs, as she saw it. She also presented receipts. Nearly half of the case file consists of receipts of tribute payments made by Nicolás Espinosa, dating as far back as 1769 and going through 1791.⁷⁴ One record was signed at Christmas of 1789 by Silvestre Colque, the man who would be their new neighbor, if the lands of Llanca Pampa were ever redistributed.⁷⁵ Another deposit was signed by Juan Cárdenas himself, on 29 January, 1784, six months before colonial officials would begin their investigation into the competing land claims of Pascuala Almendras and the unnamed *mitayos* of Chayanta.⁷⁶

In response to Pascuala Almendras’s range of legal strategies, from positioning herself as a “miserable Indian woman” to passionately describing her family’s connection with the land and documenting years of tax payments, Juan Cárdenas took his turn arguing for the rights of the *mitayos* to possess and work the land. Her chief fought just as hard as she had.

71 CUNILL, Caroline. El indio miserable: nacimiento de la teoría legal en la América colonial del siglo XVI. **Cuadernos Inter.c.a.Mbio sobre Centroamérica y el Caribe**, San José, v. 9, p. 229-48, 2011. See also, BIGELOW, op. cit., pp. 359-360.

72 ABNB, EC, 1791.86, folios 7r-8r.

73 ABNB, EC, 1791.86, folios 9r-9v.

74 ABNB, EC, 1791.86, folios 10v-28r.

75 ABNB, EC, 1791.86, folio 16.

76 ABNB, EC, 1791.86, folio 22.

On October 18, 1791, writing from the town of Sacaca, he insisted that the couple's name could not be found in records of tribute payers and that, as such, it was a sign of good administration ("el zelo de mi administracion") to award the title to five landless *mitayos* who were taking their turns in Potosí. In Juan Cárdenas's range of legal strategies, which included rephrasing Spanish laws, insisting on Indigenous land claims, and dragging his feet in non-compliance with colonial orders, we see a small indication of what *mita* service may have meant to the five workers whose chief advocated for them in their absence. Their labor was not just about taxes, although revenue was an important part of the story. The case suggests that *mita* service played a key role in the exercise of social norms about fairness, turn taking, and sharing, all of which were informed by Indigenous Andean understandings of reciprocity. In donating their labor and knowledge to the community, *mitayos* earned real political favor from their chief and secured rights to land, a resource that was as material as it was sacred. This is what it means to belong to a people.

They lost the case, in as far as an order was signed in La Plata on November 28, 1791, for Juan Cárdenas to return the lands to Pascuala Almendras and Nicolás Espinosa. Whether he found other legal strategies to delay the transfer or whether he finally complied with colonial orders is hard to know, because the file ends with all documents being delivered to Pascuala Almendras ("Y se encargo a la Ind^a"). What the case does reveal, though, is the importance of analyzing the *mita* from the perspective of the communities who provided laborers. Whether labor is skilled or unskilled, earning X or Y pesos, may not have mattered as much to *mitayos* as did their relationships at home, with their leaders, with each other, and with the land.

Conclusions

SCHOLARS HAVE LONG wondered why underpaid *mitayos*, who were supposedly unskilled laborers, were found to be significantly more productive than better paid hired hands.⁷⁷ Although the reasons are sure to vary by time and place, the late-eighteenth century dispute between Pascuala Almendras and Juan Cárdenas in the province of Chayanta offers some insight into *mitayos*' motivation to work productively in extremely violent conditions. Although we never hear from the miners themselves, the actions of their *cacique* indicate that taking turns in the *mita* was a critical way to show how a family's time, energy, and ideas were in and of a community. Perhaps because of Western conditioning in economic theories of supply and demand, or searches for utility and profit, and perhaps because of the ethical urgency to document the destructive, dehumanizing effects of the *mita*, scholars have not often examined the knowledge and agency of *mitayos*. The traditional historiographic emphasis on skills, as assessed through wages, fails to consider deeper relationships between knowledge and work,

⁷⁷ TANDETER, op. cit., p. 83. BAKEWELL, op. cit., p. 122.

a relationship that combines technical practices, scientific information, spiritual knowing, and collective governance and decision-making.

Historians of early modern science and technology have documented the embodied knowledge systems that European artisans perfected over time,⁷⁸ and they explain the intimate relationships that artisans hold with their materials. As one scholar put it, “matter never leaves meaning untouched,”⁷⁹ or, it is impossible to work with something in your hands without imprinting your own significance into it, and without it leaving a mark on your own ways of thinking, doing, and being. The challenges of colonial archives – their biases, their fragmentation, their excessive documentation of certain things and intentional silences on other matters – have made it difficult to apply insights from artisan histories of Europe to other early modern contexts, especially those involving forced labor. But such advances have happened in other areas of colonial Latin American history. For example, by thinking creatively about source materials, scholars have developed methods to identify African and African descendent knowledge production within the institution of slavery, from the adaption of African foods and plants to new ecosystems in North America⁸⁰ to the strategic application of medical herbs in the Caribbean.⁸¹ But histories of Indigenous scientific knowledge, including my own,⁸² have not often focused on the technical competencies of metalworkers in violence-based systems like the *mita*, but have instead tended to study the diverse ways in which Spanish sources and actors borrowed from and employed Indigenous ways of knowing.⁸³

This article, as part of the wider conversation made possible by this dossier, suggests that the time is right to reconsider the relationship of knowledge and work in colonial extractive industries. Following in what Tatiana Seijas and Dana Velasco Murillo call “The New Mining and Minting History,”⁸⁴ which builds from the foundational work in social and labor history of the 1980s-2000s, and now extending into other areas of environmental history, the history of science and technology, gender history, and urban history, we can begin to ask new kinds of questions about the meaning of metalwork in the colonial period. For example, much work remains to be done on how Indigenous miners understood their

78 SMITH, Pamela H. **The Body of the Artisan: Art and Experience in the Scientific Revolution**. Chicago: University of Chicago Press, 2004.

79 PORTER, James I. **The Origins of Aesthetic Thought in Ancient Greece: Matter, Sensation, and Experience**. New York: Cambridge University Press, 2010. p. 11.

80 CARNEY, Judith Ann. **Black Rice: The African Origins of Rice Cultivation in the Americas**. Cambridge: Harvard University Press, 2001.

81 GÓMEZ, Pablo F. **The Experiential Caribbean: Creating Knowledge and Healing in the Early Modern Atlantic**. Chapel Hill: University of North Carolina Press, 2017.

82 BIGELOW, op. cit.

83 NORTON, Marcy. Subaltern Technologies and Early Modernity in the Atlantic World. **Colonial Latin American Review**, Albuquerque, v. 26, n. 1, p. 18-38, 2017. SCOTT, Heidi V. Between Potosí and Nuevo Potosí: Mineral Riches and Observations of Nature in the Colonial Andes, ca. 1500-1800. In: BLANCO, María del Pilar; PAGE, Joanna (org.). **Geopolitics, Culture, and the Scientific Imaginary in Latin America**. Gainesville: University Press of Florida, 2020. pp. 117-132.

84 SEIJAS, Tatiana; VELASCO MURILLO, Dana (ed.). Introduction: A New Mining and Minting History for the Americas. **Colonial Latin American Review**, Albuquerque, v. 30, Special Issue 4, p. 485-497, 2021.

relationships to sacred metals after the imposition of Spanish colonial rule, whether the presence of African minters shaped Indigenous miners' relationships to metals, and whether insights from the colonial Andean silver industry can be applied to other mining centers in Mexico, the Caribbean, and beyond Latin America. Such research could help to create, in some small way, a path toward humanizing the women, men, and families who made their lives within the extractive systems that sought to anonymize them, erase their knowledge, and deny their dignity.

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