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Multilingualism and mixed language in the mines of Potosí (Bolivia)

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Abstract: Using the methodology of historical sociolinguistics, this article explores multilingualism and language contact in the mines of Potosí (Bolivia) in the colonial period. Potosí was the destination of massive migration during its economic heydays around 1610 and one of the largest cities in the Western hemisphere at the time. In the mines special codes were developed, with a specialized lexicon that contains words from different languages. This lexicon was so different that the first vocabulary of the mining language was written in 1610, and many have followed from that date onward. Quechua most probably played a key role as intermediary language between two forms of speaking: the indigenous mining language of the free workers, *yanaconas* and *mingas*, probably a mix of Spanish and Quechua, and the language of the forced workers, *mitayos*, possibly a mix of Aymara and Quechua. The similarities between Aymara and Quechua must have contributed to this possibility of an intermediary language.

Keywords: Quechua, Aymara, Spanish, mines, language mixing, Potosí

*Aunque reviente el demonio
Siempre valdrá el antimonio
Adios, adios pues estaño
Sólo valdrás este año*

*Patiño era rumpero
Aramayo el barretero
El gringo Hoeschild bandido
En ckullu chua los ha fundido*

(Mining song, cited in Camargo Blacutt 1968: 387)¹

¹ [Although the devil may burst, always will antimony be valuable. Goodbye, goodbye then tin, only this year you are still worth something. Patiño was the tracker, Aramayo the mineral seeker, the gringo Hoeschild the bandit, in an earthen bowl he (the devil) melted them.] (Patiño, Ayamayo, and Hoeschild were tin barons.)

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1 Introduction

The Bolivian city Villa de Potosí, founded in 1546, rapidly grew into a very important silver mining center and in fact into a key city in the Spanish colonial imperial economy during the period lasting from the sixteenth to the eighteenth century (see Figure 1). The Spanish claim that before their arrival there was just a small village there, but actually there probably was important pre-Hispanic mining activity. For linguists interested in multilingualism and language contact, the city is of interest for two reasons.

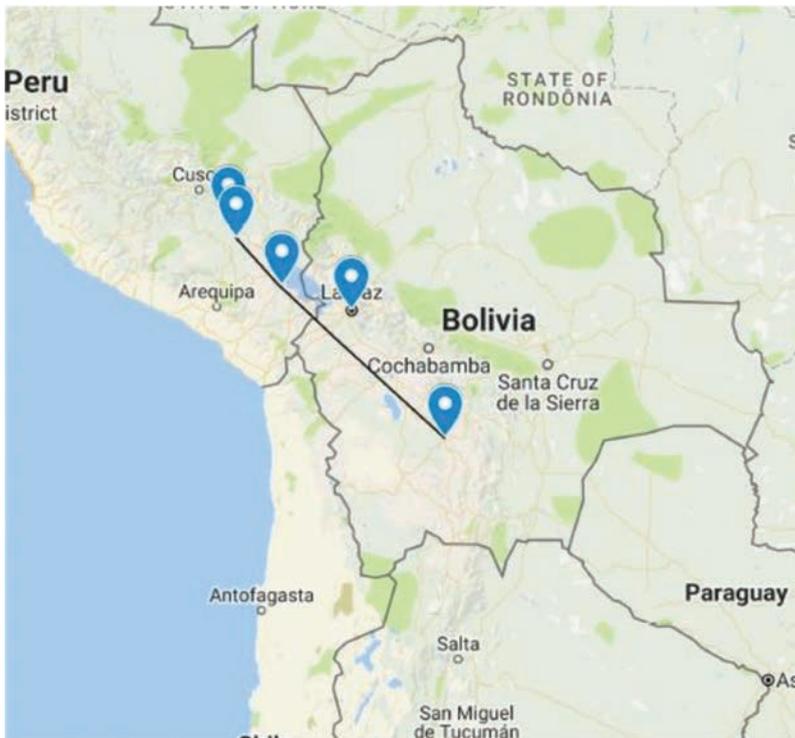


Figure 1: The location of the main mining centers and recruitment areas in colonial Bolivia.

First, it was the target of massive migration in the period of its economic flourishing and in fact was one of the largest cities in the Western world in 1610. As argued by Assadourian et al. (1980: 13), Potosí was not only an important production center, but also a large labor market which attracted vast

numbers of indigenous workers from all over the region (see Table 1). The migrations involved populations with many different native language backgrounds and types of legal status (Amerindian, European, and African), and therefore the city must have been a cauldron of multilingual language use.

Table 1: Overview of the demographic growth of the city until 1620 (compiled from various sources), with data from 1770.*

1545	Foundation of the Imperial Villa de Potosí			
	Spanish	Indigenous	Africans	Total
1546	170	3,000		
1547				14,000
1561		20,000		
1573		4,300 <i>mitayos</i> 4,200 <i>ayllu Indians</i> 900 <i>yanaconas</i>		
1577	2,000	20,000		
1603		60,000		
1611		76,000	6,000	160,000
1620		80,000 (without counting women and children)		
1770				22–30,000

* Empty cells mean absence of information. Information about categories of indigenous work force is given in the text.

Second, a separate code developed very rapidly in the mines, with a specialized lexicon that contains words from different languages. This lexicon was so different (and the mines were so important) that the first vocabulary of the language of the mines was written in 1610, and many have followed since that date.

In this article I will explore these two themes, using the methodology of historical sociolinguistics and trying to reconstruct the relation between the languages in the past, on the base of written documents and what we know of the history of the mines. Section 2 is centered on the development of the city since the prehistoric period and the documented patterns of migration, while Section 3 describes the social organization of the mines and the division of labor. In Section 4 I analyze what is known about the use of the language in the city in earlier periods. Section 5 presents the different sources for the language of the mines, and in Section 6 I analyze these sources linguistically in terms of language mixing. In Section 7 I briefly sketch metaphors and rituals in the

mines, and Section 8, finally, concludes and sketches some implications of the materials for the history of Bolivian languages in general. I will also briefly contrast the language of the mines of Potosí with what we know about mining languages in other places.

In historical sociolinguistics an attempt is made to reconstruct the social structure of linguistic communities, multilingual or monolingual, using the conceptual framework of sociolinguistics. Central notions in such a framework include network, stratification, identity, and code-switching.

Currently, there still are mining operations in the region, but of a totally different nature and scale from the earlier mining. This article is the first one dedicated to this topic and hence mostly descriptive and exploratory. Further work will be needed to situate these data to the wider ethno-historical context, hopefully based on more detailed archival research, and make comparison with similar phenomena elsewhere possible.

2 The urban development of Potosí and the languages of Bolivia

Silver mining was a key element in the Spanish colonial system, and Potosí came to play a central role in the colonial economy. It is hard to exaggerate its importance. The peak of the production of silver in Potosí was reached around 1590, and afterwards it diminished, with a relative plateau between 1661 and 1691 (Bakewell 1973: 26–27). It was a highly capitalist but extremely lucrative enterprise. Bakewell describes the first true capitalist entrepreneur of these mines, a man whose life spanned a mayor part of the seventeenth century and whose activities bear testimony to the capitalist nature of silver mining.

Table 1 presents data about the demographic development of the Villa from its foundation until the beginning of the seventeenth century, the period of most interest from our point of view. I add the data for 1770 to show that after the peak of silver production, the population diminished considerably. In the early seventeenth century, the import of enslaved Africans taken from the African West Coast started increasing.

There was a lot of construction in these years in the city, as also evidenced by the abundance of extant churches from this period. To gain an idea of what these numbers implied, consider the population in different European cities in the same period, as shown in Table 2.

Table 2: Population of European cities around 1600.

City	Year	Population
London	1600	250,000
Paris	1600	245,000
Rome	1600	100,000
Seville	End of sixteenth century	100,000

Potosí, then, was the third city in population in the Western world in the years of its flourishing, after a dizzying growth. In Europe we also find cases of rapid development only slightly later. The population of Amsterdam, for instance, reached 175,000 in 1650, from 65,000 in 1600.

To better comprehend what follows, I now sketch the language situation in Alto Peru, the Spanish colonial denomination for the region comprising Southern Peru and Highland Bolivia in the early colonial period. Although there were close to forty indigenous languages spoken in Bolivia at the time of the Spanish invasion, probably four languages or language families were important in the mines. The distinction between language and language family is not always easy to make because we do not know exactly how much internal variation there was in the families and the members relevant to the mines, so we will treat them as languages here. These are Quechua, Aymara, Puquina, and Uru. Although the first three were recognized as *lengua general* ‘general language’ and were hence important as missionary languages in the early colonial period, it is clear that Quechua had a special status. Currently, Aymara and Quechua are important languages in the Bolivian highlands, Puquina has died out, and some varieties of Uru are documented in specific villages near the waterfront associated with Lake Titicaca and the river system that feeds it. Puquina was mostly spoken in places relatively far away from Potosí, and it does not figure in the written sources for the mines and language use in these mines. There is a consensus among specialists that the languages mentioned are not directly related (Adelaar and Muysken 2004). Puquina and Uru have borrowed many Quechua and Aymara words however (and Aymara may have borrowed Puquina words as well), and Aymara and Quechua have a strikingly similar typological profile, which has caused many scholars to speculate on their possible genealogical relationship. This profile involves SOV and modifier-noun word order, verbal affixes to mark subordination, nominal case marking, elaborate verbal morphology, few vowels (/a/, /i/, /u/), and uvular stops, among many other things.

3 The organization of the work in the mines and the system of *mitas*

Central to understanding the way the mining language developed in Potosí is an insight into the complex organization of the mining system. I will first discuss the technologies involved, then the organization of labor, the recruitment practices from all over Alto Peru, and the stratification of the work force. It is important to understand the profusion of different professions within the mining system articulated with origin and ethnicity.

Mining in Potosí passed through four technological phases, listed in Table 3 with an indication of the main technique used.

Table 3: Technological phases of mining in Potosí.

	Year	Phase	Main technique used
I	... –1573	Indigenous artisan mining	* <i>huayra</i> (wind) oven
II	1573–1850	Pre-industrial	*mix with mercury (<i>azogue</i>)
III	1850–1980	Industrial	*mechanical processing
IV	1980- ...	Mega-mining	*very large bulldozers and crunchers

According to Medrano Ossío (1968: 2) the pre-Incaic mining, Phase I in the zone of Porco started in 1250–1256, and there was a strong Incaic mining presence in the region already. As Langue and Salazar-Soler (1997: 377) indicate, the first indigenous workers came from Porco, which was an Incaic center.

In 1545–1565 there was already a very high level of production in the mines (Cole 1985: 1). In 1547, the official date of the foundation of the Villa Imperial de Potosí, there were already 14,000 inhabitants (Cole 1985: 3). Until 1560 the miners had come to Potosí on their own account, with the dream of immense earnings. One year after the founding of the Spanish mine, in 1546, there were already 170 Spanish and 3,000 indigenous people (Cole 1985: 3).

From the beginning, the mining was dominated by the indigenous people; they used the *guayra* or *huayra* (wind) oven to get the silver out of the *tacana* (silver ore) mineral (*taca-na* literally means [hit-NMLZ] in Quechua, where the nominalized form can be an instrument). At a given moment there were 15,000 *huayra* ovens (Cole 1985: 3). Many of the first indigenous workers were *yanacunas* – artisans, servants of the Incas, and others not affiliated with a specific *ayllu* (family, small ethnic group). There were also *vara* Indians (*vara* = Spanish

‘staff’, a measure of mineral vein), assigned a specific part of the vein to work. On the other hand, there was another group of unskilled workers sent by their *kurakas* (chiefs) to pay the tribute of the *ayllu*, the *ayllu* Indians (Cole 1985: 3–4).

For our story, Phase II was particularly important. After the initial period, the very influential Viceroy Francisco de Toledo, who was appointed by the Spanish Crown in 1569, organized the *mitas* (see below) to supply the mines with a work force, and this lasted until the Liberator Simon de Bolivar abolished this system in 1825 (Cole 1985: 1). *Mita* comes from the Quechua word *mit’a* that means ‘turn’ or ‘period of service’. Only the Spanish were the mine owners at this point and they were very much committed to drawing profit from the mines (Cole 1985: 4). The skilled workers received a part of the silver, while the indigenous people from the *ayllus* earned a fixed salary for their work (Cole 1985: 4). El Viceroy organized the *mita* system through which each *kuraka* was obliged to send one seventh of the tributary population to work in the mines (Cole 1985: 7). This was highly profitable, since these workers weren’t compensated.

In 1561, there were 20,000 indigenous people in Potosí, of whom only 300 worked in the mines. It was simply not sufficiently profitable, due to the quality of the mineral (Cole 1985: 4). In 1572 the new technique of the *amalgama* ‘mix’ was introduced, using mercury, that could be applied to minerals that were too poor for the technique of *huayra* (Cole 1985: 7).

The mercury was imported from Huancavelica, that fell under the monopoly of the Spanish Crown (Cole 1985: 9). In 1573 around 1300 *mitayos* (Indians subject to the *mita*) from the region of La Paz arrived (Cole 1985: 9), and 500 from Chucuito (there were already many from Chucuito in Potosí). Others came from Canas and Canches and from Porco; the total was 4,300. There were also 4,200 *ayllu* Indians and 900 *yanaconas*. They worked in shifts of three weeks and in the two free weeks they could work for their own account. Nonetheless, 1,000 *mitayos* that were resting could be called to work for other miners.

In 1575 a new subdivision of the *mita* was made by the Viceroy (Cole 1985: 12), including the following groups that had to pay tribute with their work force:

- 17% from La Plata
- 16% from near la Paz
- 15% from near Cuzco
- 13% from Canas and Canches

Many of the *mitayos* probably had an Aymara background. The ethnic group the Uros had to contribute two persons for each *mitayo*. There were 615 of them in the mines, 2,498 for the *ingenios* ‘mineral refineries’, others for services; some 4,000 in total per week.

The *mitayos* lived in *rancherías* (clusters of houses) divided by region of origin (Cole 1985: 14). There were two *veedores* ‘overseers’, an *alcalde mayor* ‘formal mayor’ of the mines, a *protector de naturales* (a protector of the Indians), six *capitanes enteradores* (*kurakas* that accompanied the *mitayos*). The *kapcha* was installed – a permit to work the mines for one’s own account from Saturday afternoon until Monday morning. The Plaza Ghatu (< Quechua *qhatu* ‘market’) of Potosí was a large indigenous mineral and silver market.

In 1577 there were already 2,000 Spanish and 20,000 indigenous workers (Cole 1985: 15), and a guild of mercury workers was founded. The control of the mining production was not in the hands of the indigenous workers any more in 1580 (Cole 1985: 18). Starting in 1578 the *mita gruesa* (major *mita*) was 14,296 Indians, working in three shifts of 4,426 (Cole 1985: 17). The provinces involved in this *mita* were Chichas, Porco, Chayanta, Cochabamba, Paria, Carangas, Sicasica, Pacajes, Omasuyos, Chucuito, Paucarcolla, Lampa, Asangaro, Canas and Canches, Quispichanches, and Condesuyos. The Uros had to send 11% of their tributary population to the mines. The *mingas* did not want to do the most dangerous jobs anymore (Cole 1985: 18), leaving these to the *mitayos*.

The golden years for Potosí were from 1575 until 1610; afterwards there was a consistent decline (Cole 1985: 16). We focus here on the period 1600–1610. In the second technological phase, after 1575, there are two main categories of workers underground: *barreteros* (directly extracting the mineral from the stone walls) and *cargadores* or *apiris* (carrying the mineral to the outside) (Assadourian et al. 1980: 21), but as the process becomes more complex we see that in 1603 the situation had already changed a lot, as shown in Table 4, with all the types of workers, many of them supplying the mines from the outside.

It is very significant for understanding the sociolinguistic situation of the mines to realize that between the different types of indigenous workers there were vast differences in income, as shown in Table 5. Notice that the *barreteros*, extracting the mineral, earned almost ten times as much as the *mitayos*.

In this work I have not been able to say more about the importation of enslaved Africans. Nonetheless, it is clear that they also played an important role. This topic will have to be treated in later work.

4 The mining vocabularies

It is important to bear in mind that the work in and around the mines has four important features: (a) it requires specialized knowledge and is divided over many types of workers; (b) it is dangerous; (c) work in the mines requires close cooperation; and (d) work in the mines is outside the ordinary human habitat.

Table 4: Number of workers in different jobs in 1603 (based on Cole 1985, with additional data of Medrano Ossio [1968: 29]).

<i>Mitayos</i> in the mines working as <i>apiris</i> , load bearers	4,000
<i>Mingas</i> in the mines	600
<i>Mingas</i> cleaning the gold (with fixed wages)	400+
Indigenous men and women selecting the mineral at the exit of the mine	1,000
<i>Mitayos</i> working in the <i>ingenios</i> (metal processing stations, mills)	600
<i>Mingas</i> working in the <i>ingenios</i>	4,000
Indigenous men and women refining the <i>lomas</i> (mix of mercury and ground mineral)	3,000
Indigenous people working with llamas, bringing the mineral from the mine to the <i>ingenio</i>	320
Indigenous people bringing salt to Potosí	180
<i>Mingas</i> bringing salt to Potosí	1,000
Indigenous merchants bringing firewood	1,000
Indigenous people bringing llama dung to burn	500
Indigenous people bringing llama dung to melt the ore	200
Indigenous people making and bringing carbonized wood	1,000
Indigenous people making velas	200
Indigenous people bringing madera	10,000
Total	19,000+

Table 5: Wages of the miners in 1603 (Cole 1985: 29–30), based on a description of 1603.

Category of labor	Per day
<i>Barreteros</i>	24 reales
<i>Apiri mingas</i>	12 reales
<i>Mingas</i> selecting the mineral	8 reales
<i>Mingas</i> in the <i>ingenios</i>	7 reales
<i>Mitayos</i>	2,7 reales, 20 reales per week (and 4 reales of tax)

These features imply that the language practices in the mines must be very *intensive* (danger and cooperation) and *innovative* (specialization and new environment). This is reflected in the vocabulary shared by these multilingual populations in the mines. People come from a wide range of linguistic backgrounds, so innovation is even more important to provide a shared vocabulary. One of the reviewers of this article notes that there was a constant flow of newcomers, as well as influence, possibly, from the places to which the miners returned. This turn-over in population renders it preferable to refer to Potosí as a “community of practice” rather than a speech community in the strict sense.

It would be impossible to investigate language practices in the mines in the colonial period if we did not have access to a series of mining vocabularies. The first and most important source for the language of the mines is García de Llanos' dictionary (1609–1610). García de Llanos was of Castilian Spanish origin, but was very well versed in the different types of work in the mines. He worked both as a mining entrepreneur and as a *veedor* 'overseer'. García de Llanos was appointed *veedor* in 1604. He must have arrived at the mines at the latest in 1598; he worked six years as a miner and four years as *veedor*.

The dictionary was composed in Lima, but surely the work was based on notes taken in Potosí in the years before. There are 258 entries, but also numerous sub-entries and commentaries. It is a very rich source. In the same period that he put together the dictionary García de Llanos wrote a *Relación del Cerro de Potosí, el estado que tiene y desórdenes en él, con el remedio que en todo se podría dar* [Account of the Cerro de Potosí, the state it is in and its disorders, with the remedy to put it right], still unpublished. Mendoza (1983: XXXV) notes that of the 258 main entries in the dictionary, 160 are indigenous terms and that these entries correspond to all phases in the mining process. From his observations it is obvious that García de Llanos knew the mining setting very well. It is also clear that he knew a lot of spoken and written Quechua. He is very systematic in the use of the *hu* instead of *gu* (e.g. <huasi> instead of <guasi> for *wasi* 'house') in the orthography of Quechua /w/, for instance, pointing out that this is closer to the Quechua sound. He knew no Aymara, however, as is clear from his proposed etymologies for entries in that language.

Simply as a point of reference illustrating the innovativeness of the mining dictionary: the first dictionary of English dates from 1604 and the first dictionary of Dutch from 1599. In the Hispanic world and in the New World colonies there was a longer tradition, starting with Nebrija at the end of the fifteenth century and flourishing in the New World with a number of highly innovative works starting in the mid-sixteenth century. This holds both for the Uto-Aztec language Nahuatl from Mexico and for the Andean languages Quechua and Aymara.

- Spanish (1495)
- Nahuatl (1555, 1571)
- Quechua (1560, 1608)
- Aymara (1612)

After García de Llanos' important contribution, other works followed. A special case is the key work of Alvaro Alonso Barba (1640), *Índice de nombres típicos de minerales y vocablos indígenas usados en la minería local* [Index of typical names of minerals and indigenous words used in local mining]. Barba's highly informative

and knowledgeable work is focused on the minerals, with less emphasis on the organization of work in the mine.

Ovando-Sanz (1975) offers a detailed history of the Academia de Minería that was established in Potosí in 1757, citing many of the original documents related to this institution. To help explain the terms used in these documents, the final part (1975: 147–151) contains a vocabulary list.

Until very recently other mining vocabularies have been produced, not just from Potosí but from the Bolivian mines in general, particularly those around of the mining center Oruro. Camargo Blacutt (1968) is a very practical guide for mining in Bolivia. In addition to all types of technical information it contains a number of sections with cultural and linguistic information. Camargo Blacutt (1968) also contains an interesting list of terms for the distinct types of persons that work in the mines. Anónimo (ca. 1970) contains a list of less than 100 words.

Finally there is the *Diccionario básico* of 1989, an instruction book for new miners on behalf of the miners' union. In modest fieldwork in 1991 I collected 40 words from the (ex-) miners of the Cerro Rico in Potosí. Of course, with the new technologies coming on, much mining vocabulary has been replaced, but there is some continuity between the colonial Potosí vocabulary and the recent word lists.

5 Multilingual language use in the city and the mines

Given its multi-ethnic composition, there were various linguistic divisions in the city: between the Spanish and the other languages, and between the languages of the different groups of indigenous workers.² I hypothesize that there likely was a correlation between language and type of labor, because of the way the work force was recruited.

We must postulate at least half a dozen languages in the city. Mendoza (1983: LXI) also mentions the appointment of an official city interpreter, mediating between the different languages spoken (probably mostly Quechua and Spanish). In 1613 it was Agustín de Lizarazu, and Diego de los Ríos was his

² Something I have not been able to study is the role of Euzkera (Basque). It is known that among the Europeans there was an important contingent of Basque colonizers, who competed and even battled with the Castilians, but we do not know the linguistic dimensions of this rivalry.

successor. In 1585 the Jesuit Alonso de Bárzana was appointed Professor of Quechua and Aymara in Potosí, but later this Chair was moved to Sucre.

One must distinguish between the language used inside of the mine and the languages used by the different communities in their daily life outside of the mine. Very schematically, we could postulate more or less the layers in Figure 2, which roughly correspond to the different strata in Potosí society.

Spanish*			
Basque*		Afro-Portuguese*	
		African languages*	
Mining Spanish of the Spanish			
Indigenous mining language of the <i>yanaconas</i> and <i>mingas</i> , probably a mix of Spanish and Quechua			
Indigenous mining language of the <i>mitayos</i> , possibly a mix of Aymara and Quechua			
Quechua*	Aymara*	Uru*	other indigenous languages like Puquina* (and Uruquilla*)

Figure 2: Schematic representation of the use of various languages in the mine and in the city (the latter with *).

Now the key question is the language use inside the mine. How did the different groups communicate? Which multilingual practices developed?

It is obvious from the sources that there existed a clear hierarchy between the indigenous languages and ethnicities in the mine. We can also formulate the hypothesis that this hierarchy corresponded with the principal divisions of labor in the mine:

- Quechua *Barreteros* (directly extracting the mineral from the walls)
- Aymara *Apiris* (transporting the minerals to the outside)
- Uru *Palliris* (gleaning bits of mineral remaining the ore)

I assume that the *yanaconas*, the free Indians who had come to Potosí on their own account, were especially Quechua speakers, and the later *mitas* from the Altiplano, Aymara speakers. This is in line with the founder principle assumed in creole studies (Mufwene 1996), whereby early arrivals in a new speech community play the most important role in giving shape to the communication patterns established, and incidentally, take up the higher positions in the social hierarchy. In absolute terms, the large majority of the workers in Potosí must have been Aymaras. In his ethnographic observations García de Llanos does not speak of the Quechuas, who were taken for granted, but quite a bit of the Aymaras, the Urus and the Uruquilla:

Aymaras

Although there is a province next to Cuzco of Indians of this name, from which the language Aymara took its name, it is given as well to the other provinces where there is fishing, to the Indians more capable of reason and useful for any job, in contrast with those who are not, and are called Uros,³

Uros

They are the uncivilized Indians who are dedicated to being fishermen in the lakes of Chucuito and Paria, and they are among the other Indians as the people of Sayago in Castilla, and therefore one Indian calls the other Uru as an insult.⁴

Uruquilla

There are some Indians of this name from the town where they are from who are well adapted to gleaning the metals which they call pallacos and quitamama in the face of the earth They live apart from the others.⁵

Leaving aside the Uruquilla, about whom he does not give much information (except that they are *palliris*), it is clear that the principal distinction is Quechua/Aymara versus Uru. It can be seen in the following definition:

hanansaya and urinsaya

In the general [language] this means those of above and those of below... These two differences or partialities of Indians exist in the provinces of Chucuito, Urcosuyo and Umasuyo and other towns in the area ... And outside of the provinces where there are Uro Indians one only makes the distinction between these and the others that are not [like] this.⁶

It is a bit confusing that García de Llanos treats the Uros and the Uruquilla as two distinct groups, while many contemporary authors consider Uruquilla to be the name of the language of the Uros.

3 “Aunque hay una provincia junta al Cuzco de indios de este nombre de donde tomó el suyo la lengua aymara, se le da también el mismo in the demás provincias donde hay pesquería a todos los indios más capaces de razón y útiles para cualquier ministerio, a diferencia de los que no lo son que se nombran uros, ...”

4 “Son indios chontales que se aplican a ser pescadores in the lagunas de Chucuito y Paria y son entre los demás indios como la gente de Sayago en Castilla, y así se dice por afrenta un indio a otro uro.”

5 “Hay unos indios de este nombre por el pueblo de donde son que se acomodan bien a pallar metales que dicen pallacos y quitamama en la haz de la tierra ... Viven aparte de los otros.”

6 “Quiere decir in the general los de arriba y los de abajo ... Estas dos diferencias o parcialidades de indios las hay in the provincias de Chucuito, Urcosuyo y Umasuyo y algunos otros pueblos comarcanos ... Y fuera de las provincias donde hay indios uros se hace solamente diferencia de ellos a los demás que no lo son.”

I also assume that there was a split between the Quechua, who came first and worked as free laborers, and the Aymara, who worked as forced laborers. In any case, the major part of the indigenous lexical contributions in the various dictionaries and word lists come from Quechua. There are some Aymara words, and as far as is known none come from Uru, Uruquilla (if this is a separate language) or Puquina. This last group is not mentioned by García de Llanos, which is surprising given the importance of the Puquina language during that time.

6 Language mixing

Many language practices must have been multilingual in the mines, implying a mix of languages, especially Aymara, Quechua, and Spanish. There is considerable evidence for this in the vocabularies.

One must take into account that the two principal indigenous languages involved, Quechua and Aymara, have many structures in common and share a large number of words. As noted, the languages are largely SOV with extensive verbal and nominal morphology, almost exclusively suffixal; they have productive compounding, and nouns can easily be verbalized, and verbs nominalized. Their phoneme inventories are also very similar, but they differ somewhat in their phonotactics.

An important case of mixing in the mining language involves the use of nominalizing suffixes in the three most relevant languages, as presented in Table 6. Three important categories of nominalizers are shared between the two languages: agentive (the X-er), participial (the X-ed), and instrumental or abstractive (X-ing). The Spanish endings are also given.

Table 6: Tokens of nominalizations in words in the mining vocabularies with either indigenous roots or suffixes.

	Aymara	In mining Quechua vocabulary	In mining Spanish vocabulary	In mining Total vocabulary
Agentive	-ri	9 -q	- -dor, -ero	7 16
Participial	-ta	1? -sqa	5 -do	2 8
Abstractive	-ña	2 -na*	6 -	8

* A reviewer notes that Aymara *-ña* may be more similar to Quechua infinitival *-y* than to Quechua *-na*.

An example of agentive nominalization is Aymara *yati-ri* ‘knower, wise man, (male) witch’, which corresponds with Quechua *yacha-q* with the same meanings. It can be seen that they have the same structure, and *yati-* and *yacha-* also look similar.

In the mining language the agentive is *-ri*, never *-q*. It is rather productive, as shown in the examples in Table 7.

Table 7: Words with agentive *-ri* in the different sources^a.

Agentive <i>-ri</i>	Lg			GDL	BA	OS	CABL	DIB	ANÓN	FIELD
				1610	1640	1757 +	1968	1970	1989	1991
<i>apiri</i>	api-ri	Q/ A	carrier	x		x	x	x	(x)	
<i>palliri</i>	palla-ri	Q/ A	gleaner	xs				x	x	x
<i>chasquiri</i>	chaski- ri	Q/ A	passer on				x	x	x	
<i>ayciri</i>	aysi-ri	Q	caller	x						
<i>pirquiri</i>	pirka-ri	Q	building walls	x						
<i>repasiri</i>	repasa- ri	S	passing on	x						
<i>serviri</i>	servi-ri	S	serving	x						
<i>cumuri</i>	k'umu-ri	Q/ A	working bent over			x				
<i>aviri</i>	*avi-ri ^b	?	gleaner in the boxes of mineral				x		x	

^a Source abbreviations are: GdL = García de Llanos; Ba = Barba; OS = Ovando-Sanz; CaBl = Camargo Blacutt; Anon = Anónimo; field = notes from fieldwork. Q = Quechua; A = Aymara; S = Spanish.

^b Etymology not clear to me.

The suffix can occur with words of different origins: Quechua, Spanish, Aymara. In the case of the Aymara items, they could be from Quechua as well.

The other Aymara nominalizer suffixes are less productive. Of Aymara abstractive *-ña* there are two possible cases:

(1)

<i>puruña</i>	Q puru-ña ‘clay vase for washing’	washing a bit of metal in a ... In the general [language] vase or jug of cooked clay
<i>quipiña</i>	Q’ipi-ña ‘carry-NMLZ’	load of the Indian ... a load of two arrobas [about 25 kg] ⁷

Of Aymara resultative *-ta* there is a single case, mentioned in the *Diccionario básico*:

(2)

<i>calicata</i>	Exploratory work that is carried out for a short length, maximally two meters (to cut branches ⁸
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There are various cases with the Quechua participial nominalizing suffix *-sqa*, written as *-sca* in the sources (the abbreviations for the sources are given above in Table 7):

(3)

<i>cascasca</i>	GdL	kaska-sqa ‘hit-NMLZ’	box, drum
<i>chacorusca</i>	GdL	ch(h)aqru-sqa ‘mix-NMLZ’	mixed
<i>pocusca</i>	GdL	phuku-sqa ‘blow-NMLZ’	ventilation
<i>nupasca</i>	GdL	rupha-sqa ‘burn-NMLZ’	burnt spots
<i>arenisca</i>	Ba	arena-sqa sand-NMLZ’ (<i>arena</i> is Spanish)	grainy

The abstractive or instrumental Quechua nominalizer *-na* occurs in five words in the lists:

⁷ “lavando un poco del metal en una ... Es en la general vasija o almofia de barro cocido’ and ‘carga del indio ... una carguilla de hasta dos arrobas.”

⁸ “labor de reconocimiento que se efectúa para poca longitud, máximo 2mts. (para cortar ramos)”

(4)

<i>chacanas</i>	GdL	< chaqna-na ‘carry on back of mule-NMLZ’	mule drivers
<i>circana</i>	GdL	sirka-na ‘lancet-NMLZ’	cutting of the boxes
<i>huairachina</i>	GdL, Ba	wayra-chi-na ‘wind-CAU-NMLZ’	fan
<i>llancana</i>	GdL	llank’a-na ‘work-NMLZ’	personal work space
<i>tacana</i>	GdL, Ba	taka-na ‘beat-NMLZ’	type of mineral, that needs to be beaten

While Aymara *-ri* and Quechua *-sqa* can occur with words with different etymologies, Quechua *-na* occurs only with words of Quechua origin, parallel to Aymara *-ña*, which occurs only with words of Aymara origin.

Examples of mixed words are (source):

- chaski-ri Quechua + Aymara
- servi-ri Spanish + Aymara
- repasi-ri Spanish + Aymara
- areni-sca Spanish + Quechua

In addition to Quechua and Aymara nominalizers there are nominalizers from Spanish. I am only going to consider the cases where they are combined with non-Spanish words, and leave out of the discussion of the very frequent endings of Spanish infinitive *-r* with Quechua words.

With Spanish resultative *do* only two new formations are found:

(5)

<i>ataucado</i>	GdL	tawka-do ‘heap-PP’	heaped
<i>chacorruscados</i>	GdL	chaqru-sqa-do ‘mix-NMLZ-PP’ ⁹	mixed

More productive are the Spanish agentive nominalizers *-dor* and *-ero*:

⁹ Notice that there are two nominalizers here, one from Quechua, and one from Spanish.

(6)

<i>cateador</i>	(Sp)	BA	catea -dor 'prospect'AG	those who search the best places to find the mineral
<i>chacanea-dores</i>	(Q)	GdL	chaqna-ea-dor 'carry on a mule-FACT-AG'	mule drivers
<i>chugador</i>	(Q)	Diccionario básico	chuwa-dor 'earthen. bowl-AG'	experts in using the technique of the earthen bowl
<i>huairadores</i>	(Q)	GdL	wayra-dor 'wind-AG'	those in charge of fanning the glowing carbon or firewood to increase the heat
<i>pallador</i>	(Q)	GdL	palla-dor 'glean-AG'	those who search through the mineral leaving the mine to find remaining bits
<i>Pirquiñero / pirqueñero</i>	(Q)	Diccionario básico	pirqa-ñero 'wall-AG'	contract worker
<i>tojeador</i>	(Q)	Diccionario básico	tuqu-ea-dor 'hole-FACT-AG'	those who make the holes for extracting the mineral

Next, in the verbal morphology, we find many cases of the Spanish nominal plural -s, which is very productive. Some examples:

(7)

<i>achupas</i>	(Q)	GdL	achura- 'give each one his/her portion'	sharing a (mineral) product
<i>candelacamayos</i>	(Sp)	GdL	candela-kamayuc 'fire-charge-having'	those in charge of the lights in the mine
<i>chasquear / chasquis</i>	(Q)	GdL	chaski 'receive, mail'	(those that) pass on materials or messages in the tunnels in the mines

<i>ciques</i>	(Q)	GdL	siki ‘bottom, rear end, worthless’	worthless stones or minerals
<i>huasis</i>	(Q)	GdL	wasi ‘(indian) house’	the houses and yards of the people working the mines
<i>huatacamayos</i>	(Q)	GdL	wata-kama-yoq ‘tie-charge-having’	sheriff, person in charge

A certain Quechua/Aymara asymmetry exists in the mixed words: Aymara words are not combined, it seems, with Spanish endings, in contrast with the Quechua words, that are combined freely. This suggests that there was considerable Quechua-Spanish bilingual language use, but not Aymara-Spanish bilingual language use. Rather, there was Quechua-Aymara bilingual language use.

7 Metaphors and rituals

The work in the mines was incorporated into the indigenous Andean cosmologies. Langué and Salazar-Soler (1997: 385) indicate that in both Incaic agriculture and mining existed “the same conception of *mama* understood in the double sense of the term. *Mama* as image or replica of the first mythical product (*sara mama*, mother of corn, *cori mama*, mother of gold) and *mama* as producer, generative nucleus that perpetuates the plant (*mama sara* or *mama cori*, mother of corn or mother of gold).”

There is a complex series of metaphors related to the *mama* metaphor to take into account. Some examples are:

(8)

		Literal meaning	Metaphorical meaning
<i>anco</i>	GdL	vein	lead
<i>ciques</i>	GdL	rear end	worthless
<i>quitamama</i>	GdL	flee-mother	mineral outside the main veins

Linked to these metaphors are some of the different very well-known rituals of the miners in the past century (Camargo Blacutt 1968: 388):

- Challa A fiesta with the ritual sacrifice of a *llama* to mother earth (*pacha mama*) to bring about good luck
- Tinca/Thinca/
Tincka A present to the mines by the miners at the occasion of Carnival
- Aguicha/
Ahuicha Piece of rich mineral a miner carries with him to bring about good luck
- Achachila Lord of the mountains. The miners commit themselves to him so that he can help them in their search for minerals

Surely there must have been rituals in the mines before as well, but these are not mentioned in the sources consulted for this article (a very limited subset of all the archival and printed material available).

8 Conclusions and suggestions for future research

There is much more to study in this domain, but a first interpretation of the available data leads me to conclude that Quechua played a key role as intermediary language between two socially very distinct forms of speaking in the mines:

- the indigenous mining language of the free workers, the *yanaconas* and *mingas*, probably a mix of Spanish and Quechua, since the free workers were likely to have come from larger Quechua-speaking settlements, further away
- the indigenous mining language of the forced workers, *mitayos*, possibly a mix of Aymara and Quechua. The *mitayos* were recruited from largely Aymara-speaking regions in the highlands of Bolivia.

Structural and in part lexical similarities between Aymara and Quechua must have contributed to the possibility of this role for Quechua as an intermediary language and its subsequent expansion in Bolivia. The mines at Potosí in later periods throughout the Altiplano were part of the reason Quechua expanded into Aymara territory in Bolivia. As Albó writes (1988: 89): “There is a clear correlation between the location of the mines, the advance of mine-related railroads, and the presence of Quechua.”

The mines of Potosí constituted a fascinating setting in which tens of thousands of people came together, speaking a half dozen or more languages, and interacted in a very complex economic system. As that system developed,

the various parts of its functioning came to be supported by different classes of labor (connected to the broader labor recruitment system of the Andes), each connected to different ethnic groups, geographic locations, and languages, some of which were arranged hierarchically in a way that articulated with the colonial sociolinguistic situation far beyond the mine itself. The vocabulary that emerged from that complex network of labor, migration, ethnicity, and language was, in a sense, a compromise that developed as a result of that system.

As shown in the articles in this issue, mining languages have arisen in various parts of the world, including Johannesburg (Fanagalo), Lumumbashi, Republic of Congo (Shaba Swahili), Harz, Germany (dialect of the Harz), eastern Belgium (mixed varieties of the cités in the province of Limburg), southeast in The Netherlands (mixed dialect-Dutch varieties in the province of Limburg), northern England (York). It is worth comparing language use in the mines of Potosí with these more recent situations. In some cases we also find intermediary languages.

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