Selling the sociotechnical sublime: critical reflections on introducing STS to managers of a Chilean mining corporation

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ABSTRACT

Since its very beginning, science and technology studies (STS) has focused on the complex dynamics involved in the transnational mobilization of scientific knowledge. Beyond their merits, until recently, such analyses have been devoid of reflexivity about the global travels of STS as such, and the differences its practitioners and concepts make at their point of destination. To begin filling this void, this paper uses the method of autoethnography to critically analyze one tiny episode on the movement of STS to Chile: two presentations made by the author to managers of a Chilean mining corporation. Focused on trying to obtain access to carry out fieldwork on the mine’s premises, in such presentations, STS was introduced in the form of a sociotechnical sublime, an enactment looking to generate in the audience a mixture of awe about the possibilities involved in STS-based analyses to increase the mine’s sustainability, and fear about the imminent risks of not adopting an STS-lens rapidly. Such a move ended up greatly instrumentalizing and depolitizing STS, opening urgent questions about the political ontology of researchers when making STS travel.

KEYWORDS

Transnational mobilization of knowledge; reflexivity; STS; sociotechnical sublime; Chile

1. Shame

I was facing a serious research dilemma in mid-2013. In December 2012, an application of mine to FONDECYT (Chile’s main research funding scheme) had been approved to carry out a project to study the governance of tailings, the main waste produced by Chile’s booming mining industry. Following the current science and technology studies (STS) literature on waste, tailings had to be studied as complex entities that continually emerge from the interlocking of a great number of elements, including biochemical components, regulations, human beings, judgments, climates, infrastructures, etc. In particular, this project was designed to study tailings as participants in particular kinds of "waste regimes" (Gille 2010), or the multiple practices and forms of knowledge that look to regulate the production, distribution, and storage of mining waste.

The research method behind the project was an ethnography consisting on carrying out an extensive participant observation in a tailings dam belonging to a particular mine. The main objective was to describe in detail the very concrete ways in which the
tailings were processed and stored and how they relate to other entities such as authorities, local communities, natural entities, experts, epistemic devices, etc. This was tricky because, in Chile, and in line with the practices of the mining industry elsewhere, mining corporations are especially secretive organizations. Although the tenets of corporate social responsibility have strongly permeated their discourse, they are almost completely focused on carrying out outreach activities with actors located outside the mine premises. To let any external actor inside the mine, beyond the usual mine tour, is very rare. In most cases, this access is only given, after lengthy negotiations, to academics from the field of the natural sciences and engineering, to carry out fieldwork relating to some technical aspect of the mine’s operation. In contrast, granting access to a social scientist to conduct a long-lasting ethnography was completely unheard of. Such reluctance was not only derived from the usually critical stance of social scientists regarding mining corporations, but also from the strangeness of the research method selected. Up to that moment, most social research on the Chilean mining industry had chosen to do either historiographical studies or interview-based projects focused on the effects of the mine on its surrounding communities. For these reasons, it was highly likely that a project with these characteristics was going to be seen with reluctance at best by the actors in charge of granting access to researchers to mine premises.

The first months of the project seemed to confirm this suspicion. After sending emails and letters to most large Chilean mining companies, only a few of them replied, one of them accepting to have a first meeting (a meeting that was unsuccessful), while all the others excused themselves from being involved in the study. By April 2013, the time by which I had planned to start fieldwork, I was more or less in the same position as in January. At this point, I started to be seriously nervous, fearing that I would not be able to implement the main component of my data collection strategy. Then I had a lucky break. Early in May 2013, I interviewed an academic with ample experience in the technical study of mining waste remediation schemes. As usual, after the interview, I asked her if she knew anyone who might be interested in my project and she told me, to my surprise, that she knew someone who might probably be interested from the community relations area at Mina El Teniente, property of the state-owned mining corporation CODELCO. I contacted this person, and after some time he replied inviting me to the mine headquarters to do a presentation, in order to consider whether there was any possibility of collaborating on this. I was ecstatic. Not only was this the first proper advance that I had on the search after several months, but also the potential case was of utmost interest.

Mina El Teniente is located 100 kilometers south of Santiago in the Andes Mountains. It consists of more than 3000 km of tunnels, being usually considered the largest subterranean mine in the world, producing mostly refined copper (475.000 tones in 2016). For more than a century of its continual operation, El Teniente has had five different tailing dams. The current one, known as Embalse Carén, is located in an intermediate mountain range that is 90 kilometers from the mine, the tailings being mobilized to it through a concrete canal that crosses through several highly populated areas. Finally, the case was especially interesting, given that the mine is the property of the state-owned Corporación del Cobre (CODELCO), one of the largest mining corporations in the world and the single-most important source of revenue of the Chilean state. Given this, El Teniente appeared as
an ideal location to do fieldwork; so from the very first moment, I saw this presentation as a key instance for the potential success of the whole project.

I ended up making two presentations in May and June 2013. The presentations went quite well and, following an extended period of further negotiations, I was granted access to the El Teniente premises, being able to perform very interesting fieldwork following workers of El Teniente’s waste management unit on their daily shifts (for examples, see Ureta 2016; Ureta and Flores 2018). However, every time I thought about these meetings afterwards, I could not avoid feeling a small degree of shame. This shame was derived mainly from the way in which I introduced STS to these managers. On recollection, the image that came more vividly to my mind was of myself as a caricature traveling salesman, a charlatan selling the latest foreign conceptual novelty just for the sake of my personal gain. To make matters worse, such an offer was not merely a repetition but involved, like any translation (Law 2006), a betrayal of the most critical components of STS in order to present it as a highly innovative approach to the issue of waste management but, quite paradoxically, fully compatible with CODELCO’s conventional corporate practices. In doing so, I turned STS into a “mutable mobile” (De Laet and Mol 2000) for all the wrong reasons, depoliticizing and instrumentalizing it in the process.

For some time, this shame resurfaced regularly when I worked with the material collected in that fieldwork, a feeling that motivated some half-hearted attempts to analytically dwell on these meetings, such as a couple of conference presentations. It was not until I received an invitation from the editors of this special issue that I decided to properly dig into those meetings and my subsequent shame, in the belief that a key aspect that is “(un)making STS ethnographies” in Latin America involves the practices of STS practitioners such as myself, especially when we mobilize and transform components of STS in order to fulfill certain aims, of research or otherwise. In line with this, this speculative piece aims at critically exploring the mechanisms through which I mobilized STS in those meetings and the effects they had on their outcome. In doing so, and more generally, it aims at contributing to the (still) incipient reflexive literature on the transnational travel of STS and its multiple complexities, especially to/from Latin America. This effort will not relieve me from my shame, but at least it will turn it into something productive.

2. Reflecting about the travels of STS

In scrutinizing my behavior in such meetings, the most appropriate methodological approach to take seems to be an autoethnography. An autoethnography can be defined as a research approach that “uses a researcher’s personal experience to describe and critique cultural beliefs, practices, and experiences” (Adams, Holman Jones, and Ellis 2015, 1). In particular, this autoethnography makes use of “deep and careful self-reflection – typically referred to as ‘reflexivity’ – to name and interrogate the intersections between self and society, the particular and the general, the personal and the political” (Adams, Holman Jones, and Ellis 2015, 2). In doing so, the practice of autoethnography always looks to produce “research … [that is both] rigorous, theoretical, and analytical and emotional, therapeutic, and inclusive of personal and social phenomena” (Ellis, Adams, and Bochner 2011, 11). In an autoethnography, the personal and the social become deeply intermingled, in both the methodological and the analytic sense. Therefore, an autoethnography aims to “challenge the exclusivity of supposedly value-neutral,
rationally-based categorical thinking and abstracted theory in explicitly celebrating emotionality, political standpoint position and social activism” (Grant, Short, and Turner 2013, 4). As a consequence, personal involvement in the issues of concern are analyzed, producing an approach that could be labeled, in stark contrast to the detachment characterizing all “good” scientific research, as scientific attachment to the issue of concern.

In particular, in this piece I will practice what Anderson (2006) has called “analytic autoethnography,” which is different from what Ellis (1997) calls “evocative autoethnography”\(^1\) Analytic autoethnography is a particular kind of reflexive approach where, while the researcher is still evidently embodied in the research process, she is also “committed to an analytic research agenda focused on improving theoretical understandings of broader social phenomena” (Anderson 2006, 375). Such an analytic approach is distinguished by a reflexive stance that “expresses researchers’ awareness of their necessary connection to the research situation and hence their effects upon it” (Davies 1999, 7). In practice, this reflexive approach means that “the researcher’s own feelings and experiences are incorporated into the story and considered as vital data for understanding the social world being observed” (Anderson 2006, 384).

However, when trying to apply this autoethnographic approach to an STS story, things get murkier. This is so because reflexivity, the cornerstone of any autoethnographic story, has a troubled history in the field, even creating a lively controversy some years ago. At the center of such a debate was the question of how much (if any) self-conscious reflexivity was good and/or necessary in an STS story. Derived from the conventional STS recognition that, in fact, any piece of academic writing is intrinsically reflexive, as it cannot escape its author (Latour and Woolgar 1986), demands for STS stories to become more explicitly reflexive (Woolgar 1988; Ashmore 1989) were counterbalanced by arguments claiming the extreme futility of such an enterprise (Lynch 2000; Pels 2000). As recounted by Passoth and Rowland (2013, 470–471),

> Overt attempts by authors to be outwardly reflexive during account-making results in a number of predictable problems (Lynch 2000) (1) typically unsuccessful rhetorical stabs at gaining “moral rectitude and epistemological panache” (Pels 2000, 2), (2) a clumsy inclination, especially among scholars in the sociology of science, to commit “self-exempting fallacies, which constitutes an embarrassing and public ‘failure of nerve’” (Pels 2000, 2), and (3) the unfortunate inability to distinguish the reflexivity-of-actors from the reflexivity-of-accounts (Czyzewski 1994). … Reflexivity is, on the whole, uninteresting, ubiquitous, and unremarkable, and surely not a “methodological virtue and source of superior insight, perspicacity or awareness,”

Then, critics claim, the unavoidable reflexivity of any scientific text means that there is nothing really new of claims about the need to be reflexive in our analyses. From this perspective, any ethnography is an autoethnography, whether we recognized it as such or not. This is because “even an account that does not refer to the circumstances of its production and the epistemological or moral position of its author carries mundane reflexive marks of the context of its use and circulation” (Passoth and Rowland 2013, 472).

However, as Passoth and Rowland (2013) themselves explore with positive results, there is a way to reintroduce reflexivity, and with it autoethnography, into STS stories. Contrary

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\(^{1}\) Or an autoethnography that gives analytic primacy to the emotional and sensorial involvement of the researcher with the issue.
to most conventional descriptions of autoethnography, such a way begins by ceasing to see reflexivity as a virtue in and by itself, automatically adding a layer of quality, truthfulness, and/or ethicalness to our research findings (Lynch 2000). On the contrary, an STS-inflicted autoethnographic account will necessarily see “reflexivity is every bit as much a monster as an ally” (Passoth and Rowland 2013, 480), a potential controversial way of rendering STS stories, full of possibilities but also always involving the possibility of becoming a “suicidal attitude” (Latour 1988, 169), given all the potential risks involved in such an approach, as detailed above.

As a consequence, my objective in making an STS autoethnography will be much more humble, not seeing reflexivity as an instant virtue but putting it to work in order to contribute to deepening the emerging literature on the global diffusion of STS (Lin and Law 2014, 2015; Law and Lin 2017; Kervran, Kleiche-Dray, and Quet 2017; Connell et al. 2017). A starting point for such literature is the recognition that so far STS is still an heir of a particular western political ontology in accordance with which “Western realities become ‘the reality’ and other people’s realities are considered merely different interpretations of reality” (da Costa Marques 2014, 85). As a consequence, locations such as Latin America and Asia have been seen mostly by STS practitioners as “a space for data extraction or a place to which European concepts diffused” (Anderson 2017, 229). Given this scheme, local intellectual communities are “lock… into positions of subordination within Euro-American-ordered disciplinary structures. Indeed, and as a part of this, they also have tended to erode alternative modes of knowing and learning” (Law and Lin 2017, 7). Such a position of subordination has resulted, in the Latin American area in particular, in a situation of an “increased academic rigor, systematization, standardization, and specialization of ‘forms of research’ …[among local practitioners of STS is] thus accompanied by less thematic diversity and by the application of already well developed methodologies” (Kreimer and Vessuri 2018, 30).

Although there is much to praise about this body of literature, up to now, no thoughts have been given to a key component of the process of global diffusion of STS: the role of STS practitioners themselves. A hint that such a role is much more complex than plain stories of epistemic colonialism can be taken from the work of Rodriguez Medina (2013, 2014), who has studied extensively the appropriation of foreign conceptual devises by Latin American social scientists. A main conclusion from his work is the recognition that local scholars at the receiving end of the global diffusion of western science are not just passive sufferers/active opponents of epistemic colonialism. They tend to have a complex relationship with such knowledge, being usually very active in transforming and using it to their own advantage. As a consequence, he concludes “translation of foreign knowledge by peripheral scholars is possible even if there is no negotiation at the international level” (2013, 29). This is because such translation “takes place locally, under the rules of the peripheral scientific field whose networked nature shapes the translations produced” (30). Local scholars in peripheral countries are involved in a complex process of entangling and disentangling foreign knowledge, as a result of which the effects of such diffusion are usually quite messy and multifaceted. These are stories of power, as any other story of knowledge diffusion, but of a power that goes through multiple paths and speeds, even pulling in opposing directions at the same time.

This piece will use autoethnographic reflexivity to help shed some light on precisely such a process, how an STS practitioner such as myself uses some conceptual devices
of STS to attain certain non-epistemic ends. Given that much of STS global mobilization is made through the doings and sayings of actors such as myself, such a reflexive approach will illuminate the micro-mechanics of STS diffusion, helping to better understand the transformations and challenges it faces when reaching destinations such as Chile and, centrally, our own responsibility in such challenges.

3. Becoming a cetesiano

During the second half of 2012, soon after returning from spending a couple of years abroad, I participated in a series of meetings held in different universities in Santiago. Attended by a variety of people, most of them with academic positions, their objective was to discuss ways through which we could advance toward further developing an STS community in Chile. Personally, such meetings, especially the attendance of more than 20 people in them, were highly surprising.

I have been working with STS conceptual devices since my PhD, which finished in 2006. However, the years leading up to those meetings were marked by a practical isolation, given that I barely knew anyone knowing about or, even less, working with STS in Chile. Such a situation reflected a general marginality of the country in the Latin American STS community as a whole. As highlighted by the literature on the topic (for an overview, see Kreimer and Vessuri 2018), STS concepts and practitioners have been traveling to Latin America since its very beginning as a discipline. However, the destination of such travel was highly uneven, with some countries (especially Argentina, Brazil, and Mexico) advancing rapidly toward forming proper communities of STS researchers and growing degrees of institutionalization, while in others STS was barely heard of until quite recently. Chile clearly belonged to the second group. Despite a sophisticated and well-connected university sector, at the turn of the millennium STS was largely unknown to most Chilean researchers, even the ones dealing with issues in which STS had acquired a relevant voice such as environmental or medical controversies.

The 2012 meetings signaled a clear departure from such a situation. Responding to several factors, in a matter of a few years, STS conceptual and methodological devices had started to be known and used by a growing group of Chile-based academics. Several of these people were present in these meetings, forming a highly diverse group, from doctors exploring the ontology of certain diseases to engineers interested in the history of computing, passing through a bunch of social scientists (such as myself) dealing with a wide array of unconventional topics.

What brought us together was a shared interest in not only applying the sophisticated conceptual devices of STS to study local issues, but also doing it from a critical perspective. Following the scheme proposed by Sismondo (2008), we could say that most of us located ourselves within what he calls the “engaged program.” Looking to surpass the strict descriptive/analytical approach of early STS analyses, such a program aims always “to address topics of clear political importance … placing relations among science, technology, and public interests at the center of the research program” (21). Furthermore, for several of us (although not for all), STS was a tool to conduct critical studies of the transformation processes experienced by the country since the 1980s, usually associated with the deployment of a radical program of neoliberal governance, from which several acute issues emerged, from social services experiencing multiple shortages to extended
environmental degradation. Then, STS was never merely an analytic novelty, but also part of a program of critique and, hopefully, reform of such issues.

The main consequence of these meetings was the establishment of CTS-Chile, the first association of STS practitioners in the country (CTS being the acronym for “Ciencia, Tecnología y Sociedad”). Although at first CTS-Chile was little more than a mailing list, steps were taken to accomplish growing degrees of institutionalization, such as organizing an annual meeting. Personally, a related consequence of such meetings, and the ones that regularly followed from them, was the progressive emergence of a sense of belonging, of becoming a cetesiano. Instead of the former isolation, we were now part of a community, a quite loose one, but a community nonetheless. Such belonging was not based merely on the bonds of friendship that I developed with other members of the network but also about this shared program, the notion of STS as a tool of critique and transformation. Then, to become a cetesiano was somewhat more than the shared practice of using STS in our research projects or as teaching material; it was also to share to a certain degree the aim of putting such conceptual and methodological devices to work when dealing with the negative consequences of Chile’s imperfect modernization processes.

The original aims of the research project motivating the meetings at El Teniente was not merely to apply STS devices to the analysis of waste management practices by the mining industry in Chile, a topic that up to then had been only analyzed by local social scientists from a historical perspective (Folchi 2004; Vergara 2011). Following the critical stance shared with other members of CTS-Chile, such analysis would be made with the aim of “proposing changes that could help us redefine the way with which we deal with the waste produced by productive and consumption activities that could allow us to advance towards higher levels of environmental sustainability,” as it was explained in my original application. In such a process, as it was also stated, a radical transformation of the way the mining industry deals with its waste was necessary, from forgetting conventional ideals such as the “ultimate sink” (Tarr 1996) to opening up to new notions of democracy and accountability, summing up multiple constituencies from local communities to the intractable agencies of waste itself. Such a critical aim, however, was importantly challenged during the meetings at El Teniente, as we will see.

4. The meetings

I was quite nervous on the morning of 30 May 2013 when I arrived at the El Teniente headquarters for the first meeting. The nervousness was derived from the importance that I assigned to the outcome of it, as explained in the introduction. Besides, it was going to be my first time inside the mine premises. From the outside, the site looked like an average industrial complex, just a series of unimpressive two- and three-story buildings, several of them looking quite dated, surrounded by a high fence. However, all the security checks that I was exposed to at the entrance, from providing detailed information about myself to even giving my laptop’s ID, raised my personal alarm. Such checks reminded me that this was not a site of easy or regular entry, especially for actors conducting a “critical” research project such as myself.

Once inside, I was led to a nondescript office with a table and a dozen chairs in a building housing the Gerencia de Sustentabilidad y Asuntos Públicos (sustainability and public issues area GSAE) of El Teniente, where the meeting was to occur. After a couple of
minutes, Raul, my gatekeeper, arrived, followed shortly by seven other people, all male, being a mixture of managers from GSAE and the Gerencia de Aguas y Relaves (water and tailings area, GAR). The general structure of this meeting (and the one that followed on 20 June 2013) was that after a short introduction by Raul, I presented my project for one hour aided by a PowerPoint presentation. On both occasions, the audience was relatively active, making multiple comments and asking questions while I talked. To my relief, the mood was somewhat relaxed and (relatively) friendly, most of them seeming interested in what I was there to tell.

As expected, both presentations were consciously structured to make the biggest possible impact on the audience, hopefully convincing them about the relevance of my project. Following this, they were framed on a rather straightforward problem-solution mode, (1) first making a diagnosis of the current management problems regarding the environmental impacts of mining waste and then (2) presenting this research project as a way to deal with some of these issues, explaining in detail what could they expect from it.

4.1. The two-world hypothesis

The presentations started with a slide affirming that “the copper industry faces a paradoxical situation in relation with the management of the waste produced by mineral processing.” Such a paradox was evident from the recognition that, on the one hand, the dangers of the process had been significantly reduced, mainly by an important evolution of security standards, new technologies, and more regulation. However, on the other hand, the risks associated with the activity had remained the same (if not increased), mainly from “higher degrees of mistrust on the part of the citizenry.”

Conveniently dropping the more critical stance of the project proposal, and presenting a first betrayal to my cetesiano being, the issue was presented in terms that strongly resonated with the usual discourse of the mining industry itself. Such a move seemed to be effective, as rapidly one member of the audience interrupted me to show his support for this framing.

The curious thing is that we are making the project better, with transparency, security norms, all, nevertheless mistrust remains. Nowadays trust does not grow along with transparency. Beforehand transparency was trust in me. Not any longer, [nowadays is] “proof me, proof me” … It is a very strange phenomenon. It should be more trust to increased transparency, but no (Marcos Gana, GSAE manager, presentation 1, 30-05-13)

So, the initial setting of the issue was accepted by the audience, scoring a point on my behalf. Here was a mining company that had made very important efforts to increase the security and sustainability of their waste operations but faced the “strange phenomenon” of a citizenry that stubbornly refused to acknowledge such efforts. Such refusal, I continued, was not meaningless but implied diverse negative effects such as controversies with local communities, bad press, regulatory ambiguousness, and higher operative costs, among others.

2Apart from the name of the author, all the names of the participants on the presentations have been changed to protect their anonymity.
After setting the dilemma, the next stage of the presentation was to propose an explanation for such an outcome, an explanation that could be labeled as the two-world hypothesis:

Traditionally there is a quite radical division between social and technical aspects of waste issues, and most major mining companies make two departments [to deal with them], one is completely technical and the other, generally much smaller, deals with social issues. And the technical department makes what is known as technical fixes, that deal with purely engineering solutions to the issue of tailings management, … and that look to introduce new standards, new technologies, each one presenting itself as the last panacea that would allow them to solve ultimately the issues at hand … and on the other hand we have a purely social area, that is usually based on two strategies, on the one hand, to inform the community, believing that such information will ultimately allow them to rationally realize that tailings are not dangerous … and on compensating them, usually involving payments in goods (Ureta, presentation 1, 30-05-13)

What was central for the argument that I was making was that such a neat division of the issue was not solely, as usual, a matter of technical personnel dismissing social aspects as irrelevant to their work, but also of social scientists themselves, such as the ones working at GSAE, as I continued.

… Our critique is not only of engineering, or the technical approach, but also of sociology and the social sciences in general. … As much as we criticize the bias among engineers and technical personnel that see the world in terms of technical things, we criticize the bias of sociologists and social scientists that see everything as societies, communities, power and bla bla bla. At the very end, and this is our interest in contacting and collaborating with you, this is the idea, to make fieldwork that involves not only people in the communities but also of the mine, the personnel, … in order to have a more integral view, that I think is a view that is missing in the mining [waste] issue (Ureta, presentation 1, 30-05-13)

In this excerpt, I can clearly see myself very actively making “boundary work” (Gieryn 1983), establishing a frame separating myself not only from engineering but also, and centrally, from the social sciences. Social sciences play with the two-world hypothesis and, hence, we should not take it as the solution, as it could have been expectably said by someone such as myself, a sociologist working in an academic sociology department. By doing this, it was very clear how these presentations were from the very beginning “a process through which the scientists set boundaries and acquire their identity by including some actors as interlocutors and excluding others” (Rodriguez Medina 2013, 18). Through such boundary work, I was able to set my project on a different – new, exciting, promising – path, making it more likely that these managers would consider it interesting and worthy of being granted access to the mine’s premises.

So, the stage was set, an unsolvable problem was presented and accepted as reasonable to the audience that I needed to convince. What I required now was to present them with an alternative, a new path that would lead them away from such troubles.

4.2. The sociotechnical sublime

And then enters STS.

… what we are looking to do is to challenge such state of affairs, to apply to the study of environmental issues an approach known as sociotechnical. Such an approach, derived from developments made by what is known as science and technology studies since the
1970s, deals with a certain way to understand what exists, to understand what you see daily, as heterogeneous issues that mix both social and technical aspects ... so they must be understood as complex assemblages. ... From this perspective, waste issues, pollution issues, should be seen from a different point of view, from an integrated point of view, without making radical divisions between who are inside, the technical personnel, and the ones outside, the community, but understanding them as ... an intermingling of relations ... that share many common elements (Ureta, presentation 2, 20-06-13)

In this fragment, STS is introduced not merely as a particular theoretical perspective, but as bringing something new: the possibility to bridge the separation proposed by the two-world hypothesis. At the very center of such capability lies the concept of the “sociotechnical,” a term completely alien to my audience. Through the usage of a sociotechnical lens, I argued, the world forcibly divided into social and technical entities becomes an “integrated” one, full of lively “heterogeneity,” using another conceptual fad dear to STS practitioners such as myself.

Applied to the mining waste issue, such a sociotechnical approach will bring all kinds of benefits, as I continued,

... when we talk about what is understood as waste, or how waste is governed or managed, we are always talking about several regimes, or the different ways in which the actors involved define them. On the one side, we have a definition that could be the definition of the company itself, or the engineering part, that deals with the whole technical issue, with technologies devised to manage waste, but such a way of seeing it crashes with the way the authorities think about tailings, with the way the community thinks about tailings, with the way the media thinks about tailings, and there is a superposition on concrete places and cases of all these different regimes, of all these different ways in which the related actors think and act about tailings. For some tailings are mining externalities, for others pollution, for others they are toxins and will always be toxins. Then we have the superposition of these regimes, of these different ways to understand the problem, and what I think is interesting about the regime approach is that it tries to leave aside the idea that some actors have the capacity of defining tailings in a correct way, usually the technicians, and that there are other known as “communities” that are always external and have other visions or live in another world (Ureta, presentation 2, 20-06-13)

Adapting Gille’s (2010) concept of “waste regime,” this section presents the mining waste issue as characterized by multiple groups, each one of them enacting its own version of it, from resources to toxins. What is central, as the last part of the excerpt emphasizes, is that accepting the sociotechnical motto implies that no form of enacting waste could be located as being ultimately “correct,” especially not the one of the technicians themselves.

Hoping to emphasize this point, eight slides of the presentation (Figure 1) included a visual representation of these multiple waste regimes (in plural), seeing them as the central node of a network in which multiple actors participate: authorities, communities, mining companies, the media, etc. To highlight this point, the figure is accompanied by the text “these ‘waste regimes’ in the case of mine tailings are continuously produced in multiple locations and by an ample diversity of actors.”

Following from this, the next slide affirmed that “to advance towards higher levels of socio-environmental sustainability, the national mining industry needs to develop better coordination mechanisms between the different existing waste regimes.” Adopting a quite authoritative tone, this slide presents the adoption of a sociotechnical approach not as an option but as a need for mining corporations to really “advance towards
higher levels of … sustainability.” The main way through which such a more beneficial situation would be achieved, drawing freely from Mol (2002), would be through the introduction of “coordination mechanisms,” presenting the term underlined in order to give it more weight, to make it appear as the ultimate panacea that would allow mines such as El Teniente to deal better with the increasing problems they face regarding the environmental impacts of its daily operation.

Therefore, a sociotechnical approach to the mining waste issue, forcing the point a little, was introduced as the ultimate solution to the problems raised by the two-world hypothesis. To adopt a sociotechnical approach was not presented as optional, or casual; it was mandatory. Otherwise, they risked a continual increase on the currently intractable problem of the public mistrust of mining, with the ultimate consequence that their already shaky “social license to operate” (to use a fashionable CSR fad) would be lost for good. The sociotechnical approach, then, represented an opportunity but also a risk; failing to adopt it, insisting on the two-world hypothesis, would almost certainly mean to start a process of steep increase at the level of social conflicts relative to mining operations, with unforeseen negative consequences for El Teniente and, given the centrality of CODELCO in the country’s revenues, for the Chilean state as a whole.

Given this particular framing and the strong effects attached to it, it seemed as almost natural later on to assess my introduction of some STS tenets in these meetings as a matter of enacting a sociotechnical sublime. Derived from the well-known concept of technological sublime developed by the historiography of technology (Marx 1964; Nye 1994), both presentations certainly looked to generate in my audience “an intoxicated feeling of unlimited possibility” (Marx 1964, 198) about the concept of the sociotechnical. In a similar way as in the Kantian usage of the term sublime, my version looked to present it as a concept “whose massive form produces a combination of awe and fear” (Masco 2004, 351); awe about the possibilities involved in the approach and fear that not adopting it could lead to unmitigated disasters.

Such a way of framing the issue seemed successful, with most of the audience in both meetings agreeing at that point that this represented a new approach that could help them to better understand the problems they were facing at the local level. However, the
downsides of this strategy were rapidly evident in the latter part of the second presentation, when discussing the concrete benefits that such an approach could provide to El Teniente.

Ureta: which, do we believe, would be the benefits for CODELCO derived of our study? On the one hand, as I already told you, the first benefit would be to identify critical points that could be improved, maybe not today, but by trying to see how these different waste regimes connect to each other, we can identify what kind of recommendations or adjustments could be made to avoid future problems and we can correct situations that are problematic nowadays …

Gana (GSAE): this would also give us some hints about how to fight tendentious movements that mobilize critical opinions about our activities without major [knowledge], right?

Suarez (GAR): but the reach goes further than this, I assume? I mean [you could say to us] "you know, you are sick" or "you are sick, here are the medicines, every eight hours", because if you told us “this is the issue, here and there” and then pass it to us without recommendation and we return to the classical solutions of “let’s talk [with teh community]” and we just send Matias to talk to them …

Ordoñez (GSAE): of course, then I believe this is what it is said there [on the PowerPoint] “insights for future projects”, in order to know that this methodology works, it gives us information … that tomorrow we could use in our approach to communities …

Suarez (GAR): what I’m talking about is if you’re going to leave us a methodology in broad lines, I’m not saying that it says “apply this once a year”, I’m not talking about this, [I mean] “do you know, your way of approaching must end being transactional, compensatory” and the very same thing we asked, [ways] to incorporate them [communities], to make them part of the solution

A first, but quite expected, downside was derived from my practice of presenting my STS-based research project as mostly a tool for “highlighting” future problematic issues. Leaving aside all the critical potential that STS concepts and methodologies could have to really challenge them to think differently the way they approach the whole issue, my study becomes little more than a conflict visualization device.

Further interventions from members of the audience, however, reveal more problematic downsides of my version of STS. First, we have the intervention of Gana, a mid-range manager of GSAE, for whom my research project, and STS as presented, appeared as mostly a tool to fight the “tendentious movements” that criticize CODELCO, referring mostly to social movements against the mine’s environmental liabilities organized from time to time by local communities and environmental NGOs. In this case, STS appears as a tool to show them how their opposition is not based on proper knowledge and, hence, it should be dropped. Only the situation described by the sociotechnical sublime is real, and this situation should be dealt with by peacefully “coordinating” all the different takes on the issue, not openly opposing them. Here, we are on the land of happy, “flat,” coordinated heterogeneity, not on the usual one of exclusion, fracture, and radical invisibility. Such enactment of STS was cemented by further interventions, especially the ones by Suarez, a high directive of GAR. According to their words, my STS-based case study was turned into a generalizable tool to know and govern complex issues, especially the ones dealing with mistrustful communities. From this take, my version of STS becomes an instrument to manage better their community problems, a new and exciting “methodology” that would allow them to surpass the dead end to which their insistence on the two-world hypothesis frequently led them.
This is, at the very end, the full promise of the sociotechnical sublime: to finally “incorporate” mistrustful communities into the body of CODELCO’s operation, ceasing automatically most kinds of open resistances on their part. As it frequently happens with such problematizations, in this case “the sublime is ultimately resolved via a false sense of intellectual control” (Masco 2004, 351), becoming a “strategy of appropriation underwriting the construction of the modern (political) subject” (Wawrzinek 2008, 16). Derived from the way in which it was enacted by myself in both presentations, STS becomes at the end just another tool for corporate power, a further turn on the never-ending search for more comprehensive ways to govern unruly subjects, a shiny new governmentality.

5. Conclusions

Trying to (somewhat) appease my shame at betraying my nascent cetesiano identity, this article has been an exploration of the role of scholars based on the periphery of global knowledge production in the local reenactment of such knowledge. The findings of Rodríguez Medina (2013, 2014), show how local scholars such as myself are by no means passive sufferers of STS’s epistemic colonialism, as some literature might lead us to believe. Despite being produced abroad, when arriving at places such as a meeting room in central Chile, the conceptual devices of STS are actively used (or, I might better say, abused) to achieve multiple personal ends, a usage in which the involved researchers cannot claim innocence.

In parallel, and probably more importantly, these local adaptations of STS conceptual devices do not necessarily mean its enrichment or strengthening. As explored with the concept of the sociotechnical sublime, local interventions could go in exactly the opposite direction, producing new versions of the foreign theory that openly betray several ethical and political values embedded in its original formulation. Instead of forming a heterogeneous ensemble with local forms of knowledge, traveling STS conceptual devices are transmuted … into brief abstractions that remove them from their context, this makes little sense to an STS sensibility, and so does violence to the related STS idea that since theory cannot be sensibly detached from its uses it does not travel lightly. (Law 2008, 630)

A further lesson that could be extracted from this story is that we should not praise local appropriations of foreign knowledge, or locally produced knowledge, just for the fact of being local. Such translations could also produce multiple forms of betrayal, transforming the imported conceptual devices into tools to enforce existent regimes of power and oppression. Actually, such local appropriations could have even a worse effect than the case of a foreign scholar who just comes to collect data and then leaves, because they are produced by actors with usually deeper insights into local dynamics and, hence, with more tools to alter them. Also, we should not criticize foreign knowledge devices just for being “immutable,” because such immutability could lead to protecting important ethical and political tenets embedded in them. Leaving aside both positions, cases such as this call us to scrutinize the kind of operations that such knowledge makes when traveling, regardless of its origins, mutability, or adaptations.

Thankfully, this unhappy intervention in the global diffusion of STS seemed to have had no major consequence – as far as I know CODELCO is not planning to launch “A sociotechnical methodology to manage communities” anytime soon. But it could well have done so.
For this reason, a last lesson that we could extract from this precautionary tale is the ethical and political responsibility of scholars such as myself to care for STS. A central component of the political ontology imbued in the ongoing global diffusion of STS should be to continually recognize that we – as scholars, as inhabitants of “peripheral” societies, as ethical beings – are doing much more than merely applying STS to multiple new, and exciting, cases and localities. We are also enacting a certain politics of STS, a politics that could have important consequences not only for the entities, human and nonhuman, being affected by our research practices and products. It could also have important consequences for STS as such, depoliticizing, essentializing, fossilizing it. For this reason, as much as we care for our research locales, topics, and subjects, we should care for traveling STS because it is also fragile.

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