



The necrocapitalism and environment of the niobium mining industry

O necrocapitalismo da indústria mineradora de nióbio

El necrocapitalismo de la industria minera del niobio

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KEY WORDS

Necrocapitalismo.
Crime ambiental. Pós-colonialismo.

Abstract: A pesquisa tem como objetivo discutir como opera o necrocapitalismo no contexto de exploração do nióbio na cidade de Catalão, Goiás. Articulou-se o conceito de necrocapitalismo, que se refere às práticas contemporâneas de acumulação envolvendo a expropriação e subjugação da vida ao poder da morte, para analisar a exploração do nióbio no município de Catalão/GO, sede da segunda maior empresa produtora de nióbio do Brasil, a China Molybdenum (CMOC). Foi realizada uma pesquisa qualitativa por meio de entrevistas e pesquisa documental, que foram posteriormente analisadas por meio de análise temática. A análise temática resultou em três categorias que descrevem as práticas de acumulação necrocapitalista da indústria do nióbio, o contexto da exploração e os efeitos da exploração sobre as populações que vivem ao redor da mina de extração. Os resultados apontam para a expropriação das comunidades, a destruição dos meios de subsistência e a resistência das populações tradicionais.

KEYWORDS

Necrocapitalism.
Environmental Crime.
Post-colonialism.

Abstract: This research aims to discuss how necrocapitalism operates in the context of niobium exploitation in the city of Catalão, Goiás. The concept of necrocapitalism, which refers to contemporary practices of accumulation involving the expropriation and subjugation of life to the power of death, was articulated to analyze the exploitation of niobium in the municipality of Catalão/GO, home to the second largest niobium producing company in Brazil, China Molybdenum (CMOC). Qualitative research was carried out using interviews and documentary research, which were then analyzed using thematic analysis. The thematic analysis resulted in three categories describing the necrocapitalist accumulation practices of the niobium industry, the context of exploitation and the effects of exploitation on the populations living around the extraction mine. The results point to the expropriation of communities, the destruction of livelihoods and the resistance of traditional populations.

KEY WORDS

Necrocapitalismo. Delito
Ambiental.
Poscolonialismo.

Resumen: La investigación tiene como objetivo discutir cómo opera el necrocapitalismo en el contexto de la exploración de niobio en la ciudad de Catalão, Goiás. Articulado el concepto de necrocapitalismo, que se refiere a las prácticas contemporáneas de acumulación que implican la expropiación y subyugación de la vida al poder de la muerte, para analizar la explotación del niobio en el municipio de Catalão/GO, sede de la segunda mayor empresa productora de niobio de Brasil, China Molybdenum (CMOC). Se llevó a cabo una investigación cualitativa a través de entrevistas e investigación documental, que posteriormente fueron analizadas mediante análisis temático. El análisis temático dio como resultado tres categorías que describen las prácticas de acumulación necrocapitalista de la industria del niobio, el contexto de la explotación y los efectos de la explotación en las poblaciones que viven alrededor de la mina de extracción. Los resultados señalan la expropiación de las comunidades, la destrucción de los medios de subsistencia y la resistencia de las poblaciones tradicionales.

Introduction

This article examines the concept of necrocapitalism and the accumulation practices of the mining sector in Brazil. It posits that, in the context of contemporary nation-states, violence against peoples is made possible by the creation of a state of exception in which sovereignty—defined as the power to decide on the application of the law—is relativized. Such spaces are concerned with the achievement of accumulation practices that involve a range of detrimental actions, including dispossession, death, torture, suicide, slavery, and the destruction of livelihoods. These actions are carried out through a collusion between state and corporation actors within a political economy of resource extraction based on colonial forms of development (Srikantia, 2016). This phenomenon has been termed "necrocapitalism" by Banerjee (2008).

Brazil is one of the world's largest mineral exporters. Although it does not represent a significant portion of the national GDP, mineral exploration is an important source of foreign currency for the country and for maintaining a development model based on the import of manufactured goods and the export of commodities (Leão and Rabelo, 2023). With regard to niobium, the country is in possession of 98.2% of the global reserves and is responsible for supplying 93% of the world's supply. In 2018, exports of niobium yielded a revenue of just over 2 billion dollars for the country, representing 0.8% of the total value of national exports (IBRAM, 2019). The extraction and processing of niobium in Brazil is concentrated in two large corporations: Companhia Brasileira de Metalurgia e Mineração (CBMM, Portuguese acronym to Metallurgy and Mining Brazilian Company) and Niobrás, a former Anglo-American subsidiary sold to China Molybdenum (CMOC) in 2016 for 1.7 billion dollars (CMOC, 2016).

Brazil's export product for niobium is the ferroniobium alloy, which is used to manufacture high-strength metal alloys used in the automotive, maritime, civil construction and aerospace industries (Alves & Coutinho, 2015). Approximately 65 tons of ore are needed to

produce one ton of ferroniobium, an important iron-niobium alloy (CBMM, 2017). The main importers of Brazilian niobium are China, North America and the European Union (CBMM, 2019).

It must be acknowledged, however, that these results come at a significant social and environmental cost. The mining industry is widely acknowledged as one of the primary sources of conflict, displacement, and loss of life among traditional communities (Banerjee, 2011). It is also a prominent example of human rights violations (Böhm, 2020), including - as evidenced by the displacement of families and communities - social and cultural fragmentation, land conflicts, the proliferation of diseases, deaths and accidents at work, water scarcity, water pollution and contamination, soil contamination and environmental disasters (Monitoring Human Rights in Brazil Articulation [AMDH], 2017), the mining industry has a significant negative impact on communities.

This empirical context is theoretically articulated with the notions of necropolitics and necrocapitalism, developed by Mbembe (2003) and Banerjee (2008), respectively. The defining feature of necrocapitalism is the accumulation of wealth through the expropriation of resources and the creation of "spaces" of death. It represents a new form of imperialism, wherein the traditional justifications for colonialism are repackaged under the banner of progress and development (Banerjee, 2008).

The idea of development is used to justify the dispossession and displacement of traditional communities, the appropriation of their natural resources, the transformation of their ecosystems and the deterioration of their livelihoods (Srikantia, 2016), which can be characterized as environmental corporate crimes (White, 2008).

This research project is concerned with the exploitation of niobium in Catalão, Goiás, and the adverse effects this has had on the residents of the surrounding communities. The expropriation of land and the subsequent degradation of livelihoods, particularly in relation to the reduction of water resources, have been significant challenges for these communities. Niobrás' operations are situated in a rural area near the Macaúbas, Coqueiros, and Mata Preta

communities, within the municipality of Catalão. Since the year 2000, there has been a notable intensification of niobium mining activities within the region, with the resulting territorial consequences becoming a significant concern for local residents.

In this empirical and theoretical context, the question guiding this research was formulated as follows: How do the notions of necrocapitalism allow us to analyze the context of niobium exploitation in Brazil? The objective of this study is to gain insight into the ways in which necrocapitalism manifests in the context of niobium exploitation in the city of Catalão, GO. To this end, a qualitative study was conducted through a thematic analysis of empirical material comprising documents and interviews.

The central themes of this article are derived from discussions in other areas of knowledge. By fostering this discussion in organizational studies, we seek to contribute to the field in two ways: (1) By conducting research aimed at understanding a phenomenon (Sandberg & Alvesson, 2021), the theoretical notion of necrocapitalism is reviewed and space is opened for discussion on resistance and subversion against necropower. Considering the emergence of resistance movements observed in the case under examination, two key objectives emerge. The first is to challenge critical and reflective studies to consider necrocapitalist practices in the context of mining and the potential for compliance with the 2030 Agenda. The second is to examine the role of resistance movements in challenging the necrocapitalist system.

At the national level, research into corporate crime has mainly focused on studying the discursive disputes surrounding episodes of corporate crime or the inconsistencies present in the discourse of corporate social responsibility and sustainability (Medeiros, Silveira & Oliveira, 2018; Souza, Valadão & Medeiros, 2017). Two other groups of less numerous publications focus on discussions about corporate criminal responsibility and the relationship between companies and the state (Estellita, 2023; Paganini & Medeiros, 2023).

There is also a fourth group of publications which includes fundamentally theoretical and epistemological discussions about the concepts

and approaches used in the field of organizational studies to analyze the issue of socially harmful corporate action. It is in relation to this group that this paper aims to make a more explicit contribution by mobilizing the concept of necrocapitalism to analyse the case of niobium mining in the interior of the state of Goiás.

In 2020, a photographic essay was published as a result of this same research, entitled “Images of Necrocapitalism in Brazil: the Niobium Mining Industry”. The objective of the essay was twofold: first, to demonstrate the devastating effects of niobium mining on the populations surrounding the mine; second, to incite debate among researchers in the field of organizational studies about the need to denaturalize the existence of large corporations. In this case study, however, we engage in more profound theoretical discourse concerning corporate criminality and necrocapitalism, which is deemed the most suitable concept for interrogating the socially detrimental actions of major corporations within the context of the Global South (De Lima & Oliveira, 2020).

The article is structured in five sections, including this introduction. The following section presents a literature review, which focuses on the conceptual approaches to necrocapitalism and corporate crime, the research procedures, the results, and in conclusion, the final considerations.

Corporate crime and necrocapitalism

The long history of Western colonialism, its global reach and the peculiarity of its constitutive practices and structures have been fundamental in shaping the world as it is today (Prasad, 2003). In the context of organizational studies, the emergence of the postcolonial perspective is related to the emergence of poststructuralism, postmodernism and the critical management studies movement (Weston & Imas, 2018; Jack et al 2011).

According to Jack *et al.* (2011), the theme of postcoloniality is still understood in a superficial way in the field of organizational studies, with a predominance of works engaged in symbolic differences and representativeness - influenced above all by the writings of Bhabha (1993) and

Said (1978) - to the detriment of issues related to economic and political domination (Jack *et al.*, 2011). For the authors, “the postcolonial continues to be understood in terms of symbolic and textual references in the difference between localities rather than physical and material differences” (Jack *et al.*, 2011, p. 285).

To expand the scope of postcolonial critique within the field of organizational studies, Jack *et al.* (2011) propose three research categories: political economy, transnationalism, and traditional peoples' resistance. Regarding the political economy, it is appropriate to investigate the reproduction of historical patterns of imperialism in comparison with new forms of colonial domination from a neo-colonial perspective. For example, it would be beneficial to examine the historical provision of natural and material resources from Latin America and Africa to Europe (Böhm, 2020).

According to Jack *et al.* (2011, p. 286), “the challenge is to investigate the contemporary global political economy using the categories and lived experiences of imperialism, colonialism and resistance to them”. On this subject, the authors highlight the work of Banerjee (2008) on the articulation of corporate interests of companies and governments in relation to the control and exploitation of natural resources through violent practices, physical and/or symbolic, which the author calls necrocapitalism (Banerjee, 2008).

Necrocapitalism, conceptualized as a set of capital accumulation practices carried out by corporations with the support of the state that involve violence, dispossession and death (Banerjee, 2008), has its conceptual roots in the term necropolitics, developed by Mbembe (2003, p.39) to refer to “contemporary forms of subjugation of life to the power of death”. For Banerjee (2008), certain contemporary practices of capitalism contribute to the subjugation of life to the power of death, within states of exception in which “worlds of death” are produced, i.e. “new forms of social existence in which vast populations are subjected to living conditions that give them the status of the living dead” (Mbembe, 2003, p. 39).

The state of exception is an anomic space, in which a force of law without law is at play. It is

therefore a paradoxical institution, since it produces, from justice, a space without justice (Agamben, 1998), and “thus creates a zone in which the application of the law is suspended, but the law remains in force” (Banerjee, 2008, p. 1544). Today, the phenomenon of the state of exception is manifesting itself at varying levels of sovereignty. The disparities between different forms of sovereignty and the varying degrees of legal regulation are the result of what Stoler (2006, p. 128) terms “imperial formation”. These formations do not reflect the perceived insurmountable boundaries of national sovereignty; rather, they are closely related to the political and economic organization of the state.

The interplay between the market and states gives rise to varying degrees of sovereignty. In some instances, the state exerts considerable control over specific sectors of the economy, whereas in others, the market and foreign capital hold sway. This dynamic situates the state as a mechanism employed to safeguard, reinforce, and expand its influence over the economy, politics, and society (Pearce & Tombs, 1999). The sovereignty of the state is eroded by the influence of capital in economic and political decision-making processes that shape the trajectory of states at the national level: “global markets and capital, in collusion with governments, create states of exception where coercion, violence and murder take place” (Banerjee, 2008, p. 1546). However, resistance is not neglected in postcolonial literature, when discussing the concept of the border as a space conducive to articulations (Oliveira & Alcadipani, 2021).

Banerjee (2008) believes it is necessary to understand necrocapitalism as a practice operationalized through colonial sovereignty established in the context of the current political economy. In other words, it is necessary to examine how colonial sovereignty operates to produce states of exception conducive to necrocapitalist practices. In contemporary forms of capital accumulation, the corporation constitutes a key factor in conjunction with nation states, supranational institutions and international agencies in the necrocapitalist privatization of sovereignty (Banerjee, 2008).

Corporate practices in the context of niobium

exploitation are characterized in this article as necrocapitalist accumulation practices. These practices are articulated theoretically and conceptually with the literature on corporate crimes, the definition of which includes a set of offenses that are part of corporate violence (Friedrichs, 1996), i.e. environmentally irresponsible practices such as air pollution and the disposal of toxic material, the marketing of products that pose a threat to the health and lives of consumers and the imposition of unsafe working conditions (Hartley, 2008; Friedrichs, 1996).

The environmentally irresponsible practices that make up Friedrichs's (1996) category of violent crimes are part of a critical criminology called green criminology (Lynch, 1990), which claims to push the boundaries of ordinary criminology to encompass issues of global importance, while at the same time appropriating the insights of conventional criminology in an attempt to understand and respond to environmental crimes (White, 2008).

Although environmental crimes are not limited to corporations, the greatest damage is committed by them, whose actions are delimited by a fundamentally criminogenic economic and political context. In other words, the basis for environmental crime is contained in the very imperative of capitalist forms of production, distribution and consumption (White, 2008) and, furthermore, "the high price of land, water, oil, minerals and soil makes nature a commodity", which makes the populations that inhabit the areas of exploitation an obstacle to the conversion of nature into capital. This implies that corporate environmental crime serves a dynamic of indefinite expansion, both in terms of production and territory, driven by one principle: endless accumulation (Suaréz, 2017).

Methodological elements of the research

A qualitative approach was adopted and the corpus consisted of interviews and documents, which were interpreted in order to understand the context under investigation. Documentary research was carried out, using reports published in local newspapers and on the websites of public

authorities, such as the Public Prosecutor's Office and the State Government, as well as technical opinions from the municipal environmental inspection body. Semi-structured interviews were also carried out with 11 residents of the affected communities in order to encourage them to describe events that could clarify general aspects of the operations and the effects of mining on the communities. The research corpus totaled around 90 pages. Table 1 summarizes the documents, reports and interviews that were part of the research corpus.

Table 1
Composition of the research corpus - documents and reports

Source type	Origin	Number of documents
Technical reports and opinions	Municipal Environment Department	4
News	Local media*	8
News	Public authorities**	2
Reports	National media	3
Video	<i>YouTube</i>	1

Source: research data.

Note: *News published on the "Catalão Notícias" portal and **news published on the MPMGO and Catalão City Hall websites.

The interviews were conducted on the basis of convenience and accessibility, with 8 men living or formerly living in the Macaúbas and Mata Preta communities in Catalão/GO, and 3 women also living or formerly living in the region, aged between 40 and 70. The interviews were carried out during the reforestation task force held in the Macaúbas Community in November 2019, in which 2,000 seedlings were planted with the aim of recovering the region's springs, an initiative that involved the State University of Goiás and residents and former residents of the communities.

The procedures adopted followed the ethical guidelines for social research: the interviewees were informed of the objectives of the research, signed the ICF and consented to the recording. The total duration of the interviews was 3 hours and 36 minutes and their transcription resulted in 15 pages. In the presentation of the results,

fictitious names have been used to preserve anonymity and it has been decided not to edit out any inaccuracies or even mark them with the particle [sic].

Reflective thematic analysis (Braun & Clarke, 2006) was used to analyze the empirical material. The materials were first read, starting with the news reports, and then the other documents and interviews were added to the corpus as access was granted. Becoming familiar with the material allowed for a more precise definition of the data sets that would be relevant to the analysis. With the final definition of the research corpus, it was possible to carry out active readings which resulted in some insights for the design of the codes, coding which was essentially guided by theory.

The thematic map initially constructed did not include all the aspects related to the concept of necrocapitalism elaborated by Banerjee (2008). The exercise of drawing on the theoretical basis and the material repeatedly made it possible for the subsequent themes to be more consistent with the concept. Three aspects guided the final definition of the themes: (1) the practices of accumulation - the analysis of the documents, especially the technical documents, pointed to corporate environmental crime and tax evasion as practices associated with reducing operating costs and/or expanding mining activity; (2) the colonial context of exploitation in which the extraction and commercialization of niobium are inserted, characterized by a model of colonial exploitation, the use of the discourse of development and the loss of state sovereignty; and (3) the effects produced by such practices: death, dispossession and the destruction of livelihoods. One finding that is not related to the concept of necrocapitalism, but which emerged from the analysis, was the resistance movements to the territorial expansion of the mining company that is the object of this research. Figure 1 shows the categories and subcategories of analysis.

In the next section, the categories and subcategories resulting from the analysis process will be discussed.

Figure 1

Categories and subcategories of analysis.

Necrocapitalism in the niobium mining industry		
Accumulation practices	The exploitation context	The effects of exploitation
↓	↓	↓
Environmental crime	Operating model	Exploitation of communities
Tax evasion	Subalternity of the state	Creation of the worlds of death
	Development as a prerogative for exploitation	Forms of resistance

Source: Research data.

Results: necrocapitalist practices in the context of the niobium mining industry

The exploitation of niobium in the municipality of Catalão/GO began in 1970 with the founding of Mineração Catalão S.A., a company belonging to the German Brasimet group. In 1983, the company was sold to the multinational Anglo American (AA), which went on to exploit the Catalão II Complex (Mine 2) known as the Boa Vista Mine, located near the Coqueiros and Mata Preta communities (Sousa *et al.*, 2019). In 2009, AA announced a 25% reduction in personnel costs and the sale of assets, including Copebrás, a phosphate mining company, and Niobrás, formerly Mineração Catalão S.A. (Portal Catalão, 2009). In 2016, the companies were acquired for 1.7 billion dollars by China Molybdenum (CMOC, 2016).

Since then, conflicts with the local population have intensified, as a result of the socio-environmental impacts caused by the advance of mining into the territory. The next section discusses this advance and how it translates into necrocapitalist practices justified by the idea of progress and development (Banerjee, 2008), considering three analytical categories: the practices of accumulation; the context of exploitation; and the effects of exploitation.

1st analytical category: accumulation practices: environmental crime and tax evasion

The first analytical category is accumulation practices, which are subdivided into "environmental crime" and "tax evasion". For

Banerjee (2008, p. 1559), "the theory of necrocapitalism demands that we pay attention to the specific practices that result in the subjugation of life to the power of death". Environmental crime is identified in episodes of contamination and depletion of watercourses, air and noise pollution and the imposition of environmental risks that may or may not involve the violation of environmental legislation (Law 9.605 of 1998). This type of crime committed by corporations produces worlds of death, subjecting the population to their own damage (Mbembe, 2003), which will be discussed in the third category.

The episodes involving Niobrás (CMOC and Anglo American) were identified in the Public Civil Action filed by the MPGO in June 2019, which demanded a ban on the state granting an installation license for works to raise the remaining tailings dams and the removal of administrative facilities located downstream of the dams. It is in this sense that Banerjee (2008) points out that the sovereignty of the state is diluted by the domination of capital in economic decisions.

The Public Civil Action was filed after the company refused to sign an out-of-court settlement agreement. This is because "the dams have high potential damage associated with them, including the possibility of affecting dozens of employees working in facilities located downstream of the dams" (MPGO, 2019b, p. 1). The lawsuit also prohibits the state from granting an installation license for upstream raising works, on the grounds that this is the least safe method for building dams, but it continues to be used by mining companies due to the lower cost of construction (MPGO, 2019b). It is the suspension of the application of the law, although the law remains in force (Banerjee, 2008).

SEMMAC's inspection report 295/2015 reveals the decrease in water flow in the streams around the Boa Vista Mine: "in all the properties visited, the reduced water flow and the very low level of water in the dams were noted, some of which even dried up, damaging human supply and animal watering" (SEMMAC, 2015b, p. 1). This observation of the conditions that led to environmental crime points to what White (2008) says about corporate crime being under the imperative of capitalist forms of production,

distribution and consumption.

In addition to the water issue, the report points to other problems related to ore extraction. Monitoring carried out between August and September 2014 revealed "a high concentration of particulates directly associated with the Boa Vista mine, where there is a lot of movement of trucks and machinery, as well as detonations with explosives to dismantle rocks" (SEMMAC, 2015b, p. 8).

Noise levels were also found to be above the limits recommended by the National Environment Council (CONAMA), which "causes damage and imbalance to the local ecosystem, especially the fauna" (SEMMAC, 2015b, p. 14). In this episode, infractions were found under articles 64 and 62 of Federal Decree No. 6,514/2016, which deal with suspended particulate matter and noise pollution, respectively, the penalty for which was calculated at 8 million reais (SEMMAC, 2015b).

The analysis of the empirical material indicates that problems related to water - contamination, reduced water flow and lowering of the water table - are central to conflicts involving communities and companies, as this is an indispensable resource for maintaining living conditions, especially in rural areas, where agricultural and farming activities predominate. In this context, corporate environmental crime is committed as part of a capitalist dynamic of indefinite expansion, both in terms of production and territory, with the aim of intensifying accumulation (Suaréz, 2017), whether of capital, resources or domination.

Niobium extraction activities are marked by environmental crimes, especially those related to the improper use of water and contamination by particulates. The documents show that when they are not directly sickened, they are relegated to a condition of permanent precariousness. The environmental crimes resulting from niobium extraction can therefore be characterized as necrocapitalist practices of accumulation, those carried out by corporations with the support of the state, involving violence, dispossession and death (Banerjee, 2008).

Another practice identified in the analysis of the empirical material was tax evasion, which ultimately leads to the appropriation of funds by

the company that should be earmarked for the payment of royalties to the municipality of Catalão. In 2018, an audit by the former National Department of Mineral Production (DNPM) revealed that the mining companies operating in the municipality have debts of around 94 million reais, relating to Financial Compensation for the Export of Mineral Resources (CFEM), and around 15 million reais in Service Tax (ISS).

At the time, the mayor made statements to the press accusing the mining companies of stealing from the municipality, which caused a conflict with the then Director of CMOC, who responded to the accusations by criticizing the mayor's statements. The latter, in turn, replied that: "I'm not going to hand over to you, to China, what is money to do works for the benefit of the city of Catalão" (YouTube, 2018). The analysis of the empirical material shows that the debt with the municipality is not recent, that is, it has been going on for the decades that mining companies have been operating in the region; however, the recent and atypical fact is the public clash between representatives of the municipality and the company. This points to the fact that relations between the state and the companies are not homogeneous. At times they are characterized by the convergence of interests, as in the case of the declarations of support made by the then Governor of the State Ronaldo Caiado when referring to CMOC's expansion project, and at other times by disagreement, as in the case of the collection of CFEM. In the case of environmental crime and tax evasion, we see the manifestation of violent practices, whether physical or symbolic, which Banerjee (2008) calls necrocapitalist practices aimed at accumulation.

2nd Analytical category: the context of exploitation: colonialism and state subalternity in the quest for "development"

The second analytical category was called "the context of exploitation", which groups together interpretations of a model of exploitation based on what Banerjee (2008) called the necrocapitalist privatization of sovereignty, i.e. the domination of corporations over the state. Antônio, one of the residents of the Macaúbas

Community, attributed the destruction of living conditions elucidated in the previous section to the predatory colonial model employed in Brazil since the colonial invasion,

In the logic of the discovery of Brazil, that discovery thing, the European center comes, Europe comes to discover, colonialism colonizes, this predatory model came in the package and it's still here today. As natives, as locals, how do we deal with this today? We have a reference, how is this going to work out?" (Antônio, interviewee)

Antônio refers to Anglo American when he talks about the "Europeans", the former owners of the mining companies Copebrás and Niobrás, which were sold to the Chinese company CMOC in 2016. Antônio's speech indicates indignation at the exploitation imposed by foreign companies that appropriate the resources belonging to the communities, which should decide how these resources are used. In the model of colonial exploitation, authority over the territory is handed over to foreign companies that benefit from the exploitation and commercialization of resources, while the natives and traditional populations are left to destroy them. This phenomenon is the reproduction of historical imperialism, in terms of a contemporary form of colonization taking place in Latin America (Böhm, 2020).

At a meeting held in 2019 between public authorities and CMOC leaders to announce a 1.2 billion real project to expand the company's activities in the municipality, the then governor of the state, Ronaldo Caiado, declared that "the state is committed to providing the company with the conditions and also the speed for the projects to be put into practice as quickly as possible" (Governo do Estado de Goiás, 2019, p. 2). The Governor's position on the role of the state in the investment scenario announced by CMOC is that it must provide the conditions for the expansion project to be carried out "as quickly as possible". In June 2019, the state was prevented by the MPGO from granting new water use concessions and installation licenses to the company for the expansion of tailings dams, even contrary to ANM resolution 13/2019, which prohibited the expansion of dams using the upstream method

after the dam collapse in Brumadinho, Minas Gerais, which killed 272 people (ANM, 2019).

According to Pearce and Tombs (1999), corporations use the state as an apparatus to maintain and expand their political and economic dominance over society, resulting in the loss of sovereignty, as can be seen in their willingness to provide the necessary conditions for the expansion of mining activity by granting indiscriminate water use permits and licenses to install works to raise tailings dams upstream, a method prohibited by the ANM.

The investments planned for the expansion of niobium exploration activities are justified by the discourse of development: "we note the importance of the mineral enterprise for Goiás and the Department of the Environment wants to be a partner in promoting sustainable regional development together with the company" (Goiás State Government, 2019). Natural resources are thus a commodity available to be exploited and, as Suárez (2017) explains, the populations living in these areas of exploitation become, in the eyes of capital, an obstacle to the conversion of nature into accumulation.

Residents of the affected communities question the significance of the expansion of mining in the region and the discourse of development propagated by the government as a justification for necrocapitalist practices (Srikantia, 2016).

So, I think we need to level the debate. We need development, we need mining, as has been said, but what mining? What development? You know, the one that's there isn't working. So, I'd like to suggest to some people that there are people, the gifts are varied, some are going to stay at the foot of the [...], they don't want to know about study, they don't want to know about books, but others can do this task and I think they should, they need to, it's necessary." (José, interviewee)

The excerpt above was spoken during a get-together among farmers after a joint planting effort to restore springs. José questions the development announced by the mining companies and points out his dissatisfaction with their actions. For José, leveling the debate depends on the intellectual education of farmers, so that they are able to argue

against decisions that affect them.

The idea of development is used to justify the dispossession and displacement of traditional communities, the appropriation of their natural resources, the transformation of their ecosystems and the deterioration of their livelihoods (Srikantia, 2016), which Böhm (2016) considers to be serious human rights violations caused by business activities. Therefore, the idea of development is nothing more than a discursive mechanism to "legitimize the reduction of individual rights, and even their violation, when respecting the rights of an affected group is perceived as unprofitable for national and international economic interests" (Böhm, 2016, p. 128).

The prioritization of economic results over environmental protection and respect for communities has led to the expulsion of families, precarious living conditions, deaths and suffering, which Banerjee (2011) summarizes in the idea of worlds of death. The imposition of such conditions, however, does not occur without resistance. The next section deals with these findings, which make up the "effects of exploitation" category.

3rd Analytical category: effects of exploitation: expropriation, creation of worlds of death and resistance

The analytical category "the effects of exploitation" groups together the interpretations of the empirical material on the impacts felt by the affected community. One of these effects is the expropriation of the land, which occurs through legal disputes over ownership between the residents and the mining company, and which can lead to the residents being forced to leave:

The land is theirs and the mining company comes in and forces them to sell and when they don't sell they go to court, so they ended up giving in, but then they gave them a deadline to leave and they didn't leave, they were taken away with a court order, they were evicted with a court order because the mining company was already in their backyard and they were still trying to resist but they couldn't, they had to leave. (Mrs. Ana, interviewee)

In Dona Ana's opinion, the legal disputes represent an embarrassment for the residents who, feeling cornered, choose to accept the negotiations. Today, there are just over a hundred families left in the Macaúbas Community, which ends up helping to consolidate the mining companies' advance on the properties that still exist.

The suffering caused by the loss of one's home is the recognition of the impossibility of opposing a compulsory order, in other words, the impossibility of deciding on one's own life. In addition to the loss of the home, expropriation means the loss of the means of subsistence, which leads to a worsening of the families' economic condition, in a perspective of the power of the state and the corporation over the decision of who should live and who should die (Mbembe, 2003), whether it is physical or symbolic death. During the interviews, examples were cited of inhabitants who, after negotiating their land, began to live in a situation of social vulnerability. Another aspect related to expropriation that is a source of suffering for residents is the isolation caused by the reduction in the number of families and the consequent impairment of social interaction and cultural activities carried out in the community.

As well as dispossession, the deterioration of living conditions involving the contamination of water, soil and air, and the changes caused to the landscape, constitute the effects of exploitation (Srikantia, 2016) and are part of the "worlds of death" (Banerjee, 2011) produced in the context of niobium exploitation. In this context, the population is seen as an obstacle to corporations transforming the "commodity" nature into capital (Böhm, 2020). The degradation of living conditions is expressed by the residents:

this is the scenario you're seeing, this degradation, this pollution, this aggressive attitude towards nature, towards the place. So when the mine closes, which is the final stage, what will be left of it? Can there be life in a place like that? So it's all been destroyed." (Antonio, interviewee)

In this scenario of depleted living conditions, the damage caused to physical and psychological health appears frequently in the residents' testimonies, specifically in relation to the

incidence of illnesses which, for them, is directly related to living with the contamination caused by mineral exploitation.

The effects created by the exploitation of niobium involve dispossession, death and the destruction of livelihoods, resulting from the set of accumulation practices employed by the mining company, which characterizes them as necrocapitalist accumulation practices (Banerjee, 2008). The effects of exploitation identified in the analysis of the material, however, are not limited to the constitutive elements of the worlds of death. The residents' resistance can also be recognized as an effect of exploitation.

In the communities affected by CMOC, the residents' resistance movement has intensified due to the expansion of mining activity in the territory.

In response to the advance of mining in the city of Catalão, a working group was set up in 2018 to discuss the problems arising from the advance of mining on the territory, with the participation of political leaders, students and residents. Raising awareness among the population encourages political participation by demanding more favorable conditions for residents in disputes with mining companies, especially regarding land use. The collective action of the residents has resulted in some achievements:

what's left for us? The struggle! And we've already shown them that we're there, and they've already respected us in many ways for our struggle, for our fight, we've already done something that they've recognized that we're united, that we're a thing, including the field, the sports court, the community center." (Joaquim, interviewee)

The episode involving the soccer field refers to the acquisition by Vale, now Mosaic - one of the mining companies operating in the region - of a piece of land whose territory extends beyond the soccer field, an important place for the community that is trying to preserve the tradition of rural championships. Residents are resisting in an attempt to prevent the mining company from restricting access to the space without providing another site where a new soccer field can be built.

Another episode of resistance was the encampment organized by residents of the Macaúbas Community in December 2014,

following the damaging of a culvert that gives access to the properties, as a way of demanding that it be repaired and which ended up becoming a space for discussion about the difficulties faced by the residents (Portal Catalão, 2014). After the repercussions among residents and the local media, the mining companies opted to repair the culvert. The residents of the affected communities realized after the episode that collective struggle can lead to better negotiating conditions with the companies.

Discussion: corporate crimes from the perspective of necrocapitalism

The sociological definition based on the idea of crime (Medeiros & Silveira, 2017; Evertsson, 2016; Michalowski, 2010; Michalowski and Kramer, 1987) allows us to understand that the creation of death spaces and the expropriation associated with necrocapitalism are the result of the criminal conduct of corporations.

In this sense, the environmental crimes and tax evasion found in this research should be understood as practices of necrocapitalist accumulation (Banerjee, 2008), given that their achievement is related to the search for a permanent reduction in costs and expansion of production, causing expropriation, death and destruction of the means of life and are part of a colonial-extractivist economic policy.

This model produces socio-productive spaces submissive to changes in the international market and generates fragmentation of local sociabilities through the expropriation of rural communities and the subordination of governments to large corporations (Böhm, 2016; Gonçalves, 2016), autonomy over some types of territories is suspended, "a new geography is generated with spaces submissive to extractivism linked to globalization and strongly protected by the state and other areas where the coverage of basic rights and services is weak or non-existent" (Gudynas, 2018, p. 67).

This context can be associated with Agamben's state of exception (1988), which consists of an anomic space in which what is at stake is a lawless force of law. The existence of states of exception in apparently independent

national states can be understood from a post-colonialist perspective as the result of the maintenance of colonial domination through contemporary forms known as neo-colonialism in which states, despite being independent, are subject to a foreign policy based on control of the international market, commodity prices and the imposition of unfavorable financing conditions on countries considered underdeveloped (Nkrumah, 1965).

The state of exception through which necrocapitalism is realized in the specific context of this research is therefore related to the perpetuation of colonial domination. Unlike modern Western colonialism, the state of exception today manifests itself in varying levels of sovereignty (Stoler, 2006). These imperial formations are sustained by economic states of exception that produce specific patterns of sovereignty/citizenship based on the infiltration of market logic into politics.

The analysis of the material exposes, through the theme "context of exploitation", episodes that express the contours of the imperial formations of the niobium industry. These episodes portray the power and political-economic influence of corporations over the state as a set of political decisions that contribute to the consummation of accumulation practices, such as the episodes involving the provision of permits for the indiscriminate use of water and the state government's support for major mineral exploration projects.

The privatization of sovereignty is justified through the discourse of development, which functions as an apparatus that produces knowledge about the third world by implementing forms of power and intervention that end up fabricating it. The discourse of development as a prerogative for exploitation - expressed mainly in claims about the generation of jobs and income that the expansion of mining would generate - is used to justify and legitimize the advance of mining activity over the territory of traditional communities, at whatever price.

The narratives expressed in the material analyzed indicate the contradictions between the discourse of the companies and the residents of the communities affected by mining, who question the

discourse of development because they recognize that the expansion of mining activity has not generated benefits for the communities.

The results of necrocapitalist practices are reflected in the effects of exploitation, which include the expropriation of communities, the creation of worlds of death and the forms of resistance employed by residents in the context studied in this research.

It is important to note that expropriation represents much more than the loss of property. For these populations, it means the loss of their homes, of social interaction in the community, of the conditions for reproducing their existence and of the historical-family cultural identity built up over generations. By an arbitrary decision, they have to leave their homes, crops, gardens and community spaces and in many cases move to the city, far from the traditional ways of life they cultivated, which ends up impoverishing them both financially and socially, resulting in psychological pain and suffering. On the other hand, corporations, with their complex management systems and their economic and political influence in the host countries of their businesses, displace state intervention, undermining the possibilities of protecting citizens' rights, which is a common phenomenon in Latin American countries (Böhm, 2016).

Inserted in a context in which they are forced to rebuild their lives, often marked by a sense of loss and injustice, the communities turn to manifestations of resistance as a way of claiming demands and expressing their frustrations. Although resistance is not an explicit category in the concept of necrocapitalism, the theme emerged as an important aspect of the fieldwork. Political organization and collective struggle appeared as important instruments in winning favorable demands for the communities.

Final considerations

The necrocapitalism of the niobium industry is characterized by corporate crime as a practice of accumulation, in a context of colonial exploitation marked by the influence and power of large multinational corporations over the state. In this context, the advance of mining activity is justified

through the discourse of development and its effects include the expropriation of communities, the destruction of livelihoods and the resistance of traditional populations.

The articulation of the notions of necrocapitalism with the criminological perspective is not only necessary but also useful for understanding corporations as rights-offending and criminal entities, which has been obscured by the view that harm is a normal result of corporate activities carried out by transnational companies (Böhm, 2020).

An understanding of the niobium industry's necrocapitalism was achieved by describing its characteristics in each of the concept's dimensions. However, it was not up to this research to exhaust the possibilities of characterizing the sector's necrocapitalism, not least because it has some limitations. The heterogeneity of the data sources, the difficulty in accessing other documents that could have been used to compose the research corpus and the use of reports published on news portals and audiovisual productions should be highlighted as limitations of the research.

The limitations presented here do not detract from the social denunciation that was intended. The analysis of the material revealed aspects of mining activity that not even the promise of progress can overcome. It is necessary to recognize the damage caused by mining and question whether the profit produced by exploitation should take precedence over life. It is hoped that researchers will set out to uncover the mechanisms through which life is subjugated for the sake of profit and the consequences for society, so that it is possible to claim the emancipation of traditional populations and local governments from the economic, institutional and discursive power of large corporations.

In order to benefit the field of organizational studies, it is suggested that research be carried out to advance the debate on the necrocapitalism of the mining industry, starting with different regional cutouts, the analysis of which may reveal aspects that could not be addressed in this research. Future research should investigate the economic and social damage caused by tax evasion in the specific context of mining, and finally, the field would benefit from studies aimed at deepening

discussions on social movements and forms of resistance.

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