

Women in senior positions in mining in Chile. Agency and gender tensions

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Abstract: The article aims to understand the relation between gender tensions due to the countercultural situation of women in senior positions in Chilean mining industry, and the strategies and capacities to face them, seen as agency. By using a qualitative methodology, we analyze 13 life stories and conclude that, even in contexts of gender inequality, upward social mobility trajectories question the traditional order. The main tensions are related to family roles, power and recognition, cultural representations of the environment and redefinition of identities. The pre-eminently individual strategies refer to more egalitarian conjugal arrangements; continuity in education; identity based on action, success and achievements; and, a combination of strong character and self-confidence together with loving care, rejecting masculinized leaderships.

Key words: women in senior roles, mining, gender tensions, trajectories, capacity for agency.

Resumen: El artículo busca comprender la relación entre las tensiones de género por la posición contracultural de mujeres en cargos de jefatura en minería en Chile y las estrategias y capacidades para enfrentarlas, entendidas como agencia. Al analizar cualitativamente 13 relatos de vida, concluimos que aun en contextos de desigualdad de género, trayectorias ascendentes, interrogan al orden tradicional. Las principales tensiones se presentan en los roles familiares, poder y reconocimiento, representaciones culturales del medio y redefinición de identidades. Las estrategias, preeminentemente individuales, refieren a: arreglos conyugales más igualitarios; continuidad de estudios; identidad basada en la acción, éxito y logros; conjugar fortaleza de carácter y seguridad en sí mismas con trato amoroso, rechazando la masculinización de los liderazgos.

Palabras clave: mujeres en altos cargos, minería, tensiones de género, trayectorias, capacidad de agencia.

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Introduction¹

Mining in Chile is an industry that historically excluded women or relegated them to feminized –administrative, food or cleaning– functions (Angelcos, 2015). It was only in the last decade that their participation in mining work began to increase slowly, favored, as in other countries, by the need to increase their numbers (Soraire *et al.*, 2013). Currently, data show that women represent 8.9% of the endowments² (3.3% in 2003), with the average in positions of directors/managers 11.9%, assistant managers/superintendents 11.1% and chiefs 8.4% (CCM, 2019). In the country, there has been empirical research on gender barriers in the industry, organizational structure and culture, as well as on the weakness of work-family reconciliation measures (Salinas *et al.*, 2012; Leiva and Comelin, 2015). It is concluded that the mining culture has generated a hierarchy dominated by men, who guarantee their privileges through the functional differentiation of work by sex (Tallichet, 1995, in Salinas *et al.*, 2012: 141), which would continue to be accompanied by the symbolic reinforcement of female exclusion through myths and superstitions (Campos *et al.*, 2016). Except for a study on male leadership in mining environments (Salinas and Cordero, 2016), there has been no in-depth study of the experience of women inserted in positions of power in work sites and operations, evidencing that gender tensions in this niche of the labor market are present even from academic research, which relegates the study of women in positions different from those they have historically occupied.

This article follows the line of research on gender, labor and mining, as a masculinized productive sector. It is part of a broader research, whose objective is to understand the subjective implications of the entry of women into positions of power in the main value chain (extraction, processing and maintenance). Using the concept of agency (Sen, 1999, 2009) as a lens to approach labor trajectories, and the category of gender (Scott, 2008) to understand the web of social power relations between men and women –through a qualitative approach– we explored experiences that would

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2 The low participation of women in mining also occurs in other producing countries such as Australia or Canada, with participation rates of 17% and 18%, respectively; but it should be considered that in those countries the overall female EAP is 72% and 75%, respectively; higher than that recorded in Chile, which is only 48% (CCM, 2019).

evidence questions to the traditional gender order and fissures to the “glass ceiling” (Burin, 1990).³ In our research we privilege the observation of what is mobilized from a transgressive labor position, and not only from the perspective of subordination that will allow us to prove “what we already know” (Tarrés, 2001b). The main research questions that articulated the article are: how did women in non-traditional positions of leadership, management and direction, in a masculinized industry such as Chilean mining, develop labor trajectories, facing the gender tensions that arose in contexts hostile to gender equality? and what strategies, such as agency and resource capabilities, have been and are deployed in the exercise of their positions, which are possible to appreciate through their personal and occupational trajectories? In a complementary way, we ask: what role do institutions (companies and government agencies), as part of the mesosocial space, play in the modification/perpetuation of gender hostility, encouraging or limiting the possibilities of agency in their micro-social trajectories? We will answer this question by interweaving the analysis.

The main research hypothesis we support is that female labor trajectories contrary to normative mandates, even in contexts of inequality and hostility towards women, question the traditional gender order. The specific hypothesis of the article is that educational trajectories in non-traditional careers –overcoming gender discrimination early on–, with projections of continuity of studies, emancipatory parental models, more egalitarian family arrangements in the present and collaborative leadership, are factors that have a positive impact on women who have managed to position themselves in leadership positions in mining, initiating transformations in traditional power structures. In this process, they develop personal resources and relational strategies that have led them to overcome discrimination and barriers, promoting not only micro but also macro-social transformations (Elias, 1990).

3 The metaphor “glass ceiling” (Burin, 1990) has been useful to express the invisible, sometimes “secret” limit in upwardly mobile female careers, which is difficult to break through and hinders professional development. It is not built on the basis of laws, social devices or explicit codes that impose limitations, but rather its foundations are subtle and anchored to naturalization, which make them difficult to detect. They are shaped by cultural and structural aspects. The concept has been described by Anglo-Saxon sociology and economics, which in the 1980s sought to explain the under-representation of women in senior positions (Holloway, 1993; Davidson and Cooper, 1992; Morrison, 1992, cited in Burin, 2004). In its objective dimension it is a discriminatory reality, and in its subjective dimension it imposes detention and setbacks in labor projects (Burin, 2004).

Through the analysis of 13 life stories about personal and work trajectories⁴, understood as intersubjective experiences of women who hold high positions in mining companies in northern and central Chile, we study a process in which, contradicting stereotypical identities, they made decisions, developed individualized educational, training and work trajectories, as they made autonomous choices and joined a masculinized industry, occupying pioneering positions for their sex.

Background

Women in the Chilean mining industry

It was not until 1996 that Law 18,620, which prohibited subway mining work by women, was repealed, challenging beliefs that their presence could bring bad luck to the activity or “make the mine angry”.⁵ Previous research evidences gender barriers that concern organizational culture, since for decades there was an internal hierarchy organized around male codes (Salinas and Romani, 2016; Salinas and Cordero, 2016), which translated into a hostile context, discriminatory practices and discourses (Jiménez *et al.*, 2014; Angelcos and Ísola, 2017), and in its most extreme version in experiences of sexual and workplace harassment (Caro *et al.*, 2019). Women would face gender definitions constructed according to a certain distribution of roles and expectations that would establish who is who and how they should act (Angelcos, 2015). The work environment is extremely harsh. Health risks and extreme environmental conditions induced to think of the industry with legitimate constrictions that conceived it as a “man’s” job (Ayala, 2012). In addition to dust, geographic altitude, rugged landscape and extreme temperatures, there is isolation, low connectivity and family disconnection. Work organization includes geographic mobility, extended working hours, camp living, and shift systems, which result in experiences of dislocation and dislocation from daily life (Mayes, 2019). This has made the insertion of women more complex, given that they bear the historical burden of reproductive work; in addition, the reduced possibilities of reconciling

⁴ For the broader research, a total of 35 women were interviewed (13 executives/managers, 11 pioneer workers and 11 union leaders).

⁵ The female presence could hide the vein, or make it jealous and cause accidents. This phenomenon is not exclusively Chilean, because in Bolivia there is a variant of the myth that the mine or “the uncle” can get excited with the entrance of women, to the point of generating a disaster (Ruiz, 2003).

work and motherhood discourage participation and exacerbate tensions. According to the National Institute of Statistics (2018), the participation of female workers in mining is concentrated in women between 25 and 44 years old. They have a lower average age than men and higher levels of education and professionalization (Caro *et al.*, 2019). Overqualification is perceived as a form of injustice (Angelcos and Ísola, 2017). For its part, maternity is seen as interference and has a negative symbolic weight in labor trajectories, mainly associated with the extension of medical leave, due to the perception of increased labor costs, even when it is concluded that they are reduced (Riquelme, 2011) and of state charge (subsidy). International studies have coined the concept of “motherhood wall”, as working conditions and cultural stereotypes generate the bias that women with young children cannot be good professionals in this industry, showing open discrimination (Minerals Council of Australia, 2013).

This market shows vertical segregation, as women are less likely to occupy higher positions, given their lesser experience and specialization. To move up in hierarchy, it is necessary to meet requirements, in a smaller proportion in them, such as years of service, performance evaluations, theoretical accreditations and psychological evaluations (Díaz, 2014). They tend to wait longer to apply for a job promotion, and the pay gap increases in senior positions (Minerals Council of Australia, 2013). At the same time, there is horizontal segregation. Men are concentrated in operator (34%) and maintenance (30%) positions, while women are concentrated in professional (25%) and administrative support (23%) positions (CCM, 2019) (CCM, 2019). Angelcos (2015: 10) identified two elements that constitute the backbone of discourses of gender segregation in mining. The first is associated with differences in physical strength, which makes men “the capable” and eligible, ignoring the possibilities of new technologies. The second is associated with motherhood.

In the face of a historically adverse context, currently, large mining companies have a favorable statement on equity and have developed some programs in an incipient manner; 80% have indicated retention and attraction objectives, framed in diversity strategies, but only 35% have explicit policies for the hiring of women. Actions include awareness workshops and the granting of possibilities for women to attend leadership and teleworking programs (CCM, 2019), currently massified by the effects of the covid-19 pandemic. From the governmental level, the main initiative is the promotion of a voluntary standard: Chilean Standard 3262 (2012), on gender equality and conciliation, which through a management system demands a series of

requirements to achieve certification and seal (Caro *et al.*, 2019). However, it has had limited penetration, as so far only one state-owned mining company (and its 10 subsidiaries) and one private company have been certified. It can be deduced that the political and social situation is more favorable than in the past for promoting the appointment of women to senior positions, but this is not a linear relationship. Nor has it been measured how these actions impact women's individual agency.

Gender, social order and trajectory tensions

To address the research questions, we will use as a theoretical framework the gender perspective, from critical feminism (Scott, 2008; Hérítier, 2007; Fraser, 2011; Tarrés, 2001a, 2001b and 2013), as well as the category of agency from the capabilities approach (Sen, 1985, 1999 and 2009; Nussbaum, 2014; Cejudo, 2007; Otano, 2015; Keleher, 2014), problematizing the concepts of freedom and agency achievement. The theoretical basis of the gender perspective leads us to understand that the relationships between sexed subjects are primary forms of significant links of power (Scott, 2008). From this approach, the roles of men and women are interpreted as a social construction with a material and ideological base, historically understandable, breaking away from biologizing explanations and universal models. Thus, gender behaviors and the sexual division of labor are a matter of material and symbolic learning acquired through socialization (Hérítier, 2007), where appropriate behaviors and appropriate relationships (Rubin, 1975), under a traditional order, in frameworks of domination, anchored in naturalized cultural mandates, emerge.

Fraser (2011) argues that gender is an economic-political differentiation, but also one of cultural valuation, through which ways of doing, experiences and representations are configured. From this perspective, it is not difficult to see how gender and social order are part of the same gear, where practices converge that regulate the functioning of subjects and, simultaneously, enable them to operate in them (Rebolledo and Valdés, 2018).

Gender, from a critical feminist epistemology, allows us to problematize the occupational trajectories of women in mining, beyond seeing them only as victims (Lahiri-Dutt, 2012). We are currently living in a world of normative changes introduced by the emancipation process of women who have begun to move, even if the way is not necessarily made easier for them. This discursive strategy can contribute to illustrate the irreversible movements whose agenda crosses a good part of the current civilizational

tensions (Valcárcel, 2009). Observing the position of women in high positions in mining from the lens of questioning the traditional gender order would enable the development of reflective actions aimed at transforming power conditions and relations (Tarrés, 2001a).

In order to account for the double process of appropriation of the social world from women's experience, Tarrés' proposal (2007, in Olivera, 2008) consists of analytically breaking down their experience into two levels: 1) the historical-structural movement, which comprises macro-social processes that break patterns of female reproduction, and 2) the historical-conjunctural movement constituted by factors that influence women's biographies to redefine their identities which, although macro historically have been subordinated, comprises micro-changes that cross individualities and are reflected in actions, exchanges and negotiations of meanings (Olivera, 2008).

We used the concept of tensions to express rearrangements or partial changes, based on the participation of women in non-traditional positions, considering that the fact that women occupy high mining positions responds to a countercultural situation; therefore, it is not innocuous and would mobilize identities, traditional arrangements and the sexual division of labor. In female identities, it allows us to approach a look at experiences from the notion of fluid, understood as the process of nonlinear change, in which –in a heterogeneous way– subordination (historical) is combined with contingent acting experiences that, as Tarrés (2001b) points out, are constructed “little by little” and are elaborated on a daily basis.

Having few reference models to identify themselves in mining, these are self-constructed trajectories, developing identities “from scratch”, pioneering, in critical dialogue with the repertoire of available roles circulating among their male peers (Angelcos, 2015). Previous studies have corroborated that women's participation in the industry has implied possibilities of carrying out life projects and conquering a public space, which literature establishes as without return due to its emancipatory changes, being able to find recognition and visibility in such experience (Díaz, 2014).

Some international studies have evidenced modifications of female role and identity, questioning the gender system for a new female subjectivity, highlighting the ability to overcome and tenacity (Jenkins, 2014). Holding a high position would grant status and recognition in the scene of a public conflict, with a voice that is considered novel (Soraire *et al.*, 2013). The concept of trajectories will be used from the registration and analysis of successive positions, since it allows to collect changes in histories, paths in ascending processes, putting into play social resources and agential reactions as strategies (De Certeau, 2000, cited in Madero and Mora, 2011).

The category of agency from the theoretical approach of capabilities

In order to observe the processes that women themselves –as subjects (Tarrés, 2001a)– play a leading role in, we opted for the perspective of agency capacities⁶ (Sen, 1999), which, when approached in dialogue with the justice approach (Sen, 2009), does not ignore the existence of conditions of structural gender inequality to be corrected, in whose reproduction, by action or omission, mesosocial instances such as the State and the companies themselves intervene; but emphasizes the active capacity of women to participate in processes that others have called transformation “from below” or from their protagonists (De Sousa Santos and Rodríguez, 2007).

The definition of agency from the capabilities approach (Sen, 1985) describes what a woman is free to do, be and achieve in pursuit of goals she considers important. It is being able to carry out actions that produce changes according to valued objectives, representing the ability to act (Alkire, 2009, cited in Leiva, 2015), and in turn reflects the freedom to choose between different ways of living (Cejudo, 2007). Sen (1999) proposes an analysis from two interrelated dimensions: 1) the idea of well-being, a condition of advantage from the personal dimension; and 2) agency, as the search for personal valued goals or intention and deliberate will to achieve them, being the one that allows undertaking actions that produce changes according to purpose and obligations, in accordance with the conception of the personal “good”.

Personal agency (Nussbaum, 2014), as the capacity to act or do, problematized from a relational perspective and traversed by achievement and freedom, needs respect and protection from individuals, but also from institutions. In this sense, “agency achievement” refers to the realization of chosen goals and objectives to pursue, and “agency freedom”, to the possibilities of achieving what one wants to achieve, constrained by the social, economic and political opportunities (Keleher, 2014) of the environment. In this analysis, primarily the state, in each society, may play a role in inhibiting or motivating individual agency. In Chile, gender equality in senior positions is still a pending task, as public incentives have not been effective in accompanying transformations in cultural imaginaries (UNDP, 2019) and leading more women to build agentic trajectories.

Agency is exercised when women decide for themselves, when they act with autonomy, purpose and full awareness of their value. Women’s agency

6 The original theoretical proposal was formulated by Sen (1985), as an option to the traditional welfare economics approach.

is configured when they become protagonists, but also when they resolve conflicts and address areas where they experience gender discrimination, because in this process they can become initiators of social transformations (Forero, 2012). The development of freedom of agency should be understood in the midst of a web of relationships, with conflicts of intentions and wills (Otano, 2015; Leiva, 2015). Therefore, the focus is not only on the capacity of individual choice, but also on the forms of solidarity that facilitate the expansion of capabilities (Otano, 2015). Thus, agency and gender tensions would appear simultaneously, evidencing the possibilities of overturning power relations (Tarrés, 2013), the traditional order and becoming levers of individual or collective change (Héritier, 2007).

Methodology

The research resorted to an interpretative paradigm, based on a hermeneutic epistemology and qualitative design (Ruiz, 2003), using life stories as the main data collection technique, with in-depth interviews in one or two meetings. This made it possible to collect experiences and stories that represent the possibility of recovering meanings linked to the lived experience, and at the same time, to glimpse meanings and build a dense knowledge (Kornblit, 2004). The interviews were conducted face-to-face, which made it possible to access subjectivities, delve into the social reality (Vela, 2004) and understand perspectives expressed in their own words.

Thirteen women participated in the study whose main attribute was that they were managers, directors, superintendents or plant managers, preferably in the primary value chain (extraction, maintenance, processing) of mining operations in the country. They were accessed through the snowball strategy (Ruiz, 2003), based on initial contacts with key industry informants generated in previous research, who facilitated access to the profile. The interviews were conducted during 2019. Their professional profiles are chemical and/or metallurgical, industrial, mining and commercial engineers –only one is a social sciences professional–, working in operations in the north and center of the country (except for two who work in the capital).

In order to safeguard the research, an informed consent form was requested to be signed, approved by the institutional ethics committee, where the guarantees of voluntariness, confidentiality, privacy and beneficence for participation in the study were explained. During the interviews they were invited to narrate experiences chronologically, focusing on their personal

and occupational trajectories, seeking to establish gender considerations, in the sense of tensions and the exercise of agency, interweaving vital areas such as education, family and work.

To interpret the information, the content analysis method was used, based on the literal transcription of the recordings and an inductive categorization (Mejía, 2011) that focused on the significant milestones of their life journeys, choices, will to act, resources and strategies from which they have lived the work experience, as well as coping with gender tensions.

Results

1. Socialization, cultural capital and family model in personal trajectories

The average age of the interviewees is 42 years old, fluctuating between 33 and 55. Most of them live in a different city where they work, and have four-day shifts –from Monday to Thursday–, with 12-hour shifts per day, until completing 45 hours per week. They travel by plane under the Fly-in Fly-out practice (Jenkins, 2014) and have concentrated work times in remote geographic areas, without residing near the work sites⁷. Half of the metallurgical, chemical and mining engineers decided to study their careers under the influence of their older siblings, who had already pursued a similar career and provided them with material support, such as accommodation in their homes in mining towns.

Their fathers did not influence this choice, even when they had masculinized occupations in other areas (mechanics or transportation). Most of the mothers worked remunerated in feminized activities (education, administration and commerce), which was relevant in their educational choices. They were strict with their school performance, a model that they reproduce with their own daughters. Maternal demands, interpreted as an impulse to the development of confidence in achievement, would imply a modeling to make empowered choices, which would influence the way in which they forged their current identity. “My mom, above all, has been my great sponsor... she empowered me a lot to accomplish what I wanted... I always had that model, my dad and my mom worked” (Interviewee 1, 34 years old).⁸

7 The decision not to live in the city near the work sites is due to the fact that it lacks the services of the country's capital and lacks quality educational centers. The general quality of life indexes are lower.

8 Personal interview, 2019, Chile.

The cultural capital they acquired as mothers inserted in the labor market, from a gender perspective and breaking with traditional dichotomous models, brought them in tune with ideals such as the promotion of economic autonomy, the defense of women's rights and the recognition of merit regardless of gender. They emerged as positive role models who transmitted values and behaviors, where the ability to choose a job is appreciated for personal development, in addition to learning that expectations require actions performed by themselves, in order to position themselves as protagonists of their own lives. Simultaneously, paternal participation in the domestic field, especially during periods of unemployment, influenced the conception of fluidity and alternation of domestic roles for both genders.

Of the interviewees who have partners (all heterosexual), half work in mining, confirming the tendency for women miners to pair with miners (Caro *et al.*, 2019) because of their understanding of the shift system. The other half are engineers and work in other masculinized industries (agriculture and energy). The intensity of the time commitment required for senior positions in operation is associated with long working hours, a design that is more suited to a male work universe (Burin, 2004). Considering the characteristics of the work (geographic distance and shifts), women with partners and children have non-traditional child care distribution arrangements. This negotiation, with greater male participation in parenting, is a relevant device that acts positively on the capacity for agency and labor choices. The most radical experience occurs when one of the couples renounces her professional career to dedicate herself exclusively to the daily care of her children and domestic roles. In this case, even though the story makes explicit that it was a spontaneous and pragmatic arrangement, based more on the greater projection of the woman's career than on a reflexive decision regarding gender equality, the traditional sexual division of labor and roles was reversed, a formula that facilitated her promotion.

There would be no way I would be doing what I am doing if it wasn't for my husband... he made the decision to leave his career...it was never a deliberate decision... it was originally a test...and then we accepted our different roles... my trust in him gives me enormous relaxation to keep doing what I do (Interviewee 4, 48 years old).⁹

Women who do not have children argue that partners are generally an obstacle, because they are not always receptive to taking on caregiving tasks

⁹ Personal interview, 2019, Chile.

(including pets). From the accounts, it is clear that more egalitarian family models facilitate the management of conflicts related to work choices, based on a more intense dedication to responsibilities and working hours. Likewise, such agreements would lead to less guilt underlying the gender mandate of working mothers, because of the reliance on caregiving.

2. Educational trajectories and agency: excellence and confidence in achieving goals

In their educational trajectories, facilitators for achieving goals were identified, which continue to be present in the exercise of their current positions. Among the most cross-cutting ones is having been disciplined, planned and competitive students. They were always at the top of their class. "I was the tidy, good girl, who got good grades, who answered the teacher's questions" (Interviewee 1, 34 years old).¹⁰ The women were convinced that the achievement of valued objectives (being at the top of the class) implied the will to reach them, with results of satisfaction not only for the achievement itself, but also for the approval of others.

Competition with their male peers could be interpreted as the confirmation of an identity under the external evaluative gaze, as a mirror that reinforces their self-image. A second element that stands out is having developed a trajectory in the organizational and leadership levels. As course presidents in high school or university, scouting and volunteering were chosen roles where they learned teamwork, a sense of belonging, leadership, generosity and empathy, factors that they consider valuable for their current performance and that they have used to counteract gender tensions and resistance.

In their most recent formative paths, some women have acquired or aspire to acquire higher academic degrees, although this is not a requirement for promotion, as they see the continuity of their studies as a personal resource to be developed. They recognize that new learning (technical and attitudinal) is and will be a plus for their professional growth, which will allow them to promote autonomy in their teams and to delegate, especially in an industry that, in addition to not easily welcoming women as managers, tends to concentrate power. "I would like to study a postgraduate degree in mining, like to have technical knowledge ... I still have a lot to grow and learn, I am at a stage where I want to grow professionally" (Interviewee 6, 35 years

¹⁰ Personal interview, 2019, Chile.

old).¹¹ Capacities such as self-confidence and initiative, which emerged in family and school socialization processes, alert them to identify new learning and counteract the feeling of being permanently “on trial”.

3. Social and labor mobility. Agency as actions that produce change

All the interviewees had an important upward class mobility in their trajectories, a process that was developed with extraordinary “sacrifices” and motivated by their families of origin, who urged them to fulfill responsibilities from an early age in contexts of scarce economic resources. In general, their predecessors were not professionals (with some exceptions) and lacked the resources to finance university studies, so they studied with scholarships, resorted to family savings or self-financed them by working during vacations, which for some had negative effects on their health, but did not prevent them from persevering. The stories also reflect the projection of parental desires for mobility through education. “They always told us to study, even though my parents didn’t have a penny... the whole year they raised money... for college” (Interviewee 5, 46 years old).¹²

Women in high positions perceive that the obstacles of the environment, rather than offering resistance, have staged capacities and in some way “created” their lives, challenging themselves to avoid a harmful immobility. They shape their identity with action rather than passivity, because of the socialization they have received and the learning they value from their life paths. Most of them started their careers in the mining industry, where they have had frequent job moves. They find it attractive to move to new opportunities to move up and stand out, either vertically (same site) or horizontally (another site).

In other cases, the idea is to move to a mine of the same holding company, closer to the capital, where they “save time” by reducing travel time. Or to a larger one that exploits better quality ore, because “they gain prestige”. Or moving –especially those with small children– to work near a medium-sized city or regional capital, because “they gain quality of life”. In all these decisions, the capacity for agency can be appreciated as freedom of choice, by identifying a horizon to be reached.

11 Personal interview, 2019, Chile.

12 Personal interview, 2019, Chile.

4. Gender tensions when venturing into non-traditional spaces and positions

Studying a “men’s” career in the 1980s or 1990s implied crossing a threshold of gender segregation, which women experienced with fear, pain, nerves and anguish, because they perceived that they were being “forcibly” integrated into an environment that explicitly rejected them. After having lived experiences of sexual harassment and devaluation of their vocational choice by teachers, they have endured sexist harassment at work by bosses, which led them to make decisions to leave, losing position and salary.

I had an impasse with a boss... I opted for another company... I earned much more there because I was a supervisor, I had good benefits, here I was going to work for a contracting company, but I did not care, I wanted my emotional stability and not to work with a person who bothered me every day (Interviewee 7, 46 years old).¹³

In almost two decades of work experience, they perceive that they have led real daily revolutions within the work sites, generating a new symbolic scenario within the teams and work culture, breaking the male primacy by joining as young women who did not come from the mining “culture”. “I was a young woman, I was not from the company... someone who broke their scheme... everyone looked at me with a questioning face, What is this little girl doing here?” (Interviewee 3, 38 years old).¹⁴

Even so, they recognize that cultural changes, specifically in their male peers, have been slow and scarce; rather, they tend to reproduce routines that naturalize discriminatory practices. They perceive that, as a social group, women have changed more than men, and that the force of the transmission of models and examples of progress among women has encouraged others to enter mining. However, they continue to reproduce, even in a naturalized way, rude and vulgar treatment that makes them uncomfortable because of its hostility, as well as paternalism, a more veiled form of inequality, because they are treated as if they were permanently “exposed to danger”, interpreting it as exclusion and the perception of limitations due to the fact that they are women. The awareness-raising actions for cultural change carried out by some companies (workshops or communication campaigns), being recent and of moderate impact, could favor a change in the environment; however, they have not yet achieved substantive changes in all organizations.

13 Personal interview, 2019, Chile.

14 Personal interview, 2019, Chile.

Completely sexist, there were no women in operations here, that is, I am a pioneer in this plant ... we were very questioned ... a woman, it was very rare... my boss told me, if you go to the roadblock, do not go alone, because it is dangerous... because of the fact of being alone and being a woman (Interviewee 8, 55 years old).¹⁵

All of them have faced situations of gender discrimination in their work trajectories of varying degrees, but this has not become a turning point that would make or make them give up their occupational choices. However, the tendency has been to face obstacles individually (changing companies), even when there is awareness that these are common and shared experiences (“we were very questioned”).

5. Strategies, validation resources and agency in the face of gender barriers

Faced with the challenges of holding a high position, there are nuances, since being a pioneer has had both favorable and unfavorable aspects. Even though this fact makes a mark, allows them to learn about themselves and the role, and opens paths for others, it is also noted as tremendously exhausting due to the level of exposure, since all eyes are on their performance, they are more vulnerable to criticism and sanctions, and they feel permanently evaluated. The tendency is to respond to these cultural obstacles by over-demonstrating their capabilities. Others confirm that they have held back promotion options due to self-observed barriers, biasedly thinking that they needed more preparation to exercise the positions offered or to comply with the requirements demanded. Despite this, today they all aspire to promotion, not only for their own sake, but because they want to leave a legacy in the history of women in mining.

At one time I was offered a position as a boss, and at that time I put up a barrier, I said no, that I needed a diploma, a coach... later I want to be general manager and vice-president of mining operations... leave a legacy to more women, what I do well opens the doors to women... I have always wanted to support... give talks, be a mentor (Interviewee 5, 46 years old).¹⁶

To face the harshness of the relational climate, the mechanisms developed to counteract it refer to: the assumption of strength of character (being tougher and more direct), but combining warmth and kindness; transmitting messages clearly and forcefully, even if they are complex and involve disagreements; complete vision of problems and solutions; awareness of progress; maturity; autonomy; and prioritizing human aspects in the

¹⁵ Personal interview, 2019, Chile.

¹⁶ Personal interview, 2019, Chile.

management of the role. All these components contribute to face the hostility of the environment, seeking to stop being seen as a threat by their male peers.

Learning to have defense tools has allowed me to settle in the mining world... they told me: you know that here the leadership positions are only for men... I have grown in character, a little tougher, to see things more clearly... I have had an evolution, more mature, independent, less fearful (Interviewee 9, 33 years old).¹⁷

The imaginary of the masculinization of the leadership role is present in the stories, in an environment that has tolerated authoritarian, vertical and careless leadership of positive emotions in treatment. In this context, they believe that they are expected to fulfill the same traditional traits. However, in practice, most of them do not wish to comply with them, or even more, they tend to contradict them, displaying attributes opposite to the stereotype of the expected position, thus aspiring to obtain positive results both in terms of productivity and internal climate. Gender socialization would mark their current behavior, which can be interpreted as not being able to “escape” from historically and socially valued feminine attributes, even when exercising a traditionally masculine role. They seek to stand out from the value of difference, rather than from a mechanical equalization, placing people at the center of their vision, as well as the impacts and risks of management; it is a decision that they have acquired over time, and even with external support, such as occasional participation in leadership programs.

It gets a little confusing that you have to bang on the table, be just as ordinary to talk as a man to be heard... if I have to be heavy, I change my tone of voice a little, I try not to stop being nice and they understand me (Interviewee 9, 33 years old).¹⁸

Others argue that the challenge of interacting from a different position, not only because they are women but also because of their untraditional behavior in the exercise of positions of authority (almost all of them are pioneers in their current position in their company), causes the environment to be surprised and to perceive them with reticence, without recognizing the transforming opportunity. “I find that my environment has a hard time understanding what to do with me ... I’m the odd one out ... in spaces where people know each other, there are roles, it’s hard to get into” (Interviewee 10, 54 years old).

The experiences are managed, based on trajectories of ascent that are self-constructed step by step (Tarrés, 2001b), working on a daily basis

17 Personal interview, 2019, Chile.

18 Personal interview, 2019, Chile.

based on self-confidence. It is observed that they have sought to build a collaborative leadership, which implies involving others, complementing their self-confidence to raise differences, with an openness to learn, under fear of making mistakes and assuming the risk of their choices. This behavior is different from what is known, as they point out that in the mining culture there is a fear of publicly confronting the lack of knowledge and men tend to ask for help through homosocial pacts, being conservative, as they reproduce the relational dynamics they already know. For women, the new exercise in the field of power implies recognizing that they can make visible the possibility of making mistakes and thus improve.

In terms of the sociology of emotions, a communication strategy developed –not very common in mining environments and which enjoys little legitimacy in the workplace– is the incorporation of amorous expressions in the exercise of the position, which they are not shy about showing, and which they associate with their passion and mining vocation, as well as with the value they place on interpersonal relationships. In the first case, they claim to have a love, disposition and aptitude for mathematical sciences, metallurgy, mining aesthetics and field work; therefore, enjoying their work allows them to neutralize difficulties and hostilities.

In the second case, the centrality of human relations, the daily sharing with others, the system of shifts and life in camps, implies giving a homelike imprint to the work space. The loving treatment of this new subject in the industry (women bosses) would be a strategy that seeks to gain familiarity and is used to confront the a priori refusal of workers to be directed by a woman, allowing them to advance in the achievement of personal (positioning) and organizational goals (achieving the goals associated with the position). However, women are aware of the paradox of challenging traditional identities and dealing with entrenched gender biases.

I love my team... I live in my work, therefore, affection is generated... I have breakfast, lunch, dinner, I go to the gym with the same people, there is a nexus that you generate that is different from other areas... but they also expect you to always be soft, that is a prejudice, if a woman is strong, it shocks (Interviewee 6, 35 years old).¹⁹

In a context of social transformation, the dimensions of social macro-movements that generate higher reflection on women's rights and gender equality –as biographical, their own trajectories of ruptures to the traditional– are generators of changes at the identity level. Women say they have developed higher reflexivity, admitting that they themselves reproduced

19 Personal interview, 2019, Chile.

traditional gender stereotypes and biases, and that they were even used as “quick” integration strategies, views that they now reject.

I have normalized many things, that now with the social movements, I realized that it is not correct... that they are happening to carry... my colleagues to this day make silly jokes, that at this point we should not do... I didn't realize it (Interviewee 11, 37 years old).²⁰

As an endogenous device, the younger women perceive themselves as more empowered in homosocial contexts, affirming that they are not intimidated by their condition as women and knowing that they are breaking inherited mandates. This is not an easy experience. They perceive it as a “good sign” to actively participate in the training of other women, to promote a culture of good treatment, encouraging flexibility, delegation, trust in the teams and avoiding micro-control. An exogenous device that was observed in one of the companies that is developing pro-gender equality actions and that contributes to the exercise of empowered female leadership is the measures to eliminate gender biases present in promotion policies –for example, promoting a pregnant woman– which, even though they are a minority, are emblematic. The interviewees fail to appreciate direct influences of the State in the promotion of agency capabilities.

Discussion

Women in high positions in mining operations make up a new social group that responds to an exceptional experience, which we have observed from the prisms of gender (Scott, 2008) and agency (Sen, 1999), identifying both transformations and continuities, which are concomitantly expressed as tensions. Experiencing countercultural positions from a gender perspective, by occupation, position and location, allows us to identify mutations that we have been able to observe in the biographies. The most important changes in their itineraries have been: choosing a masculinized career based on family incentives and the influence of emancipated maternal stories, permanently projecting continuity of studies and career advancement, developing collaborative leadership and thus questioning traditional leadership in the industry, and promoting a more egalitarian and democratic organization of domestic and conjugal life. The continuities remain in the persistent cultural resistance of the environment (subordinates and peers), which is

²⁰ Personal interview, 2019, Chile.

expressed in traditional expectations regarding the role of a woman as a boss, as well as in the perception of barriers to motherhood and the still scarce implementation of corporate actions to mitigate them.

As they are pioneers in their positions, they carry in their own trajectories, in first person, the gradual change of the modification of roles within the mining labor market, by exercising positions of power previously denied, which, according to the accounts of those who have been in the industry for more than two decades, were first pushed by themselves, and only a few years ago have some companies begun to push forward, pressured by global movements (corporate and social) and local measures –such as Regulation 3262– that have incipiently contributed to questioning stereotypes that hinder women’s advancement.

However, it is the biographical movement embodied in women that contributes most to reducing discourses of inequity. This situation is consciously experienced by women themselves as a responsibility, since it implies processes of clashing against historical barriers transferred by socialization processes (Héritier, 2007). Likewise, they are subjectively perceived as an example for others, because they “open doors”, question “glass ceilings” (Burin, 2004) and circumvent the devices of a work culture that rejected the exercise of power by women. Even though some gender mandates are diluted in them, we maintain that it is a transition that occurs from a rather unilateral vision, because it has been revealed that it is a transformation process that is sustained and concentrated more in themselves than in the environment as a whole, including business and state policies.

From the perspective of the interviewees, among men in the industry there are still simultaneously coadjutant positions –adhering to equality objectives in an explicit manner– and others of rejection. When triangulated with theoretical approaches, this process is valued from the lens of the change of an individual agentic dimension (Nussbaum, 2014) that is constituted as a confrontation to the traditional order, even accompanied by conflicts (Otano, 2015).

On the other hand, a deployment of agency capabilities was evidenced, understood as the exercise of freedom to do and achieve goals considered valuable (Sen, 1985; Keleher, 2014) which, incidentally, questioned traditional identity constructions (Tarrés, 2007, in Olivera, 2008) by not choosing to reproduce relationships with peers or subalterns based on submission and service. Experiences in which they introduced new ideas that disobey standard forms in gender social relations (Scott, 2008), rejecting masculinization in the exercise of the position, seeking to dissociate

themselves from authoritarian styles, privileging collaborative leadership, communicative interactions based on respect and kindness, recognition of the value of the other and horizontality, which contrasts with the traditional profile collected in previous research (Salinas and Romani, 2016). Aesthetically, they do not require themselves to modify gestures or voice timbre, and most maintain traditional feminine icons such as makeup or painted nails, but without seeking to stereotype their attire (helmet or pink boots).

Their life trajectories allowed us to understand the main daily cultural influences that were combined in the freedom to choose (Cejudo, 2007). In the first case, there is the intergenerational transfer of subjective cultural capital (Bourdieu and Wacquant, 1992), especially from their mothers, especially those who were inserted in the labor market. This is followed by siblings, parents and mentors who emerged in their first jobs. One of the most frequently reported “struggles” has been to confront their own current identity with the traditional gender identity (Tarrés, 2013) and the profile of leadership known in the industry. They have seen themselves as the “rare ones”, first at university because they were among the few who studied mining careers; and then in the workplaces because they are among the few who also hold positions of power being younger than their male counterparts, and exercise the position being direct and strong in leadership, and simultaneously loving, kind and collaborative.

In their extra-work environments, they also represent the different in terms of identity, due to their non-traditional marital arrangements, their temporary relocation to another area to work and leave their children in the care of others, among other counter-regulatory decisions to a traditional gender identity and sexual division, a perspective from which ways of doing, experiences and representations have been culturally valued (Fraser, 2011).

Although these stories are based more on personal merit, they are still linked to more macro transformation processes (Tarrés, 2007 in Olivera, 2008), such as the elimination of legal restrictions for women in subway mining and the influence of cultural globalization processes that influence business statements and the definition of government initiatives (Standard 3262). The positions they hold are positions won from a gender, class and age perspective; bringing into play intersectionality (Expósito, 2012) as an explanatory category to understand the power to counteract inequalities that intersect through the thrust of positioning strategies, which –from various variables and not only that of gender– challenge the status quo.

In the validation strategies (De Certeau, 2000, cited in Madero and Mora, 2011), understood as agency capabilities (Sen, 1999) and resources deployed in hostile contexts and low tolerance to female leadership, the study includes various actions developed to overcome difficulties in the exercise of the position achieved, such as demonstrating capabilities (Caro *et al.*, 2019) in the process of legitimization, which can be interpreted as gender injustice, since it is a specific demand focused on them, not transversal to all managers; being collaborative in order not to appear as a threat to their peers; complementing security in technical skills with the ability to ask questions; and rejecting a confrontational style that was subjectively validated for a long time in the past and currently questioned from modern models of leadership. These strategies include some that are part of the feminine stereotype, since they are associated with affectivity or “warm” emotions (Burin, 2004), such as love and horizontality. However, others are linked to their opposite, “cold” emotions (Burin, 2004), such as demanding efficiency in the task. These would then be transitional profiles, which often present a conflict to reconcile the two types of bonding – affective and rational dominance– (Burin, 2004), but which appear latent after the search for personal and work goals.

As limitations and challenges of the current work and possibilities for broadening views and articulating interpretations, we plan to gather the perceptions of other industry actors, such as men in senior positions and in subordinate positions, regarding the agency capabilities and gender tensions experienced by women in senior positions.

Conclusions

The exceptional participation of women in management positions in mining, analyzed from a qualitative dimension and under the lens of the categories of gender, as significant relations of power (Scott, 2008) and agency (Sen, 1999), allows us to approach the understanding of symbolic elements that would be put into play in a process of ongoing cultural transformation, and that although it contains transgression of the normative –traditional positions and identities–, it must be examined in its paradoxes and with temporal caution. Even so, we argue that, in broad terms, it interrogates the gender order that operates as a device for the production of subjectivities and acts by constraining subjects and bodies in a web of traditional power relations (Rebolledo and Valdés, 2018). Realities embodied in women who occupy high positions in mining, which are extraordinary, can be recognized as the spearhead of a development that seems to have no cultural (Díaz,

2014) and institutional return, as it is endorsed by government and business programs that the industry itself fosters, and by new representations that drive women from their daily trajectories and experiences, which support processes of change. These are articulated with meanings that circulate from the social sphere and allow us to contribute to the understanding of horizons of transformation of gender relations in a homosocial labor market, which has shown the permanence of resistance to change and gender discrimination practices that still survive.

In relation to the questions and hypotheses, we conclude that the main gender tensions faced by women in senior positions in mining, and which could be extended to other masculinized industries, are presented as: a) conflicts in family roles, b) in power and recognition, c) in cultural representations of the environment, and d) the redefinition of identities. In the first area, motherhood, upbringing and care continue to be one of the main sources of tension exacerbated by the characteristics of the activity (distance, shifts, low connectivity) and high responsibility of the position, which, paradoxically expressed as conflict, appears with greater intensity in those who are not yet mothers under the sign of the “ghost of motherhood”, a new metaphor that adds to that of the “wall of motherhood” that the literature has recorded (Minerals Council of Australia, 2013).

Secondly, gender tensions are observed due to the historical model of the exercise of male power and new attributes that position women, where elements of traditional femininity carried by socialization and new feminine subjectivities are imbricated (Jenkins, 2014). The inherited model of power concentration and leadership, vertical and authoritarian, is strained by collaborative and horizontal imprints deployed by women who, in an initial context of rejection and exclusion, have now moved to a veiled vigilance, as they are more exposed to error and perceive themselves as always being “on trial”. Thirdly, the gender tensions generated by the cultural representations of the environment have been experienced as sexual and sexist harassment from the past (university or previous jobs), now as discomfort and annoyance in the face of the naturalization of rude and demeaning treatment, the demand for masculinization in the exercise of the role (gestural or verbal), because it is what is expected and known, paternalism as a sign of benevolent sexism, and for being seen as a threat, since their mere presence introduces changes to a homosocial culture. The actions of the companies, some of which have been influenced by government initiatives, such as awareness-raising initiatives, have been punctual (not permanent) and their effects are moderate. Finally, identity tension is manifested in the

perception of being the “odd ones” in the work environment, but also outside it, which seems to introduce modifications in their self-observed profiles, without giving it a positive or negative connotation. This expression reflects the idea of biographical movement that implies individual rearrangements in this case, where partial changes and ruptures coexist, but that could project negotiations of meanings at a macro-social level, without pretending to look at the identities of women in high positions in a homogeneous sense.

Regarding the resources and strategies deployed, interpreted from the pivot of agency, we conclude that they have a preeminence in an individual rather than collective dimension, although with an intentional projection towards solidarity ties, since they claim to intend to leave a legacy in the future and transfer learning to other women. From the micro-social, personal resources have an experiential, intergenerational and intersectional (with class and age) path. From an intratrajectory historical look, the research identified resources nested from the primary and then higher education experience –based on discipline, excellence, competence and participation in leadership roles and social help–, attributes that were later forged in their formative and work itineraries; likewise, they picked up from their flexible parental models the search for non-traditional and egalitarian conjugal arrangements.

From an intergenerational historical perspective, it is mainly the cultural capital transferred by their mothers of emancipatory orientation, accompanied by pragmatic facilities granted by siblings and paternal motivation for social mobility, which would have an impact on agentic biographies, producing a change in the production of sexed patterns of choice and behavior, which influenced a non-traditional vocation and trajectory from a gender perspective. Based on the intersectional view (Expósito, 2012), considering the structural and historical characteristics of the culture of the industry –hardness and aridity of the environment and practical complexity–, the class origin of the interviewees (low-income families, with early work experiences) and the premature clarity in their project of social ascent have a positive impact on the deployment of personal resources to face class, age and gender barriers, with early work experiences) and the premature clarity in their project of social ascent have a positive impact on the deployment of personal resources to face class, age and gender barriers, forging attributes such as resilience and capacity to face adversities in the face of prejudice because they are women, do not come from professional families and are younger than their subordinates.

To summarize, the deliberate strategies currently used by women in senior positions to counteract gender tensions and barriers in mining are the

following: a) more egalitarian family-marital arrangements allow them to reduce guilt, work with more confidence and increase the ability to respond affirmatively to job advancement; b) pursue and project continuity of studies to counteract the perception of being the “newcomers” and “being on trial”; c) demonstrate an identity based on action, success, and both technical and attitudinal achievements to circumvent the culture’s rejection of being led by a woman; d) as subjective strategies of defense against hostility, they seek to combine strength of character and self-confidence with loving treatment, without neglecting the human aspects of the productive process; e) finally, they oppose the demands of masculinization of the position from an authoritarian point of view, valuing the differential contribution from a collaborative leadership style.

We confirm the theoretical approach that argues that the agency capabilities deployed by women leaders does not mean that conditions of structural gender inequality to be corrected (Sen, 2009) do not persist (Sen, 2009), since society continues to perpetuate a gender order where men, in general terms, hold greater power and privileges (Rebolledo and Valdés, 2018); an issue that the same interviewees have validated and that is maintained as gender conflicts in mining, personified in subordinates and male peers. However, even considering such inequalities as part of the relational and cultural framework, the educational and labor choices of women in high positions evidence exercises of agency, understood as freedom of choice and development of actions for the achievement of such agency (Keheler, 2014), questioning the gender order, confirming the general hypothesis of the research.

Extending the use of agency theory to the empirical reality studied allows us to confirm the specific hypothesis of the article, since educational trajectories that overcome early gender discrimination, projections of continuity of studies, disruptive maternal models, more egalitarian family arrangements and collaborative and effective leadership styles have a positive impact on the power positions of women in mining. Thus, the possibility of being social subjects that push and, at the same time, are involved in mobilized processes of change, in the first instance individual, with potential collective effects, even partial, is sustained.

This constitutes a societal challenge, which at present has more micro scope, in its own itineraries, and can be the initiator of macro social changes. It is confirmed that the incipient experience of women in high positions exemplifies civilizing tensions (Valcárcel, 2009), in the sense of transcendence, setting possibilities for other women, as previously non-existent female

models begin to be constituted, due to the drive of the women themselves, rather than necessarily facilitated by the environment, since the initiatives of the companies are still incipient and those of the State of low scope. The challenge is to continue to deepen our understanding of the evolution of these ongoing transformation processes.

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