

Theoretical Essay

# Organizing in the Ruins: Contributions of Multispecies Approaches in Administration

## Organizar em Ruínas: Contribuições de Abordagens Multiespécies na Administração



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### ABSTRACT

**Objective:** this essay problematizes destructive organizational practices that produce and perpetuate spaces in ruins. Drawing from the practices of the mining industry in Brazil, exemplified by the rupture of the Fundão dam (MG), we theorize about the contributions of multispecies approaches to Administration. **Thesis:** we propose, through dialogues between organizational studies and multispecies studies, the concept of a multispecies organizing of space that transcends exclusively human relations. We consider space as both product and process in everyday organizational life, yet we highlight the limitations of the human-centric focus in the literature. We conceptualize spacing as a non-human production of practices entangling humans and actors composing environments and various species of plants, animals, fungi, and other forms of existence. Thus, we challenge a hegemonic view in the field, underscoring the importance of a more inclusive and ethical approach to spatial and organizational practices. **Conclusions:** we rethink social and organizational dynamics, emphasizing not only mining activity but other corporate practices through a spatialized and more-than-human perspective. The essay contributes ontologically by making visible the agency of other living beings in organizational processes and practices, methodologically by decentering the human in research, and politically by analyzing asymmetric power relations. Such contributions enable the promotion of a broader and more responsible understanding of the complex relations between humans and non-humans in organizational contexts.

**Keywords:** multispecies; organizational space; practices; disasters; mining.

### RESUMO

**Objetivo:** este ensaio problematiza práticas organizativas destrutivas que produzem e reproduzem espaços em ruínas. Partimos das práticas da indústria mineradora no Brasil, materializadas no rompimento da barragem de Fundão (MG), para teorizar sobre contribuições de abordagens multiespécies para a Administração. **Tese:** propomos, a partir de diálogos entre estudos organizacionais e estudos multiespécies, a ideia de um organizar multiespécies do espaço que extrapola relações exclusivamente humanas. Consideramos o espaço produto e processo no cotidiano organizacional, mas salientamos as limitações do foco no espacializar humano na literatura. Tratamos o espacializar como uma produção mais que humana de práticas que emaranham seres humanos e atores que compõem ambientes e diferentes espécies de plantas, animais, fungos e outras formas de existência. Com isso, desafiamos certa visão hegemônica na área, sublinhando a importância de uma abordagem mais inclusiva e ética nas práticas espaciais e organizativas. **Conclusões:** repensamos dinâmicas sociais e organizativas, enfatizando não apenas a atividade mineradora, mas outras práticas corporativas sob uma perspectiva espacializada e mais que humana. O ensaio contribui ontologicamente ao visibilizar a agência de outros seres vivos nos processos e práticas organizativas, metodologicamente ao descentrar o humano na pesquisa e politicamente ao analisar relações assimétricas de poder. Tais contribuições permitem promover uma compreensão mais ampla e responsável das complexas relações entre seres humanos e não humanos em contexto organizacional.

**Palavras-chave:** multiespécies; espaço organizacional; práticas; desastres; mineração.

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## INTRODUCTION

A time of ecological disorders, socio-environmental disasters, and climate emergencies: that is how the scientific literature has characterized the first decades of the 21st century. In Brazil, the relation and the role of administration in relation to these phenomena, recently studied around the concept of Anthropocene, have been debated and viewed as fundamental, especially in the field of organizational studies, although it has also been addressed in other fields within and in dialogue with administration (Alcântara et al., 2020; Figueiredo et al., 2020; Freitas et al., 2021; Nogueira et al., 2021).

In this essay, considering the importance of theoretical production based on local contexts (Bispo, 2021, 2022), we adopt mining practices as a starting point, especially in view of recent episodes that occurred, for example, in 2015, 2019, and 2023 in Brazil, such as the failure of dams in Minas Gerais, and the lowering of land surface in Alagoas, due to the activity of corporations that operate in mineral exploration, such as Samarco, Vale, and Braskem, which produce and reproduce spaces in ruins (Tsing, 2019) with their organizational activity. The impact of mining practices in the Global South is extensive and the human and non-human victims in different environments and ecosystems are already countless. Regardless of the level of severity<sup>1</sup>, operational failures in tailings dams, due to their recurrence and increasing trend since the 2000s, are even expected (Bowker & Chambers, 2017; United Nations Environment Programme [Unep], 2017), although not always reported, especially in countries on the periphery of capitalism (Rico et al., 2008).

We understand that criminal disasters such as those presented in the previous paragraph do not necessarily result from managerial dysfunctions or technical limitations, but are inherent in the geopolitical division of negative externalities. Although situated in a context of many conflicts, a certain 'coercive harmony' is placed in the industry through the perpetuation of what Svampa (2013) calls *consenso de los commodities*. This supposed consensus centers the debate on large export-oriented extractive projects, made possible by state support, favoring part of the interest groups (mining companies and governments) that enabled a new hegemony of a productivist view of development and sought to deny or cover up discussions about negative implications of the exporting extractive model, reinforcing a discourse of lack of alternatives to a neo-extractivist development style (Svampa, 2020). This development style contemplates capital-intensive activities (Svampa, 2013), usually operated by large transnational corporations whose functioning and

operation connect economic, socio-environmental, and political-institutional dimensions.

In Brazil, the mineral extractive industry recently represented 17% of annual exports (Instituto Brasileiro de Mineração [IBRAM], n.d.-a), a significant figure in the economic and fiscal sphere. In 2022, the mining activity accounted for a revenue of 250 billion reais, leading to the collection of 86.2 billion reais in total taxes. Of this total, 7.08 billion reais were collected with the Financial Compensation for Mineral Exports (CFEM). These amounts originated from the estimated production of 1.05 billion tons. The mineral trade balance, of almost US\$ 24.9 billion, accounted for 40% of the Brazilian trade balance, equivalent to US\$ 61.8 billion in 2022. In 2021, however, this balance was even higher, having accounted for 80% of the Brazilian trade balance (IBRAM, n.d.-b). In this context, iron ore stands out: in 2021, iron accounted for 74% of revenues, followed by gold (8%) and copper (5%) (IBRAM, n.d.-b). Brazil stands out in the world production of such input, along with Australia and China in the lead (United States Geological Survey [USGS], 2020).

The way the industry operates has a territorial basis in the so-called mining company towns, areas where the companies are installed, so called because of the asymmetries and patterns of dependence that expose populations and territories to socioeconomic and environmental risks and vulnerabilities (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2015). This exposure is connected to the socio-spatial, political, and economic conditions that allow or interdict the anticipation of resistance to and recovery from a disaster (Tierney, 2020). For humans, these conditions vary according to the intersection of aspects such as class, age, race/ethnicity, and gender (Cigler, 2007). For other living beings, they depend on factors such as the mobility conditions of each species, the exploitation relations they suffer from human beings (Kelman, 2020) and the very dynamics of relations between humans and non-humans.

In short, the mining industry's operating logic is based on dynamics of increasing risks and vulnerabilities to communities and ecosystems, especially in view of insufficient data and regulation and control practices (Bowker, 2015; Bowker & Chambers, 2017; Rico et al., 2008). In Latin America, even after the end of the so-called boom of mineral commodities at the beginning of the 21st century, the region remains sensitive to the socioeconomic and environmental effects of extractive projects (Santos & Milanez, 2017). At the local level, mining practices are associated with perverse logics that make invisible the companies' dependence on mineral assets and local resources to operate and focus on the importance of

mining companies to promote the economic development of areas where they are installed (Fontoura et al., 2019). That is because this industry is usually commercially introduced in remote localities, with low infrastructure, in order to establish a chain of financial dependence around the operations to promote economic development — albeit often precarious — in the place (Santos & Milanez, 2017). Thus, instead of a discussion on the normative model adopted, the risks involved in the productive activity, and the responsibilities of corporations, the rights of populations and of nature itself are made increasingly more flexible, which has culminated in the perpetuation of socio-environmental injustices (Zhourri et al., 2016).

The socio-environmental damages mentioned here are the result of complex dynamics that lead to disasters, such as the 2015 collapse of the Fundão dam, owned by Samarco Mineração S.A/Vale S.A/BHP Billiton do Brasil Ltda., in the municipality of Mariana, state of Minas Gerais, Brazil. This was the largest case of disaster involving the failure of a dam in the world when considering measures independent of the scale of damages and risks (Bowker, 2015): it totaled 680 km of directly impacted water bodies in the states of Minas Gerais (MG) and Espírito Santo (ES) (Advocacia Geral da União [AGU], 2016) and caused serious material and immaterial damage to the respective coastal area, setting a precedent never seen in the history of Brazil and of the world (Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis [Ibama], 2015). Once again, the chain of local dependence on mining is evident when analyzing, for example, that the taxes generated directly by Samarco's mining activity corresponded to 54% of the revenue of the municipality of Mariana (Samarco, 2016).

As we have seen so far, socio-spatial conditions, such as the availability of mineral inputs, geographical location, the form of organization of space occupation, populational and socioeconomic characteristics of the territory, access to essential services within a given locality, among others (Kelman, 2020; Tierney, 2020), are fundamental in these asymmetric relationships produced in and by mining practices. Therefore, we seek dialogue with the production of organizational studies on spaces and spatialities not merely based on reified geographical areas, but also understanding them as acts, as practices in constant production — spacing (Beyes & Steyaert, 2011a; 2011b). Thus, we understand, in a political conception of the spatial (Vasquez, 2013), that space is, at the same time, the product and process of these practices (Ipiranga, 2016), which are produced in the organizational routine (Carrieri et al. 2018). However, we seek to contribute to this perspective, highlighting the limitations of the focus on human spacing that has been found in the literature, in Brazil and abroad. With that, we want to consider not

only mining activity, but other corporate activities from a spatialized, procedural, performative, non-scalable and, above all, more-than-human perspective, since these are practices that intertwine not only human actors, but also those that compose environments (rivers, mountains, rocks, etc.) and different species of plants, animals, fungi and other forms of existence. To this end, we sought theorizations in the field of multispecies studies.

Multispecies studies gather recent works in order to understand, at the intersections between scientific disciplines, different forms of life intertwined in relations of knowing and living together (Kirksey & Helmreich, 2010). This field is focused on ethical, political, and epistemological issues in the relationships between agents intertwined in continuous flows of agencies of multiple and different species (Van Dooren et al., 2016). This unfolds into an emphasis on the agency of organisms whose lives are intertwined with human lives, bringing to the forefront that which usually remains in the background, that is, our symbolic and material relations with other beings, in interfaces, networks, and encounters between species (Wilkie, 2015). In connection with the applied social sciences, multispecies perspectives have contributed to rethinking concepts such as sustainability (Rupprecht et al., 2020), tourism (Danby et al., 2019; Dashper, 2019; 2020), justice (Celermajer et al., 2020; Chao et al., 2022; Tschakert et al., 2021), and methods such as ethnography (Gillespie, 2021; Kirksey & Helmreich, 2010; Ogden et al., 2013; Smart, 2014; Wels, 2020). Thus, the connections of this field with administration can produce valuable and original contributions in ontological, epistemological, and methodological terms, in order to rethink the bases of their academic background (Fantinel, 2021), to reflect on organized relationships with other forms of life (Fantinel, 2020), or even to propose more ethically engaged and intellectually nuanced organizational practices and processes (Coulter, 2022).

In this essay, we employ this approach between the fields of organizational studies on spaces and spatiality and multispecies studies in order to problematize the destructive organizational practices that produce and reproduce ruined spaces, such as (but not only) the mining practice. We adopted, consistently with Tsing (2005; 2019), the idea of ruins: areas with socio-environmental degradation, which result in disturbance of communities and ecosystems that have been impacted by global social and economic forces. We understand, as the author, that this is the case of spaces produced by mining practices, intertwined spatial practices operated by different actors in global production chains, which involve large corporations and governments, but also local communities of humans and several other species.

Discussing these complex overlaps, mediated by organizational processes and forms of corporate, public, and civil society management, involves what we understand as organizing multispecies, more-than-human organizational processes in continuous production and reproduction that spatialize, that is, produce and are produced by spaces (Fantinel, 2020). We seek, therefore, the commitment to place other species at the forefront of organizational analysis, not as resources to be exploited or agents that will, together with local human communities, absorb externalities, but as agents of these spatial production practices.

Thus, we theorize about the contributions of multispecies approaches to administration, aiming to respond to the call for answers to the contemporary challenges of doing and thinking management (Bispo, 2021; Bispo, 2022). This means rethinking the very dynamics of social and organizational relations as exclusively human and considering not only the mining activity, but other corporate activities, from a spatialized, procedural, performative, non-scalable and, above all, more-than-human perspective.

We believe that there are three aspects of contribution of this theorization: ontological, methodological, and political. Ontologically, it contributes to the field by supporting a relational conception of the organizational phenomenon and by making visible the agency of the so-called 'natural resources,' an expression constantly employed in administrative theory and practice to homogeneously designate a multiplicity of forms of life with interests that neither meet nor are subjugated to human interests. Methodologically, it contributes by proposing ways of approaching the field that are not centered on the human, such as multispecies ethnography and ethology as an instance of production of new forms of knowledge also in administration. Finally, politically, we understand that, by making asymmetric power relations visible, it contributes by intersecting another dimension in the webs of oppression and vulnerability in the analysis of spatialization practices and ways of organizing.

To this end, the essay discusses at a theoretical level the bases used for the reflections produced here. Then, we present the contributions that we propose with this dialogue in a situated manner, that is, based on the practices of the mining industry in Brazil, with the objective of producing reflections not in an abstract way by the connection between theoretical elements, but in the discussion of phenomena such as they happen (Schatzki, 2006). Finally, the final considerations of the essay are presented, aiming to contribute to an emerging agenda toward 'deanthropocentering' knowledge and practices

produced in administration, with the proposition of organizing in a web with other forms of existence.

## MULTISPECIES SPACING: THE MULTISPECIES ORGANIZATION OF SPACE

Organizational space theory, although not homogeneous, is established as consolidated in the field of administration. The literature summarizes three main perspectives of space, namely: (1) as spatial distance, which can be objectively measured and represented; (2) as materializations of certain power relations that guarantee the circulation and reproduction of capital, focusing on the reasons why spaces are configured as they are; and (3) as products of manifestations of experiences, focusing on symbolic aspects, such as identity and culture (Taylor & Spicer, 2007). One of the most recent movements in the literature has been to reposition the understanding of symbolic and representational approaches (focusing on the meanings attributed to space) to approaches that consider the performativity of spaces (focusing on concrete and continuous relationships between actors) (Beyes & Steyaert, 2011b). This implies understanding organizing in a way that is situated in experiences and relationships (Beyes e Steyaert, 2011a), as a process and product (Dale, 2005; Dale & Burrell, 2008), based on the interactions that produce, reconfigure, and occur in the organizational space (Best & Hindmarsh, 2019; Munro & Jordan, 2013).

In Brazilian organizational studies, the movement of the field is similar. Studies in the field approached spacing through the problematization of the urban phenomenon, small businesses that move the city or concepts such as organization-city (Carrieri et al., 2008; Carrieri et al. 2018; Carrieri et al., 2014; Costa et al. 2022; Fantinel & Cavedon, 2010b; 2010a; Fantinel & Fischer, 2012; Fischer, 1997; Gomes et al., 2021; Ipiranga, 2010; Mac-Allister, 2004; Saraiva et al., 2014; Saraiva & Carrieri, 2012). Recently, the practical turn has been mobilized as a framework for the analysis of organizational spaces and the organization of spaces (Bezerra et al., 2019; Carrieri et al. 2018; Domingues et al., 2019; Fernandes et al., 2021; Ipiranga, 2016; Ipiranga & Lopes, 2017; Pinheiro et al., 2023), with special attention to the socio-material and embodied dimension of the practice (Fantinel & Davel, 2020; Gomes & Fantinel, 2022), which in a more critical view show asymmetries and economic, social, ethnic-racial, and gender inequalities in this production of space (Borsatto & Fantinel, 2024; Bretas & Saraiva, 2013; Figueiredo & Cavedon, 2020; Gomes & Fantinel, 2022; Nascimento et al., 2015; 2016; Rezende et al., 2024; Teixeira et al., 2015).

The influence of practice-based studies leads to procedural approaches (Reckwitz, 2002), closer to the daily routine of the actors (Carrieri et al., 2014), based on situated studies developed through observational methods (Oliveira & Figueiredo, 2021) that excel in the researcher's experience with their interlocutors (O'Doherty & Neyland, 2019). This orientation leads to a critique of conceptions that take spaces as data and understand them in dynamics of space practices, with spatiality as practiced in the relations produced daily (Bezerra et al., 2019). The study of spacing motivates the analysis of collective action in which, in a continuous, dynamic, and fluid manner, practicers are constituted by socially sustained modes of practicing (Beyes & Steyaert, 2011a; Feldman & Orlikowski, 2011; Gherardi, 2009).

We assume this heritage and influence as we are interested in addressing encounters made possible in the here-and-now by multiple materialities, to procedural, vivid spatiotemporal arrangements, open to experimentation and to the transformative potentials of this spacing. However, we are also interested in recognizing a limitation present in this research tradition and, mainly, in problematizing this limitation, as proposed by Sandberg and Alvesson (2011): the critical reassessment of a given theoretical tradition, a vocabulary and the construction of an empirical terrain. We are interested in fostering, as the authors argue, the development of new questions that effectively break conventional logic.

We understand that an important course toward problematizing this theoretical tradition that we evoke is to question the invisibility of non-human practicers in the organization of spaces, especially the practicers who compose what we conventionally understand as nature, such as animals, plants, trees, fungi, water/dike, etc. Such questioning can help us bring to light the anthropocentrism of our organizational theory and practice and the persistence of dichotomies that sustained the rise of Western scientific thought, such as nature and culture, or natural and artificial, or subject and object. By challenging an alleged ontological separation between organization and nature, or between subjects and objects of spatial organization, we intend to disorder these bases that seem so fixed that they are almost not questioned, or that, when they are, cause estrangement, since we do not usually think of grass, bushes, fish, viruses, horses, or mushrooms as agents of organization.

When we dedicate ourselves to critically studying mining practices in the Global South and its disasters, we have much to benefit from a multispecies perspective. By means of a 'multispecies turn,' we can question the asymmetric power logics produced in the context presented in the introduction of this essay. The context of

mining presents similar logics not only in Brazil, which mark multi-species landscapes in spaces that we can call ruins of capitalism, that is, ruins produced by the way diverse industries — including mining, plantations — operate in capitalism globally and locally (Tsing, 2019). According to Tsing (2005; 2015a; 2015b; 2019; 2021), an important exponent of this movement, landscapes are formed through the frictions that occur — in and between — spaces that include intertwined social, human and non-human worlds, alive or not, in constant joint practice.

A multispecies approach enables us to problematize intertwined social, human and non-human worlds, alive or not. This analysis makes it possible to focus on the frictions between local dynamics (multispecies communities affected and prevented from living their lives by the disturbing actions of mining) and global dynamics (neo-extractivism and geopolitics of mineral exploration and export). We argue here that frictions lead not only to concrete ruins, visible when observing a post-disaster area, for example, but to a set of relationships that are ruined over time through interactions between human and non-human actors in waves of destruction that are apparently perpetuated by the arrival of mud in local communities in the event of a criminal disaster (Leite & Zambeli, 2023; Leite, et al., 2024).

With this, we can also question the scalability of the spaces produced by mining practices. The continuous treatment given as scalable (that is, with regard to economies of scale, as they say in the business world) is something foundational in this 'supply chain capitalism' (Tsing, 2019), which ranges from the software industry to mining. The logic of converting everything into inventory, and always commoditizing, seeks to make relationships scalable. However, when we use the framework of multispecies studies to understand this phenomenon, we start to understand the limitations of scalable logic, as space production here involves non-scalable environmental relationships. To say that this industry is not scalable means to understand that as production expands, so do its effects. Forcing the scalability of mining practices leads to an expansion of disastrous socio-environmental impacts, with unequal distribution of externalities and production of continuous ruined spaces.

It is from the perspective of friction and landscape, as a set of assemblages continuously constituted between distant and current times, that this essay re-addresses some points in this agenda and warns of the need to transform organizational practices no longer with the objective of making incremental adjustments with a view to sustainability, or of recovering degraded areas or ecosystems, since the Anthropocene teaches that this is no longer possible. This point of return has already been lost.

What is fundamental now is to make it possible to live (survive) in these ruined spaces and through relationships that have kept ruining.

Accordingly, we propose that it will be necessary to (re)organize spaces — a multispecies reorganization, which implies reconstructing conceptions and ways of ‘making the world’ hitherto centered only on human elements to the detriment of other possible worlds, which include multispecies landscapes that coexist, inhabiting diverse disturbances (Tsing, 2019). This requires forgoing a conception (although never fully realized) of the production of a single world constituted of a ‘civilized’ society, whose maximum expression emerged with the so-called capitalist globalization that led to the destruction of peripheral social groups, in which non-dualistic and multispecies conceptions of the world prevail (Escobar, 2015; Tsing, 2005). This also requires conceiving a multispecies systemic character to the very changes of the sustainable organization. We understand that it is necessary to situate disasters not only in a context of climate change, but of necessary systemic changes. The fierce disproportionate exploitation of what is conventionally called natural resources through the work of so-called human resources maintains, in the current economic system, unsustainable a life without ruins at least at the local level.

Advancing toward understanding organizational phenomena, such as spacing, as more-than-human, requires, therefore, a ‘deanthropocentered’ perspective on organizational practices and processes: humans are only one type among multiple agents and communities of interest, and purely human communities do not exist, since these communities have deep overlaps with so many other species in diverse ecosystems and environments. The human body itself is a system, an organism, as it contains bacteria and other formations. It is not possible to assess the impact of a mining criminal disaster without considering the countless non-humans whose existence is intertwined with these humans and these spaces, whether the trees that inhabited a centennial local square in the municipality of Mariana, the fish that lived in the rivers, the domestic animals that cohabited the residences, or the grass that today covers the affected areas and makes it difficult to see the marks of the destruction caused by the criminal disaster. For this understanding, it is necessary to attribute to what is conventionally called nature a character that, instead of being singular or external to the human, is integrated into plural, systemic, and polyphonic projects of space production, which cannot be only human (Aisher & Damodaran, 2016).

It is important here to analyze the organizational practices that continuously emerge to maintain habitability in the ruined landscapes. This makes it possible to

understand how human and non-human actors organize their practices (spacing) in multispecies landscapes. Thus, life is expressed and formed through connections, shared experiences and routines, social habits, matches, mismatches, movements, affections, practical skills, and all forms of interactions produced daily. The expressions and impacts of this movement in research in the field of administration are problematized in the following topic, taking the mining industry as a context for discussion.

## CONTRIBUTIONS TO THE FIELD OF ADMINISTRATION: POLITICAL, ONTOLOGICAL, AND METHODOLOGICAL DIMENSIONS

Considering the reflections produced so far, we built our central argument based on the concrete case of mining industry practices. These are, as we have seen, practices that impose on the peripheries of capitalism the absorption of externalities by local communities and ecosystems, producing and (de)organizing ruined spaces, perpetuating destruction.

The notion of ruin, which we learned from Tsing (2019), helps us understand space through fragments that constitute a landscape that, before the disturbances, had been seen in a scalable way, leaving debris. The disturbed landscapes then become spaces for us to learn about not only the stories that humans have made, but also the stories of non-human participants. Tsing (2015a) exemplifies that defenders of the restoration of the Satoyama forest, in Japan, teach the understanding of ‘disturbance’ as coordination and history. That is because they show how the disturbance itself allows for stories to start in the forest. In spaces that are not disturbed, the pine tree will hardly establish a relationship of mutualism with the matsutake. Thus, disturbance leads to ‘transformative encounters,’ such as that of the association between pine and mushroom. Disturbance can be seen as something positive or negative, depending on the encounter it enables. When the term is “... used by ecologists, it is not always bad — and not always human, ... [disturbances] also stimulate ecological relationships” (Tsing, 2015a, p. 160, our translation).

With mining activities unfeasible, disturbances abandoned, once again the more-than-human occupation begins spacing these ruins. In Tsing’s work, multispecies landscapes include new coordination that are made possible precisely because scalability has spread and paved the way for a set of occupations that depend on ruins, such as matsutake mushrooms. With mushrooms in the landscape, humans also start to (re)occupy, be they farmers, mushroom pickers, etc. The landscape is gradually modified in spaces where there was disturbance. Landscapes are constituted by

‘overlapping world-making projects,’ that is, a diversity of cohabiting species.

Tsing (2019) argues for the ruins to be occupied if we want to ‘live together’ in spaces that are unlikely, or even prohibited for the resumption of human occupation, as are the ruins of mining in Brazil. In this sense, occupying is recovering and, if we want to live, we need to learn to occupy even the most ruined and disturbed spaces where life can exist on Earth. To learn to reoccupy we need to conceive of relationships as multispecies and understand the logics of interaction and movement in the formation of these spaces — for example, the intentional and non-intentional dynamics of human expulsion from certain peripheral groups and of attraction of certain species (for example, snakes, which — pejoratively called venomous as if they were all venomous — often symbolize evil and cause fear in humans). As the author mentioned here would say: “We have no other options but to look for life in this ruin” (Tsing, 2019, p. 7, our translation). One of the ways to do this, according to her, is to focus attention on the sociality of the living things that make up multispecies landscapes. The author emphasizes mushroom picking. In these landscapes, human beings play one of the roles, constituting part of a biodiverse whole.

As we have seen throughout this essay, practices that disturb local ecologies are neither apolitical nor ahistorical, nor are they intertwined with exclusively human practices. They have silenced not only peripheral human voices, but also non-human voices, disregarding more-than-human relations that shape a spacing that not only serves specific interests, but also aims to maintain the coercive harmonies mentioned at the beginning of the text. Thus, in general, we understand that multispecies approaches allow for advancing the field as they enable making visible complex relationships that overlap in these destructive practices. We argue that this leads to understanding spacing in continuous (trans) formation in relations between humans and other modes of existence, considering human and non-human agencies and focusing on terrestrial living beings, instead of being informed by the focus on human agents, their interests, and their structures.

With this view, we suggest a rupture not only with dominant discourses in the business area that validate practices that produce asymmetric spaces, but also a rupture with the very notion of human organization as the true and legitimate organization. We believe that we contribute to the production of knowledge that values both new knowledge for the field of administration, based on a theoretical diversity, and spheres of non-scientific and non-human production that have strengthened asymmetries, especially in the Brazilian context in the mining sector, which has perpetuated disasters.

In this context, it is particularly significant for the scientific field of administration to reflect on the role that organizations — especially in the corporate form — have in the state of affairs marked by major environmental catastrophes mediated by organized human action on the planet (Figueiredo et al., 2020). As climate factors and more-than-human relations are permeated by catastrophes, it makes sense to strengthen a research agenda that contributes to the understanding and production of systemic ways of organizing (Delbridge et al., 2024).

The approach with multispecies perspectives in the EOR, especially, proves original and has recently been discussed internationally in events in the area<sup>2</sup>. As Brazilian researchers, we present an innovative articulation between ‘families’ of theories that, although with different degrees of theoretical maturity, dialogue in a manner applied to local contexts, albeit fed by a transnational logic. We argue that both theories (consolidated and emerging in the field of administration) are consistent when we propose a production of plural knowledge that connects and updates the process of theoretical construction in relation to the multifaceted concrete worlds of which they are part and which they seek to interpret.

In this learning, we understand that these spacing dynamics (which are not limited to mining, but also encompass so many corporate activities that lead the planet to the Anthropocene), in the field of administration, can be better understood from a multispecies perspective, in line with that which is defended by Tsing and other authors of the so-called ‘multispecies turn.’ Here, we defend the contributions of this perspective to administration in three main aspects: the first, of an ontological order; the second, of a methodological order; and the third, of a political order.

The ontological contribution discussed here is through relationality. The relational dimension could establish more integrative views by considering elements beyond humans in the analysis. In relational ontologies, territories are vital spaces-times that allow for a series of interrelationships with the natural world that surrounds them and that constitutes part of it (Escobar, 2015). Relational ontology and multispecies landscapes align — and justify the analysis intended here — considering that practice theories assume an ‘ecological model’ in which agency is not focused on humans, but is distributed between non-humans and humans (Gherardi, 2009). That is because these landscapes are produced concomitantly through multispecies relationships that, in addition to intertwining, change over the course of organizational practices over time (spacing). It is necessary to pay attention to where scalability fails, giving rise to non-scalable relationships, observing non-scalability. It is essential to conceive a non-scalable theory, shedding light on what scalability has left behind

and on relational aspects, based on the disturbances caused by humans seeking to dominate ‘other living things’ (Tsing, 2015a).

Considering a relational ontological perception, the methodological contribution is provided by the mobilization of research approaches that recognize the agency and the logics of the more-than-human world and of the multispecies studies, seeking to interpret the emergence of life according to the dynamics produced between a set of beings endowed with agency, be they organisms or entities (Ogden et al., 2013). Here, mud, dikes, and vegetation can come to life in polyphonic encounters, based on the differences between the elements that compose asymmetric landscapes, which Tsing (2019) calls fragments.

Subsequently, based on plural experiences and in a situated manner, the political contribution is provided by shedding light on the asymmetric logics of the industry for better understanding organizational phenomena and the distinct ‘ways of being,’ doing politics and organizing in relation to the empirical context analyzed. In the discussion of organizational spaces, this involves introducing affections into the dialogue, for understanding spaces as political practices, and for translating the organic, systemic, polyphonic, and procedural character of the practices that form spaces considering the notion of spacing and, also, the uncertainties that permeate the spatial arrangements of which we, humans, may (or may not) be part.

Given that such landscapes are in ruins, it would perhaps remain the question of how to seek life considering states of precariousness at global and local levels. Considering the mining industry from this perspective, for example, makes it possible to emphasize the importance of reflecting on the set of articulations that have configured mining, on the one hand, locally (its antecedents and consequences), and on the other, situated within a scalable logic and a global dynamics.

A theory of non-scalability in mining, instead of having a scalable science — that is, replicable at any scale without changing its results —, focuses on that which scalability has left behind in the form of mud/destruction, of visible ruins or ruined more-than-human relationships. At each emergence of a small coordination (a moment of friction, in other words), this coordination produces landscapes. According to the author, the landscapes result from ‘moments of friction’ (Tsing, 2019). These moments give the set (assemblages) a trajectory, at least momentarily, since it is a composition of stories of becoming. Thus, we understand that, by shedding light on these more-than-human relations in the production of spaces, we show how they are part of — and modify — the very relations of tension (or harmonization of tensions).

We sought to bring to light this relational link so the conflictual logic is not concealed by certain human interests that determine what may or may not remain in a post-disaster spacing, a result of practices that over decades have centralized certain interest groups in the production of ruins. We highlight the tensional character of these relations, since broader debates on transitions to a possible (and effective) sustainability often neglect the characteristics of organizations as social systems in tension (Delbridge et al., 2024). In addition, it is essential to discuss the practices of a highly conflictual and contested economic sector, such as the mineral extractive industry. We point out that this industry is not the only one to propagate destruction, scalability and its effects to humans and non-humans in local communities, but we suggest a close look into it as a starting point.

## FINAL CONSIDERATIONS

What role do animals, plants, and other living beings have in organizing the space of mining practices? How can trees, birds, grass, horses, fish, shrubs, and insects, among many others in relation, be agents that organize and disorganize spaces, that actively spatialize the area affected by a criminal disaster like the one that occurred in Mariana? Answering these questions requires us to question anthropocentric devices rooted in our organizational knowledge and actions. Challenging a supposed ontological separation between organization and nature, or between subjects and objects of spatial organization, ends up dismantling these bases that, because they seem unshakable, are seldom questioned.

How can we, through the adaptation of our data production and analysis techniques, or through the adoption of new techniques (Leite & Carolino, 2024), embrace the more-than-human tone of organizational practices? How can the natural sciences, Earth system sciences, and life sciences help us on this course? What tools do we need to think about and produce organizational practices that are effectively more socially and environmentally responsible and responsive, based on their overlaps in ecosystems? The disturbances to ecologies can be small, such as a tree falling in the forest and creating a light gap, or huge, such as a tsunami that destroys a nuclear power plant or a dam that collapses. What methods do we need to handle them? In the case of disturbances in the mining industry, different species distance themselves or cohabit debris and ruins that are not always easily visible. Many animals, trees, plants, humans can no longer, by themselves, narrate harmful relationships. How to make the mourning, the wreckage, and all the ruin produced not be forgotten in our research? What techniques do we need to use, whether those we already have or those we have conceived originally?



How to assist in the process of politicization of spaces such as dikes and dams, whose production has occurred by justifications that appear to be only technical? How to take a position on practices that legitimize decisions in asymmetric power games centered on the interest of certain human groups? Scalability, reduced to technical problems and rationalized decisions, needs to be challenged, precisely because of different interests, to build mobilizations that somehow consider the more-than-human relations and the differences produced in these relations and their unevenly distributed consequences. Non-scalable thinking enables us to indicate and question camouflages, mischaracterizations and their effects — on and through — social relations. If each pest that infests excludes others, who becomes a pest, why and through what relations and practices? What are the weeds in mining?

This essay has addressed complex socio-environmental issues. In this context, there is the intertwining of different modes of spacing, particular and full of experiences, produced by human and non-human agencies that, together, move social aspects of organized, disorganized, and frictional relations. We have written informed by the importance of continuously understanding and (re) thinking reality, and not by the pursuit of true answers and affirmations (Meneghetti, 2011). We have focused on the contributions of a multispecies approach to the field of administration, taking as a situated context the need to question the organizational practices of the mining industry.

We chose to present the contributions we mapped in three aspects (ontological, methodological, and political), as discussed in the previous topic. We increased the number of questions at the end of this essay for two reasons. The first is to emphasize to those interested in the subject — whether researchers, activists or diverse producers of knowledge willing to question the hegemonic human theorizations and practices — that in the field of administration we have currently found more questions than answers. We propose a discussion on multispecies nuances. The second reason is related to the first: we need to materialize the types of questions that are at stake in the operationalization of research with the use of these approaches. We understand that, with them, we can create alternative forms of research to respond to the increasingly urgent demand to address the fierce effects of human-centered management (which cannot even contribute to the set of human beings on the planet).

We pay attention to the visibility of more-than-human relations that are usually invisible to the eyes of many theorists and practitioners: the local communities that inhabit spaces and ecosystems produced in this multispecies organization. We understand that visibility is an important step toward eliminating destruction practices and modifying the very relations of tension (or harmonization of tensions).

Contemporary aspects of governance, of the so-called sustainability, and of the construction of less harmful relationships involve the decentering of humans. We sought to bring to light this relational link so the conflictual logic is not concealed by certain human interests that determine what may or may not remain in a post-disaster spacing, a result of practices that over decades have centralized certain interest groups in the production of ruins. It is by considering this diversity that we can reposition issues related to equity, social justice, and the production of new knowledge that enable society as a whole to face dilemmas that are presented in contemporary times (Bispo, 2022).

Thus, we have sought to embrace the need to conceive theory and practice as interdependent and symbiotic. The consideration of social aspects as more-than-human and of practice as continuously carried out by multiplicities of situated ways of life leads to the important contribution we propose for a multispecies thinking and theorizing as new constructions for administration. We hope, with this effort, to open another path of dialogue between administration and other fields of knowledge.

We recognize that it is a challenge to focus on non-human elements (proposing a decentering of humans) based on human thought itself and also on an anthropocentric perspective in which certain interest groups are differently positioned in fields of action, in local and global articulations, which determine decisions according to economic transactions. In mining, there are factors that enable scalability (such as conflicts arising from the asymmetry and insufficiency of regulation and control, the difficulty of enforcing standards, etc.). However, we argue that it is by rethinking practices as political constructions, rather than a mere weighing of costs and benefits, that we can make vivid all that mud represents so the destruction is not erased over time.

## NOTES

1. According to the severity level, in descending order, 'very serious' failures in the tailings dam are those that cause multiple loss of lives (~20) and/or release of total discharge  $\geq 1\,000\,000\text{ m}^3$ , and/or run-out of 20 km or more; 'serious' failures are those that cause loss of lives and/or release of semi-solid discharge  $\geq 100\,000\text{ m}^3$ . 'Other tailings dam failures' are classified as engineering/facility failures other than those understood as very serious or serious, with no loss of lives; 'other tailings-related accidents' are accidents that are not classified in the first three categories of dam failures (Unep, 2017).
2. Like the 40th EGOS Colloquium of the European Group for Organizational Studies, to be held in 2024 in Italy.

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