



DIE ERDE

Journal of the
Geographical Society
of Berlin

Changing territorialities in the Argentine Andes: lithium mining at Salar de Olaroz-Cauchari and Salinas Grandes

Felix Malte Dorn

Department of Geography, Leopold-Franzens-Universität Innsbruck, Innrain 52f, 6020 Innsbruck, Austria, felix.dorn@uibk.ac.at

Manuscript submitted: 09 June 2020 / Accepted for publication: 07 December 2020 / Published online: 26 March 2021

Abstract

In the context of climate change, electro-mobility has become a symbol of hope to reduce the emissions of the growing transport sector. At the same time, it has also renewed interest in strategic resources utilized in battery production, such as lithium. In the areas of extraction, reactions to lithium mining range from hope for paid work and increased income to resistance and conflict. Based on extensive ethnographic fieldwork stays realized between February 2018 and August 2019, this article associates the opposed reactions to lithium mining in the communities of the drainage basins of Salar de Olaroz-Cauchari and Salinas Grandes-Guayatayoc with divergent territorialities. In doing so, historically different strategies – resistance and negotiation – of dealing with overlapping territorialities can be identified. Based on a reciprocal relationship, different strategies and divergent territorialities are mutually dependent. In the two case studies, the new territoriality related to the global market implies diverging socio-spatial consequences with different risks. Using the example of lithium mining, it can thus be shown that the sustainability transition continues to be based on social-ecological inequalities and global asymmetries of power.

Zusammenfassung

Im Kontext des Klimawandels ist die Elektromobilität zu einem Symbol der Hoffnung geworden, um die Treibhausgasemissionen des wachsenden Verkehrssektors zu reduzieren. Gleichzeitig wurde durch die Elektromobilität auch das Interesse für strategische Ressourcen – darunter z. B. Lithium für die Batterieherstellung – neu belebt. In den Extraktionsregionen reichen die Reaktionen auf den Lithiumabbau von der Hoffnung auf bezahlte Arbeit und höhere Einkommen bis hin zu Widerstand und Konflikten. Auf der Grundlage umfangreicher ethnographischer Feldforschungsaufenthalte, die zwischen Februar 2018 und August 2019 durchgeführt wurden, analysiert dieser Artikel die gegensätzlichen Reaktionen auf den Lithiumabbau in den indigenen Gemeinschaften der Einzugsgebiete des Salar de Olaroz-Cauchari und der Salinas Grandes-Guayatayoc im Rahmen divergierender Territorialitäten. Dabei lassen sich historisch unterschiedliche Strategien – Widerstand und Verhandlung – im Umgang mit sich überlagernden Territorialitäten identifizieren. Auf Basis wechselseitiger Beziehungen bedingen sich unterschiedliche Strategien und divergierende Territorialitäten gegenseitig. Neue Territorialitäten im Zusammenhang mit dem globalen Weltmarkt implizieren divergierende sozialräumliche Konsequenzen mit unterschiedlichen Risiken in den beiden Fallstudien. Am Beispiel des Lithiumbergbaus kann somit gezeigt werden, dass die „Nachhaltigkeitswende“ auch weiterhin auf sozial-ökologischen Ungleichheiten und globalen Machtasymmetrien aufbaut.

Felix Malte Dorn 2021: Changing territorialities in the Argentine Andes: lithium mining at Salar de Olaroz-Cauchari and Salinas Grandes. – DIE ERDE 152 (1): 1-17



DOI:10.12854/erde-2021-515

Keywords socio-environmental conflicts, territoriality, lithium mining, natural resources, Latin America, Argentina

1. Introduction

With the consensus on the Paris Agreement in the context of the UN Climate Change Conference in Paris 2015, parties agreed to fight the anthropogenic greenhouse effect and to strengthen their efforts for keeping the global temperature increase below 1.5 degrees Celsius compared to pre-industrial levels. In this context, the “Paris Declaration on Electro-Mobility and Climate Change” (UNFCCC 2015) also highlights the importance of fostering the deployment of electric vehicles worldwide.

While electro-mobility has become a symbol of hope to reduce emissions of the growing transport sector, it has also renewed interest in strategic resources utilized in battery production, such as cobalt, nickel or lithium. The light metal lithium constitutes an essential component for the manufacturing of Li-Ion batteries. Although the global demand for lithium has already grown substantially during the past three decades – primarily triggered by an increased prevalence of portable electronic devices – it is expected to rise even stronger within the next years (Öko-Institut 2017). Consequently, the South American countries Argentina, Bolivia and Chile that together count up for more than half of the world’s lithium resources increasingly attract major economic interests, particularly from countries of the global North as well as from China (cf. Argento et al. 2017; Argento and Zicari 2017; Dorn and Ruiz Peyré 2020).

In South America, the so-called lithium triangle extends from the Bolivian Salar de Uyuni to the Chilean Salar de Atacama and to a series of salt flats in the northwest of Argentina. The high Andean plateau of the Altiplano, Atacama and Puna, a highly arid area characterized by altitudes between 2,500 and 4,500 m.a.s.l., is mainly populated by indigenous communities of the Atacama, Lickanantay, Kolla and Quechua tribes. In each country, lithium mining is politically implemented differently. While in Chile lithium is being extracted since the early 1990s, the resource has played a key role for Bolivia’s National Development Plan under Evo Morales. In Argentina, in contrast, mining is organized on a federal basis whereby the provincial institutions primarily focus on the allocation of concessions (see for a more detailed outline

Nacif 2018). Thereby, Argentina’s business-friendly mining legislation has provoked a highly dynamic situation with currently more than 60 lithium-mining projects (Ruiz Peyré and Dorn 2020). At the local level, reactions differ between hope for employment and economic growth and resistance on the other side: while some communities have agreed on contracts with the mining companies, others refuse to accept any company on their territory.

Based on extensive ethnographic fieldwork stays realized between February 2018 and August 2019, this article aims at analyzing the divergent local perceptions and ideas that exist regarding lithium mining in the highlands of Jujuy, Argentina. The phenomenon of different reactions of indigenous communities to lithium mining has already been described in other, mainly political science, studies (see Anlauf 2015; Puente and Argento 2015; Pragier 2019). However, what is missing so far are ethnographic-empirical studies from a human-geography perspective that answer (1) why the indigenous communities of Salinas Grandes-Guayatayoc and Salar de Olaroz-Cauchari react differently to lithium mining, (2) how these different positions are spatially materialized, and (3) what risks result from the different positionings. Given that the term “*defensa del territorio*” (territorial defense) plays a key role in the local resistance against lithium mining, I answer these questions by comparing the (historical) construction of territory in two case studies: by taking the communities of Santuario de Tres Pozos (drainage-basin of Salinas Grandes-Guayatayoc) and Huancar (drainage basin of Salar de Olaroz-Cauchari) as examples, I associate the opposed reactions to lithium mining with historically divergent strategies of dealing with contrasting and overlapping political and economic interests (territorialities).

In the broad sense, this article contributes to a wide-ranging debate on indigenous resistance against so-called mega-development projects that eventually imply an expansion of the growth-centered development model, the imperial way of living (Brand and Wissen 2017), and the commodification of nature (Hafner and Rainer 2017). Conflicts materialize in the context of large-scale oil and gas projects (Bebbington 2012), the expansion of industrialized (genetically-modified) agriculture (Lapegna 2016; Leguizamón 2014), major infra-

structure projects like the installation of hydroelectric power plants (Schmitt 2017; Weißermeil 2019; Weißermeil and Azevedo Chaves 2020) or large-scale mining ventures (Bebbington et al. 2008; Svampa 2008). From a comparative perspective, this article builds on this vast body of literature and analyzes new conflicts in the context of a global “sustainability transition”. Using the example of lithium mining, I show that the sustainability transition in its current form is also based on global power asymmetries and social-ecological inequalities.

After a short presentation of the methodology and the selection of case studies, I begin this article by presenting different approaches to territory and territoriality in human geography. After depicting important historical events, particularly as of the 19th century, I outline my findings regarding the local perception of lithium mining. Finally, I discuss these findings with regard to the historic spatial and social relations of the region.

2. Methodology

This article examines local attitudes and ideas around lithium mining and analyzes the reasons for the different reactions to lithium mining in the Argentine Andes: while the 10 indigenous communities surrounding the Salar de Olaroz-Cauchari largely collaborate with the mining companies, the 33 communities living in close proximity to Salinas Grandes protest against any form of exploration and mining. In neither case, these communities form a homogeneous mass. The institutional setting also varies greatly: for example, 8 out of 33 communities surrounding the Salinas Grandes are located in the province of Salta, 25 are located in the province of Jujuy. Moreover, the region is split up into several departments and municipalities. This is why one community of each salt flat was selected for the comparative study: Huancar and Santuario de Tres Pozos (see Fig. 1).

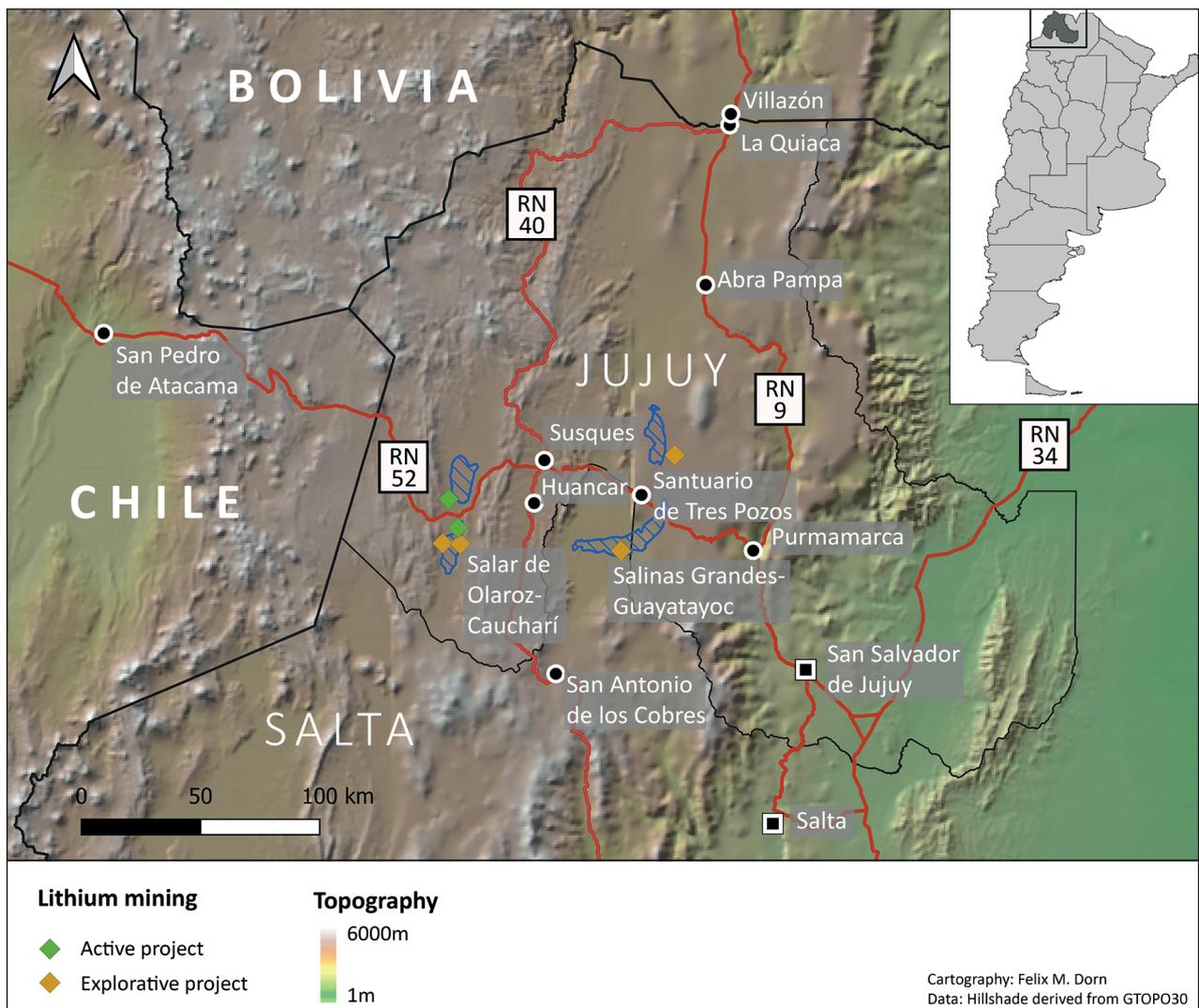


Fig. 1 General map of the two case studies located in the province of Jujuy. Source: Own elaboration

While Huancar seems appropriate to demonstrate the diversity of partnerships and alliances between communities and mining companies, Santuario de Tres Pozos stands out due its radical attitude against lithium mining. Due to the heterogeneity of actors, these communities cannot be seen as representative for the respective drainage basin, but allow for describing the different strategies and their spatial consequences.

The research for this study has been realized during fieldwork stays in the region conducted between February 2018 and August 2019 (in total 10 months, most of which was spent in the selected communities). The applied methods include both qualitative social research with observation, participatory mapping and 84 qualitative in-depth and go-along interviews with different stakeholders (company representatives, geologists, government authorities, NGOs, community representatives and the local population), as well as a wide-ranging questionnaire (Likert scale), that was carried out with all secondary students of the two case studies (n = 59). In the communities of Salar de Olaroz-Cauchari, a widespread statement was that employments in lithium mining were needed to keep the young population in the villages. The young people were therefore directly surveyed about their attitudes towards lithium mining. In this context, a Likert scale is suited to measure attitudes and opinions with a greater degree of nuance than a simple “yes/no” question. The scale has then been analyzed with Microsoft Excel and R. The qualitative interviews were examined using qualitative content analysis (coding in maxQDA). The combination of quantitative and qualitative research methods not only allows for a comprehensive overview of perceptions, attitudes and ideas regarding lithium mining, but also for a deeper understanding of the respective social construction of territory.

3. Theory: territory / territoriality and territorialization

When Antonsich (2017: 1) starts his essay on *territory and territoriality* with the words “Meanings are not fixed but are historically, geographically, and socially specific” he perfectly underlines the polysemy and ambiguity of the term *territory*. Depending on the academic discipline, historic period and even on the linguistic area, the use of the concept of territory appears to diverge widely. Although the term has at least been used since the Early Renaissance, particularly in

the context of the modern nation-state, and is today an integral part of everyday language, until the mid-1960s it had not been further conceptualized in social sciences (cf. Antonsich 2017; Raffestin 2012).

Initially investigated in the context of animal ethology in the early 20th century, the concept of *territoriality* was used to refer to the behavior of animals that occupy a certain territory and defend it against individuals of their own species (see for example Howard 1920). In 1986, Robert Sack published his widely cited work on *human territoriality*. He defines territoriality as a “powerful geographic strategy to control people and things by controlling area” (Sack 1986: 5). Since then, we can see a densification on reflections about the two concepts. Thereby, while we can see an approximation in recent years, we have to distinguish between the primarily static understanding of *territory* in Anglophone literature – with a strong state-nexus and independent of social change – and the more fluxionary understanding of *territoire* in Francophone literature (see for a detailed synopsis Pachoud 2019). The latter accentuates territory as a *lived* space and environment that includes all forms of action (Di Méo 2008). Thus, regardless of size, *territoire* is created by social practices and experiences, it is considered a performative category that results from everyday production (*territoires du quotidien*).

Against this background, the concept of *territoriality* allows for examining how individuals and communities relate to and interact with space. According to Delaney (2005: 12), territoriality “is much more than a strategy for the control of space. It is better understood as implicating and being implicated in the ways of thinking, acting, and being in the world – as ways of world-making informed by beliefs, desires, and culturally and historically contingent ways of knowing. It is as much a metaphysical phenomenon as a material one.” In other words, territory results from territoriality. It is, therefore, both a social as well as a historical product (Brenner and Elden 2009; Sassen 2013). This is why overlapping territorialities often enhance the contestation around territories. Then, *territorialization* is used to spatialize (political) claims and to inscribe power relations into nature (Peluso and Lund 2011). As a consequence, territory cannot constitute a fixed creation, but rather has to be (re-)produced by material, discursive and everyday practices on a continuous basis (Dietz and Engels 2014).

In a Latin American context, based on overlapping territorialities, we can see this contestation of territories with the colonization of indigenous peoples as well as with recent struggles over land and resources. Hence, the Latin American debate on *territorio* is particularly fruitful. Applications of the concept vary considerably, so that it is used in diverse contexts for example as a spatial entity in place-based development scenarios or as a spatialized political claim of social movements (López Sandoval et al. 2017). In the view of indigenous peoples of the Andes, territory is a pluralistic concept that unites all living beings, the earth as well as an accentuated immaterial dimension, including various spiritual forces (Castro-Sotomayor 2020; Haesbaert and Mason-Deese 2020). This holistic view is reflected by the deep veneration for *Pachamama* (Mother Earth), “where all beings live in relationship and where the physical base of land is also integrated into social relations in a way that does not reduce it to its materiality” (Haesbaert and Mason-Deese 2020: 262). Here, territory also constitutes a category of practice, but also serves as an antidote to Western development ideas (Castro-Sotomayor 2020; Reyes and Kaufman 2011), and as a “tool for mobilization and struggle by different social movements” (Haesbaert and Mason-Deese 2020: 264). The understanding of territory as an arena of dispute (López Sandoval et al. 2017; Manzanal 2007; Svampa 2008), where place-based actors collectively confront non-place-based forces, emphasize the role of territoriality in controlling and appropriating space. As a claim for autonomy and self-determination, territory therefore becomes a central dimension for analyzing social movements (López Sandoval et al. 2017; Porto-Gonçalves 2002; Svampa 2008).

On the basis that territories are essentially the product of social lives (Brenner and Elden 2009; Delaney 2005;), we can emphasize the importance of territories as pivotal elements of cultural identification processes (cf. Di Méo 2016; López Sandoval et al. 2017; Pachoud 2019). Therefore, I argue that processes of resistance do not only define and create territories, but also strongly reinforce individual and collective territorial identification. Territory thus plays a fundamental role in resistance against neoliberal development projects, including natural resource extraction.

Building on the theoretical concepts introduced above, overlapping territorialities encompass a range of different levels such as influence, power and discursive elements. Identifying overlapping territorialities in geographical research therefore implies a multi-

methodical, a multi-actor and a multi-scalar research approach that allows for understanding different spatial practices and strategies of appropriation as well as the resulting spatial dynamics. To do so, qualitative material (subjective experiences of different actors) is blended with a questionnaire that aims at identifying opinions and ideas of lithium mining.

4. Contested territories in the Argentine Andes

Although the two indigenous communities Huancar and Santuario de Tres Pozos are separated by just an 80-kilometer drive, one can identify highly different attitudes towards lithium mining today. Huancar constitutes part of the *Asociación Pueblo Atacama*, an association of 10 indigenous communities in the drainage basin of Salar de Olaroz-Cauchari who largely collaborate with the mining companies. In contrast, Santuario de Tres Pozos is part of the 33 communities surrounding Salinas Grandes. The latter protest against any form of exploration and mining. Thus, a detailed local consideration of the “arrival” of lithium mining as well as of how the communities deal with the new actor appears necessary. This is preceded by a historical outline of the region and an analysis of relations to and experiences with capitalist companies and the state.

4.1 Creating the nation state: the Puna jujeña as of the 19th century

Based on natural as well as sociocultural characteristics one could divide the province of Jujuy, located in Argentina’s far northwest, into two parts: valleys and highlands. The latter can again be split up into two environments, the Quebrada de Humahuaca as well as the Puna. Not only because of its distinctive ecological conditions and historical processes, the arid plateau of the *Puna jujeña* – located on more than 3,400 m.a.s.l. – belongs to a broad Andean space (Kindgard 2004). To the south, the Puna extends towards the provinces Salta and Catamarca. Altogether, the Puna constitutes part of the Andean highlands that continue towards Bolivia, Chile and Peru.

The two case studies Huancar and Santuario de Tres Pozos are indigenous communities of around 400 inhabitants. People predominantly identify themselves as *Atacameños* in the case of Huancar, or *Kolla* in the case of Santuario de Tres Pozos. They are located with-

in the drainage basins of Salar de Olaroz-Cauchari and Salinas Grandes-Guayatayoc, respectively. Although a detailed description of the historical processes that influenced the status quo of the *Puna jujeña*¹ would clearly go beyond the scope of this article, I want to briefly emphasize important particularities with respect to each case study (see for a very detailed record e.g. *Benedetti* 2005; see also *Delgado* and *Göbel* 2003).

The early 19th century has to be considered as the phase of nation building in Latin America. However, this process by no means concluded with the independence of Argentina in 1816. Particularly from then on, the two case studies underwent more than a century of very disparate developments. While the area of Santuario de Tres Pozos already constituted part of Jujuy since the beginning of the formation of the province in 1834 (*Puna jujeña*), the area of Huancar was situated close to the eastern border of the *Corregimiento de Atacama* (jurisdiction of Atacama) and became part of Bolivia as of its independence in 1825 (*Puna de Atacama*). Subsequently, Chile – supported by Great Britain – annexed the Atacama region during the War of the Pacific, also known as the Salpeter War (1879-1883). Based on diplomatic efforts and negotiations, the area then non-violently became part of Argentina in 1899 as part of the *Territorio Nacional de los Andes* (Los Andes national territory). It was only in 1943 when the territory broke up and was divided between the provinces of Jujuy (Susques), Salta (Pastos Grandes) and Catamarca (Antofagasta de la Sierra). During the entire 19th century, the Puna was not only battlefield for the above-mentioned War of the Pacific, but also for the Independence Wars (1810-1825) as well as the War of the Confederation (1836-1839) between Chile and Argentina and the Peruvian-Bolivian Confederation (see *Gil Montero* 2018).

The events described briefly above already indicate a very diverse historical course of the two areas. While today Huancar and the Salar de Olaroz-Cauchari are located in close proximity to the national road 52 (RN52), part of the Bi-Oceanic corridor that connects San Salvador de Jujuy with the Chilean harbor of Antofagasta, the area has long been situated on the edge of its respective state. Even after 1943, Huancar was only accessible from the south. Instead, the area of Salinas Grandes is located on the historically important intersection of the *Qhapaq Ñan* (Inca road system) and a commercial path to the Quebrada de Humahuaca, the present national road 52 (RN52), in close proximity to the cities of San Salvador de Jujuy

and Salta. Although the area constituted one of the country's remotest corners after the Argentine Revolution, the population was already forced to come to terms with the ruling elites in Buenos Aires and the provincial capital early on.

4.2 Salinas Grandes: between protest and legal steps

The Salinas Grandes-Guayatayoc basin in the departments of Cochinocha and Tumbaya (Jujuy) as well La Poma (Salta), is populated by a total of 33 indigenous communities: 25 in Jujuy and 8 in Salta. In the area, people traditionally live from pastoralism (particularly llamas, sheep and goats) and small-scale agriculture (including corn, peas and potatoes), the production of handicrafts such as woven goods as well as artisanal salt extraction. On one hand, these products were used for subsistence, on the other hand for bartering with the people of the Quebrada de Humahuaca, the Calchaquí Valleys and the lowlands. As of the 20th century, these subsistence strategies were increasingly combined with occasional paid employments in the mines of El Aguilar and Pirquitas (*Abeledo* 2017).

With the construction of the provincial road 16 in the 1970s, connecting Purmamarca with Salinas Grandes along the former donkey path, and the subsequent asphaltting from 2000 onwards (today RN52), the number of day tourists has increased significantly. Particularly in the past two decades, the work as a tourism guide and the sale of handicrafts in stopping bays along the Salinas Grandes are complementing existing economic strategies and have contributed to further diversified economies in several communities. In addition, since the 1990s the extraction of salt has expanded largely. Héctor Fiad from San Salvador de Jujuy started his mining project in 1993 and is the region's largest salt producer in terms of volume today. He employs 25 workers from the communities of Santuario de Tres Pozos, Pozo Colorado and San Miguel de Colorado. The local cooperative *Cooperativa Minera Salinas Grandes* was founded by the communities of Santuario de Tres Pozos and Pozo Colorado in 1994 and is today integrated by 31 shareholders. Additionally, next to some possessions administrated by communities, the companies Wu Yea Rin and Tucumán-based Adrian Noguera hold concessions for salt extraction.

At the beginning of 2010, the communities that live on the edge of Salinas Grandes noticed unusual activities within the salt flat. Shortly after, the lithium mining company South American Salars (with capitals of Orocobre) started to approach the *Cooperativa Minera Salinas Grandes* with the aim of purchasing their mining concessions. At that time, according to their own statements, the communities were estranged from each other. However, they managed to join forces: despite the poor infrastructure, non-existent communication possibilities and the associated financial efforts, as of May 2010 the communities came together in the Board of the Indigenous Peoples of the Salinas Grandes-Guayatayoc basin on a monthly basis and initiated a process of resistance against lithium mining on their territories. This process can roughly be divided into two spheres of activity: on one hand, the communities aim at attracting national attention with visible protest actions such as symbolic roadblocks. On the other hand, with the help of the lawyers Alicia Chalabe and Rodrigo Solá (later also Franco Aguilar) as well as the accompaniment and financial support of social scientists and organizations like Equipo Nacional de Pastoral Aborigen (ENDEPA), Fundación Ambiente y Recursos Naturales (FARN), OCLADE Foundation, Consejo de Organizaciones Aborígenes de Jujuy (COAJ) and the Heinrich Böll Foundation, the communities initiate a series of legal proceedings to demand the right to prior consultation and participation.

In November 2010, an Action of Protection was presented to the national Supreme Court. In a public hearing in 2012, the court declared its incompetence and decided to refer the case to the provincial courts (see for a detailed depiction of the hearing *Schiaffini* 2013). In view of this judicial declaration, the communities decided to present their case to the supranational Inter-American Court of Human Rights. Moreover, in 2011 they reported their situation to the Special Rapporteur on the rights of indigenous peoples of the United Nations, James Anaya, in Geneva. In 2015, the communities' general assembly approved the *Kachi Yupi* (traces of salt), a protocol that determines a particular consultation-procedure (see *Solá* 2016). That same year, the newly elected provincial government of Gerardo Morales signaled a potential recognition of the protocol. "He promised us his support. He then established the Secretary of Indigenous Affairs². We thought everything was fine with Natalia [Sarapura], but the decree never came" (Interview #52/2019).³ With a monthly general assembly and a smaller execu-

utive board, the supra-community organization was still maintained, but participation decreased.

In late 2018, Ekeko SA was realizing explorational studies within the territories of Quebraleña, San Miguel del Colorado and Rinconadilla. The company had obtained the approval from a group of people from Quebraleña. At the same time, the province-owned company JEMSE realized a tender for mining projects in Salinas Grandes, Laguna Guayatayoc and Salar de Jama without the communities' consent. Other than expected, the communities immediately came together again. "This year in January we decided to stop the exploration. We only had to wait until we had evidence. Of course we knew that something was going on. Once we had proof, we drove the company out and decided to make a road block. We decided unanimously that approval from now on was only possible by our general assembly" (Interview #52/2019). The incidents of early 2019 made the communities change their position fundamentally: "We have worked from 2008 to 2018 to make them respect us. But the government did not respect us. On top of that we did a Kachi Yupi and all that. And so now in 2019 we have taken a firm decision that we no longer want consultation, we don't want anything, we don't want lithium" (Interview #40/2019).

Although there are underlying tensions due to dissatisfaction with some obvious opinion leaders, criticized for not sharing all the information or for taking themselves too seriously, there is a consistent anti-lithium rhetoric in the communities of the Salinas Grandes. This negative rhetoric can be split up into three closely interrelated areas: firstly, the local population fears impact on the sensitive natural ecosystem they consider themselves part of, being particularly concerned about the scarce local water resources. In this context one also has to contemplate the profound harmonic relationship with Pachamama (see *Solá*, 2016). Both the Salinas Grandes and the salt itself are not simply seen as a source of work or natural resource but rather as a living being. The salt has a breeding cycle and is harvested year by year: "For us, the salt flat is a like tree. It breathes, it has movement, it contracts and expands all the time. (...) The Salinas is very important to us, it is part of our life" (Interview #26/2018). In fact, the Salinas Grandes constitutes a fundamental part of the local population's history and are an important cultural reference. Regarding salt extraction techniques, workers often refer to their great-grandparents. The communities collectively ensure a rational use to avoid over-depletion. This is why this

first aspect not only includes the local population's own contemporary traditional activities or the development opportunities of future generations, but also the life of non-domesticated animals like vicuñas as well as the Pachamama itself. Regarding the ecological consequences, many local people consider lithium mining as uncontrollable. A salt worker underlines the difference between lithium mining and salt extraction: "For me, salt extraction is also mining. But it is a more controllable mining, because we are not taking it out on a large scale but rather, we are taking it out little by little, in agreement to be able to survive. We want that tomorrow our children can also enjoy what we have today" (Interview #26/2018).

Secondly, the struggle against lithium mining has given rise to an outcry for the compliance with indigenous rights. This demand is based on the international and the national framework of indigenous rights, which is primarily constituted by the Indigenous and Tribal Peoples Convention 169 by the International Labor Organization (ILO) ratified by Argentina in 2000 as well as the Article 75 paragraph 17 that was incorporated to the Argentine constitution in 1994. Lawyer Franco Aguilar clarifies that "the duty to protect these rights, and to ensure that the right to prior consultation is respected, is assigned to the state. The state should be the guarantor of all rights". All demands and criticism are therefore predominantly directed against the state⁴, currently symbolized by the provincial governor Gerardo Morales.

Thirdly, the communities have a very different understanding of *future* and *development*. While the government reiterates the importance of lithium as the future mineral and justifies the exploration and extraction with "economic development opportunities" (see Dorn and Huber, 2020), local residents emphasize their fundamentally diverging view of their own future. "What he [Morales] calls the future is not the future. It's bread for today and hunger for tomorrow. It's just for a moment that you're going to have the money and then it's all going to be destroyed and you won't have anything. What's the future that he's going to leave for our grandchildren, for our children? That's no future at all" (Interview #40/2019).

4.3 Salar de Olaroz-Cauchari: between contracts and loose agreements

From the perspective of the local population, the lithium mining companies started to appear at the end of the 2000s to conduct first conversations with representatives of the communities. At that time the communities only knew the borate mining companies that had been operating in the Olaroz-Cauchari salt flats approximately since the 1940s (Interview #77/2019). Besides, many people worked in Mina Providencia⁵, a copper mine in the north of the department of Susques, as well as Mina Pirquitas⁶, a silver, tin and zinc mine in the adjacent department of Rinconada.

Traditionally, while women took care of the livestock, men were responsible for relations with the *outside world*, including barter trips as well as temporary salaried jobs (Benedetti 2005; Göbel 2002). Around the turn of the millennium, the aforementioned mining projects came to a standstill. Many people, particularly men, started to look for employment opportunities in other provinces, including Tucumán, Buenos Aires, Neuquen and Chubut. Besides, particularly young people left the communities in search of continuing education: "At that time there was no secondary school in most communities. Many people went to the city for education or work and only women and old people remained in the villages. The villages died out little by little" (Interview #64/2019). Thus, when the lithium mining companies started to contact the communities of the department of Susques, these were primarily surprised. According to local representatives, they did not know about prior consultation and indigenous rights and did not expect any consultation. Moreover, many people had already entered into relationships of dependence with the global market and were generally looking for salaried jobs.

A group of local residents saw lithium mining as an opportunity and began to meet regularly. In the meantime, the communities of Salinas Grandes went to the Supreme Court to stop all lithium projects. The Jujuy government asked the communities of Olaroz-Cauchari to come to Buenos Aires in order to defend *their* projects. "We [Olaroz Chico, Catúa, Puesto Sey, Pastos Chicos, Huancar] wanted to make our own territorial decisions. We didn't want to say yes right away, but at least we wanted to give it a chance" (Interview #64/2019).

In view of any change or extension of the mining projects, or at least every two years, the mining companies have to present an environmental report to UGAMP⁷ (Unidad de Gestión Ambiental Minera Provincial). One member of the UGAMP is a representative of *all* communities affected by the mining project. So far, the communities have always sent one representative per community to each meeting for this position (Interview #21/2018). The process is structured in three stages: after an informational session there is a second stage for a consultative presentation. Finally, the third stage is dedicated to questions and critique. Many residents and responsible parties do not agree with the current implementation: “I do not agree with the current procedure, with the methodology used by the government. They present us a book we do not understand, a monograph of thousands of pages of scientific explanations. If you read it, you understand 5%. However, imagine, someone has never read a book. Later we have the possibility to ask questions, but what possibility is there to ask if you have not read the material?” (Interview #24/2018). Besides UGAMP, the relation between communities and companies is characterized by the absence of public officials (Gómez 2019). The communities approved the initial reports and the mining companies started to construct their facilities in the following years. They hired local residents, improved road conditions, installed Wi-Fi connections and contributed to traditional celebrations, among other things. The Australian-Japanese Joint Venture Sales de Jujuy started to extract and export actively in 2014. The Canadian-Chinese Joint Venture Minera Exar expects to catch up in the course of 2020 (see for a detailed analysis of the local value chain Ruiz Peyré and Dorn 2020). In the case of Sales de Jujuy, although there were loose agreements between the firm and all 10 communities – particularly regarding the employment of a local labor force – the company only signed a binding contract with Olaroz Chico, a community located in close proximity to the Sales de Jujuy project.

The local population of the department of Susques still often compares lithium mining with borate mining. In the context of borate mining, many interviewees stated extremely poor working conditions: “Back then, the communities were never consulted by anyone. When I was nine years old, I went to the *boratera* with my father, because my father was a *boratero*. He used to dig borax by hand, with a shovel and a pickaxe. We had to leave at 12am at night to get there at 6am, all the way by bicycle. My dad went to work, and I stayed

to build a fire and to make lunch at noon. He finished work at about 4pm. We often slept under the open sky to avoid having to cycle all the way back” (Interview #77/2019). In comparison, contemporary working conditions in the lithium mines have improved considerably: “The company picks you up and takes you home; you do not have to pay any travel expenses. You have a room there, with television, a shower and hot water. It is clean and they even make the beds so that you can rest right away. The camps are fantastic, you are better off than at home. You really cannot complain much. You can always go to the canteen and eat something. You get breakfast, lunch, dinner. In the afternoon, you have a short break for the *merienda*. You can have a juice, cookie, *turrón* or *alfajor*” (Interview #75/2019).

Even though the outlined differences with regards to working conditions are often understood as an improvement of quality of life on an individual level, the absence of concrete contracts weakens the negotiating position of the communities today. Several community-representatives complain about sudden challenges in making companies keep their promises: “Actually, Sales de Jujuy has always worked with all 10 communities. In October [2019], however, we were suddenly told that regarding the newest environmental report they would only work with the communities from the area of direct influence, Huancar and Olaroz [Chico]. The ILO 169 states that also the indirect sphere of influence must be taken into account. The other communities will eventually be disregarded. The government should be blamed for this, the companies will always take the path of least resistance” (Interview #21/2019).

Initially mainly Susques, and later especially some individuals as well as collectives like *La Apacheta* have fought and do still fight against lithium mining on their territory (see *Anlauf* 2017). Still, a negotiation culture largely prevails, and counter-movements are a minority in number. In the beginning it was often argued that other communities would agree to the projects, with the risk of being excluded from benefits for the own community. Today, many people argue that the mining projects are already installed and that they should make the best of the situation. An interviewee illustrates the communities’ powerlessness in face of missing contracts with the companies: “That is our great disadvantage we have with Sales de Jujuy today. I do not say that we need the same contract as Olaroz [Chico], but something similar would be appropriate for all communities. In general, the companies listen to us

when we have a complaint, but to date it has been very difficult for the company to keep its promises. In a contract, everything would be fixed, and we could check off and point out what is missing. With [Minera] Exar it is different and a bit easier. Of course, many things that were not written down in the contract also disappear” (Interview #75/2019).

4.4 Comparing two communities: divergent perceptions of lithium mining in Huancar and Santuario de Tres Pozos

As the need for local jobs to stem the emigration of young people is often stressed by local inhabitants, the expectations and attitudes of these young people were quantitatively surveyed with a Likert scale. A questionnaire has been realized with all secondary students of the communities of Huancar and Santuario de Tres Pozos (n =59). The data obtained is then contrasted with the qualitative data.

Figure 2 visualizes the agreement or disagreement with a series of statements (six-point Likert scale) and indicates how opinions on certain issues greatly differ between the two villages. All things considered, while the students in Santuario de Tres Pozos tended to respond towards the extremes “completely agree – completely disagree”, the outcomes from Huancar are more ambiguous and indicate greater uncertainty regarding the topic. Answers are often located within the “slightly agree – slightly disagree” range.

Particularly in Santuario de Tres Pozos, students indicate a great pride and identification with their own community. Both communities equally indicate anxiety regarding negative effects on the environment and students in both communities believe in a relation between lithium mining and a decline of the water resources. However, students in Huancar agree with positive impacts of lithium mining for quality of life in their village. Here, many students also believe in a possible emigration wave without lithium mining. While students in Santuario de Tres Pozos do not at all believe in a compatibility of lithium mining with other economic activities, students in Huancar do not completely agree, but indicate that it is rather possible. Students in Huancar sort of feel informed about the agreements with the mining companies and the great majority indicates that people in the community rather agree with the agreements with the mining companies. Regarding the evaluation of future prospects

of lithium mining, results in both communities show a balanced picture. Finally, in Tres Pozos the interviewed students do not feel supported by the provincial government at all, while outcomes in this respect are again rather ambiguous in Huancar.

The questionnaire also included an open question regarding the advantages and disadvantages of lithium mining. The answers have been coded by content. It is possible to identify a negative attitude towards lithium mining in Santuario de Tres Pozos: about 38% of the community’s students did not provide any information regarding the advantages of lithium mining, compared to 13% regarding the disadvantages. Among the advantages, just four students out of 32 mentioned job opportunities. Among the disadvantages particularly environmental pollution, water consumption, water pollution and the potential death of animals were by far the most frequently mentioned issues.

In Huancar we get a totally different picture: while many students named job opportunities and increased monetary income at the family level as positive aspects, the abstentions were higher regarding the disadvantages of lithium mining (35%). Nonetheless, students commonly mentioned environmental pollution and the absence of family members: “They work for many days and rest for just few days” (Questionnaire #42). Next to work-related issues, also environmental aspects like water consumption, death of animals, diseases and damage to health were mentioned.

5. Discussion: two communities, two territories

When considering demarcations involved in the context of nation state formation in the 19th century, one should not forget that a *territoire* is only partially constituted by borders. As of the colonization, administrative territories have always been created from urban centers outside the region. In this context, *Carolina Rivet* (2014) illustrates the importance and fundamentality of the difference between the colonists’ and the colonizeds’ territorialities. On one hand, the Pre-Hispanic population of the Puna region constructed their territory drawing from relationships based on caravan trade, pasture farming, exchange and alliances. On the other hand, colonial authorities constructed their territories in accordance with a European urban logic and ignored pre-existing territorialities.

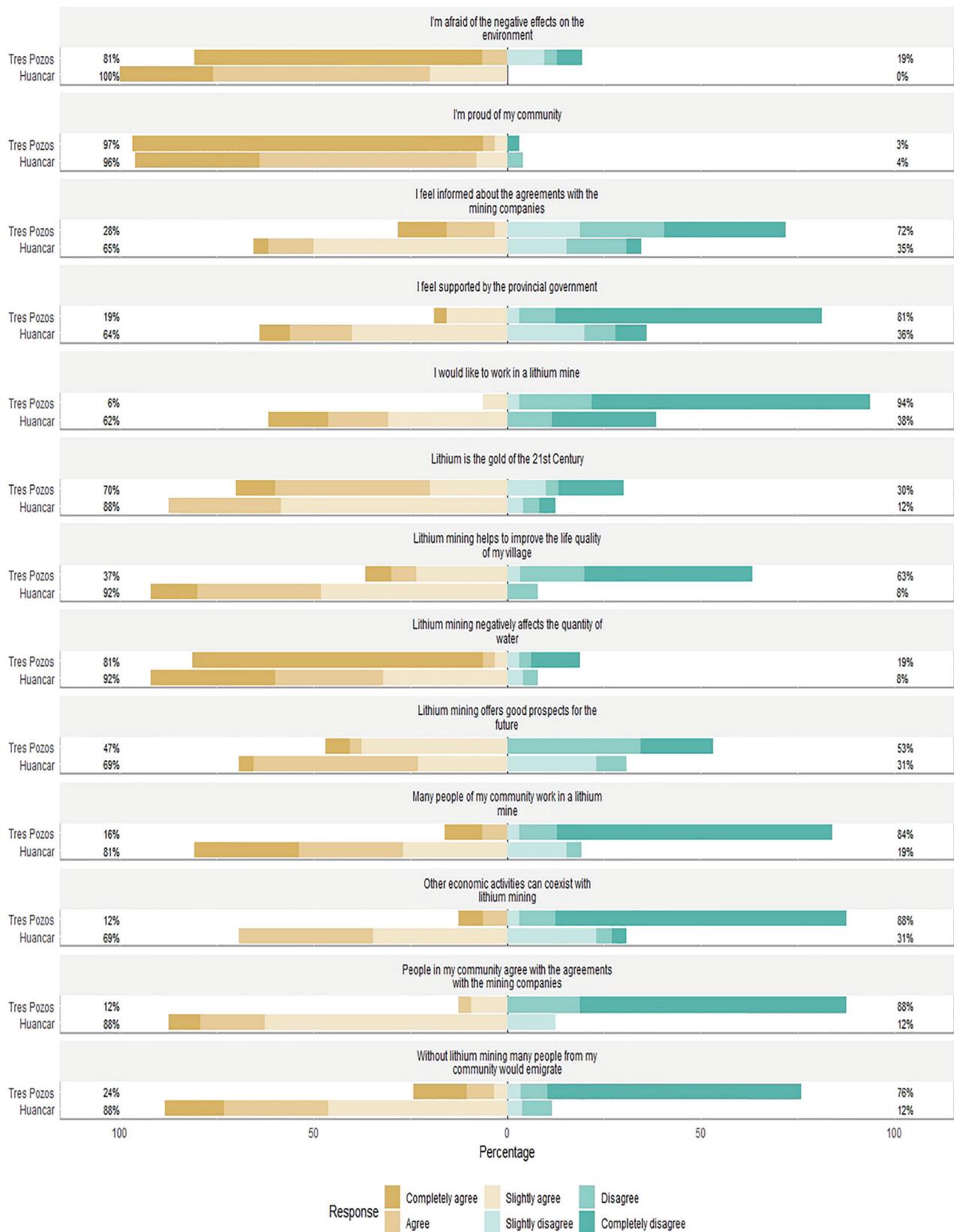


Fig. 2 Visualization of a six-point Likert scale realized in the communities of Huancar and Santuario de Tres Pozos (n = 59, statements translated from Spanish by the author). Source: own elaboration

Constructed through time, for the Atacameños and Kolla people, territory is also an essential category. For them, premised on the traditional transhumant grazing system with high levels of mobility, territory is mainly based on a performative territoriality (territory through practice). By implication, pastoralism served not only as productive activity but also to structure the organization of space (Göbel 2002; Rivet 2014). In the early years of the nation states, the indigenous territories certainly did not correspond with the administrative territories. Nonetheless, the precise distinction between colonists' and a pre-existing colonizeds' territoriality should not belie a cultural hybridity that results from the interplay between both of them. Based on archive and archaeological research, Rivet (2014) shows that the activity of pastoralism has always been related with other activities, such as mining, and underlines that *space* never is a finished product for eternity, but rather in continuous flux (cf. Santos 1990).

As of the 17th century, the principal economic activities in the Argentine Puna were mining and, where possible, agricultural activities in order to provide foodstuffs for urban and mining centers, many of them located in what today constitutes Bolivia. Subsequently, military forces had to be supplied during the wars. Although pasture farming as an economic activity was neither caused by mining activities nor by military operations, it was at least reinforced by those (see for a more detailed perspective Gil Montero, 2018). Until the late 20th century, the communities of the Puna were mostly small hamlets, often constituted by accumulations of houses around a church (see for example Bolsi and Gutiérrez 1973 for the case of Susques) and the majority of the population living scattered in the *campo*. The necessity of villages then primarily resulted from a stronger control of compulsory education and social plans of the welfare state (Interview #35/2019).

This shows that local culture – in a continuous interplay of overlapping territorialities and partial adaptation – has always been subject to change. Thereby, we can fundamentally identify two territorial strategies: for Huancar (Salar de Olaroz-Cauchari), this study illustrates that both the historical and current relations of the inhabitants with the state are characterized by the absence of open rebellions. Instead, the relations between inhabitants and state are predominantly constituted by practices like negotiations, albeit from asymmetrical positions of power (see also

Göbel 2003). This strategy is continuously discernible regarding negotiations with mining companies. Legal experts indicate that ILO 169 has never been fully applied in the case of lithium mining in Olaroz-Cauchari (Interviews #31/2018, #76/2019). This was made possible particularly by two factors: the area of Salar de Olaroz-Cauchari is an area characterized by a historical absence of the state. By taking over state tasks like improving road conditions, establishing communication possibilities or financing secondary schools, the lithium mining companies satisfied immediate necessities and earned the recognition of many local residents. Moreover, regarding working conditions, people have an immediate comparison to borate mining and many people and families were able to improve their material well-being with income from lithium mining. This should not obscure the fact that lithium mining clearly exceeds borate mining in scale, both regarding societal as well as environmental effects that are by no means foreseeable. In the case of Salar de Olaroz-Cauchari, the communities' strategy of negotiation therefore initiated a path of dependent development, which in the long-term further increases their vulnerability. While the competitive environment between the communities has already triggered a detrimental cohesion between them (cf. Pragier 2019; Dorn and Huber 2020), the mining companies, along with the provincial government, increasingly undermine UGAMP and indigenous rights. Both qualitative interviews and the questionnaire illustrate that the local population is aware of these contradictions and people show great anxiety about possible environmental consequences. The verbal juxtaposition of a possible "dying out" of the village due to the emigration of young people with possible future environmental damage illustrates a lack of choices and a lack of options for action by the local population. Pronounced power asymmetries can thus be identified, whereby dependencies on the capitalist economic system, some of which existed even before the arrival of lithium mining, are deepened and increasingly lead to an undermining of social autonomy.

A different strategy in dealing with overlapping territorialities can be identified when examining the case of Santuario de Tres Pozos (Salinas Grandes). In the interviews and questionnaires one can identify a very radicalized rhetoric regarding mining companies and the state. Resistance against lithium mining today is usually realized under the guise of "fear for water". This fear is superficially justified by reference to the potential environmental pollution and the

resulting incompatibility of lithium mining with traditional economic activities. Behind this claim, there is a pronounced demand for self-determination and autonomy related to the recognition of indigenous rights, including the right to prior consultation. In an interview, Franco Aguilar underlines this call for participation: “For me there is a clear historical debt. Indigenous people have always been present, but their rights have not always been recognized. Once the rights are recognized, the non-fulfilment of those rights continues to manifest itself. This is why they [communities of Salinas Grandes] continue to maintain the struggle and to say: We are present.” That is why all claims against lithium mining are principally directed against the provincial government and have to be contemplated as a historical continuity of resistance against the state. Thereby, historical events like the *Batalla de quera* in 1875 and the *Malón de la paz* in 1946 (cf. *Kindgard* 2004; *Paz* 1989) have fundamentally shaped territorial identity and do now still influence current processes. Furthermore, protests against lithium mining provoked a rapprochement between the communities and strongly enhanced solidarity between them (cf. *Pragier* 2019). Here, the strong opposition of the local population underlines the contrariety between the local conception of an autonomous good life (*buen vivir*) and a global – hegemonial – development discourse.

While we can identify diverging territorialities between Salinas Grandes and the department of Susques, these cannot be contemplated as perfectly isolated cases. Transitions are rather fluent: although the dependence-relations of the communities of Salar de Olaroz-Cauchari with the global economy regarding paid labor have to be considered as profound, particularly in the context of Mina Pirquitas and borate mining, the communities of Salinas Grandes were also involved in occasional paid work in mining. Over the past 30-40 years the communities of Salinas Grandes have, however, managed to build a strongly diversified economy that principally combines pastoralist activities with salt extraction and tourism. In contrast, when the lithium mining companies arrived in the region, the communities of Salar de Olaroz-Cauchari were desperately seeking for future economic pathways. Therefore, the outlined structural violence strongly facilitated the settlement of the mining projects without the application of prior consultation.

6. Conclusion

In the Argentine Puna, colonial territorialities did not construct territories upon a static empty space. Instead, they were built on pre-existing social and historical processes and initiated a transformation of practices, lifestyles and eventually meanings and values (see *Reboratti* 2008; *Rivet* 2014). When considering territories as products of past and present social practices, we can understand the different reactions to lithium mining in the communities of Santuario de Tres Pozos (Salinas Grandes) and Huancar (Salar de Olaroz-Cauchari) as the consequence of diverging territorialities. However, diverging territorialities and different territorial strategies are in a reciprocal (not causal) relationship, so that both are mutually dependent and reinforce each other.

In the case of Salinas Grandes, struggles against colonial elites and the state have strongly shaped territorial identification processes for years. The interplay between colonial and local territorialities has resulted in further substantiated resistance. Today, the claims of the local population comprise the demand for rights and recognition. Thus, at the heart of the conflict, the communities’ fight is less about the resource lithium itself, but more about autonomy regarding the Salinas Grandes – their territory. This includes several strongly interrelated aspects, such as respect by the state, a different understanding of progress and development as well as self-determination regarding their own life project. Similar to other indigenous resistance movements in Latin America, territory is also used as a tool for resistance, mobilization and antagonism to a Western development model (cf. *Castro-Sotomayor* 2020; *Haesbaert* and *Mason-Deese* 2020; *López Sandoval* et al. 2017; *Reyes* and *Kaufman* 2011). Concretely, the common understanding of future in view of the present threat of salt flat mining, and the strategy of territorial resistance enhance cohesion between the communities.

In the history of Salar de Olaroz-Cauchari, the communities were frequently forced to arrange themselves with changing jurisdictions. Thereby, their relationships with public authorities were mostly dominated by restraint. History shows that in the communities of Olaroz-Cauchari a negotiation-culture largely prevails. Moreover, based on a pronounced pre-existing dependence on the global economy, the need for employment among the local population facilitated negotiations for the lithium mining companies. Similarly,

for the communities, lithium mining is less about the resource lithium, but can be reduced to labor opportunities. The competitive situation among the communities is fostering rivalry between the communities and often leads to a play-off against each other. Hence, the conflict here is less of an open as of a structural nature.

Historically, the two case studies show different strategies how to deal with overlapping territorialities (i.e. transhumant grazing system, indigenous communities, mining concessions and companies, state, etc.). Today, the arrival of lithium mining as a new actor is again provoking different responses and transforming pre-existing territorialities. Some aspects of these “new” territorialities are already materialized in spatial and social processes: on one hand, in the communities of Salar de Olaroz-Cauchari the enhancement of road conditions has significantly increased the level of mobility. The availability of education and work has changed patterns of migration and is leading to a return of community-members living in the cities and to immigration from other areas of the Argentine Puna. However, environmental risks are shared unequally among actors, so that social-ecological inequalities are further enhanced. Also, the strategy of adaptation already reveals further dependencies of the communities of Olaroz-Cauchari on the global economic system. This led to a decrease of social autonomy and an increase of the communities’ vulnerability when faced with external influences. On the other hand, the communities in Salinas Grandes regularly come together in the Board of the Indigenous Peoples of the Salinas Grandes-Guayatayoc basin, a supra-community organization with decision-making powers. They are supported by a series of non-governmental organizations and they have attracted national attention with several roadblocks. At the same time, a revalorization of “the indigenous” takes place: in communities like Santuario de Tres Pozos we can observe a great pride regarding their own community as well as a revalorization of their traditional economic activities such as salt extraction.

Electro-mobility aims at greening the automotive industry, so that the extraction of lithium is strongly linked – both symbolically and discursively – to “sustainable” future technologies and green growth. However, electro-mobility also requires the input of strategic resources, such as lithium. The spread of the Latin American “lithium-frontier” also implies an expansion of the capitalist mode of production and a (capitalist)

valorization of “new” spaces. Thereby, local and global logics of territorial appropriation compete. Taking up similar struggles among the continent, the local socio-spatial consequences of the lithium mining activity do not substantially differ from conventional forms of mining: in the context of lithium mining, North-South-relations, power asymmetries and social-ecological inequalities are currently re-produced and deepened. In the province of Jujuy, lithium mining is certainly still a young phenomenon and how adaptation to or resistance against lithium mining changes local human-environment relations is still subject to ongoing processes. The resistance movement of the Salinas Grandes can, however, be understood as a single element of a larger social-ecological transformation project that questions the idea of imposed development “from above”. In order to contribute to a broader understanding of this transformation, future empirical studies can and must therefore deal with these alternative proposals on the edges of the capitalist sphere.

Declaration of interest statement

Conflicts of interest: none.

Notes

¹Well aware of the fact that we historically have to differentiate between the *Puna jujeña* and the *Puna de Atacama*, I today consider the notion of *Puna jujeña* as valid for both areas, Cochino and Susques.

²The Secretary of Indigenous Affairs is the province’s first institution specifically for indigenous peoples and was created by decree in 2015. Between 2015 and 2019 Natalia Sarapura, member of the Kolla people and former president of the COAJ, was in charge of the new institution. In 2019, Sarapura became Minister for Human Development. Her successor is Alejandra Liquin. The communities of the Salinas Grandes describe their relations to the Secretary of Indigenous Affairs as “non-existent” (Interviews #36/2019 #39/2019 #42/2019).

³All interviews were translated from Spanish by the author.

⁴This is fundamentally opposed to the case of the Chilean Salar de Atacama, where all claims are principally addressed to the mining companies (cf. *Gundermann and Göbel 2018*).

⁵Before closing due to internal cost problems and falling world market prices, Mina Providencia was actively producing between 1987 and 1997. The Chinese-owned company Hanaq Argentina is currently reevaluating a reopen-

ing (*Hanaq Argentina* 2018).

⁶In Mina Pirquitas exploitation already began in the mid-1930s and shut down in the late 1980s. After being resold twice, production was resumed in 2008 in the hands of the Canadian Silver Standard Resources. In 2016, the company announced the mine's closure (*El Tribuno* 2016).

⁷The UGAMP is composed by 16 members representing the interests of different stakeholders including governmental entities such as the Secretary of Environmental Management, Secretary of Human Rights, Secretary of Public Health, Directorate of Environmental Policies and Natural Resources, Directorate of Agricultural Control, Directorate of Industry and Commerce and Directorate of Water Resources as well as non-governmental representatives of the National University of Jujuy (UNJu), the Geologists Centre, mining businessmen and municipal authorities of the project area (Interviews #3/2018, #79/2019, see also *Marchegiani et al.* 2019).

Acknowledgements

I am grateful to Mario Taschwer and Fernando Ruiz Peyré for comments on earlier drafts of this work. I would also like to thank Isabella Kopp and Lukas Dorn for proofreading. The fieldwork for this article has been funded by the Marietta Blau scholarship of the Austrian Agency for International Cooperation in Education.

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