

Agrinecrocapitalism: the transformation of the tropical forest into soy plantations in the Brazilian Amazon

Summary

On the lower Tapajós River in Brazil, how is the Amazon rainforest transformed into soy fields? How does the use of pesticides destroy complex webs of life in the region, opening up space for the expansion of grain monocultures? Since the beginning of the 21st century the Lower Tapajós basin has experienced an increase in deforestation, land grabbing, and contamination through the use of pesticides. Based on 18 months of ethnographic fieldwork in the region, this article follows the reflections of traditional Amazonian farmers on the violence involved in the financialization of land that, encouraged by the agricultural industry, shapes the expansion of plantations through a process I call *agrinecrocapitalism*. In other words, this paper develops an ethnographic theory of the forms of killing that composes the frontiers of capitalist expansion in the Brazilian Amazon.

Key words

Agrinecrocapitalism; Amazon; Tapajós; financialization of land; soy; plantations; land grabbing; toxicity;

I came across a strange container, which immediately caught my attention. At the popular market of Santarém (known as Mercado 2000), among cupuaçu, açaí, Brazil nuts, the strong smell of dried shrimp mixed with the omnipresent scent of coriander, there were dozens of buckets of peppers soaking in the tucupi sauce, coloring the environment. It is a humid place, a kind of open shed, one of those popular markets that abound in the Amazon. And among these buckets was the container of an agrochemical, whose name I did not immediately identify, that was being used to give a spicy taste to the tucupi, which would be used to season Tucunarés, Surubins, Matrinxãs, and other fish from the region.

It is not easy to understand the impact of soy plantation in the region. By then, I already had the sense that soy was a big problem in the Lower Tapajós, especially on the right bank of the river. I was used to going back and forth to Santarém, using the city as a stopping point for my field work with the Tupinambá at the Tapajós-Arapiuns Extractivist Reserve, located on the left bank. Until then, I had traveled through mostly forested areas,

arriving and leaving Santarém by boat—a route in which little of the deforested forest is seen. Over the months, several conversations and situations brought the relationship between farmers, soybeans, and poison to the fore. One of the most notable cases occurred in a Munduruku village in the region, where I saw the same sort of agrochemical container with a tap attached, repurposed into a sort of drinking fountain.

The perception that soy is accompanied by a high degree of toxicity composes a certain social imaginary in Santarém. More than once I heard it said (including by people who are not particularly politicized in relation to deforestation and the process of converting the forest into soybeans) that the Chinese, who are among the biggest buyers of the grain in the region, carry out rigorous periodic inspections of the plantation, that they often refuse soy that has excessive levels of chemicals, that this would be used to feed the chickens eaten by the local population.

It was only a few months later, on a daytime flight, that I was able to have a broader understanding of how soybean plantations take over the forest. The forest on the right side was cut down for soy, which surrounded the communities and forced them to sell their land at any price. Soy also made the Tupinambá on the left bank fearful that the multiplicity of plants and animals would be reduced to pale orange beans. As we walked together in the forest, Cacique Braz, then President of the Tupinambá Council, invited me to imagine a terrifying image of what could happen: “Oh Fábio, imagine all this here becoming soy?”

Introduction

The Lower Tapajós is a multiethnic territory, located in western Pará at the confluence of the Arapiuns, Tapajós and Amazonas rivers. Thirteen different indigenous groups live in the region,¹ as do dozens of *quilombola* communities² and hundreds of riverine communities. It can be said that, until about twenty years ago, communities largely depended on the production of manioc and hunting, fishing, and the cultivation of nuts, açaí and other fruits

¹ They are: the Tupinambá, the Tupaiú, the Arapium, the Tapajó, the Maró, the Cumaruara, the Borari, the Munduruku, the Munduruku da Cara Preta, the Maitapu, the Arara Vermelha, the Jaraqui and the Apiacá. The local political indigenous organization is named CITA, acronym in Portuguese for Tapajós Arapiuns Indigenous Council.

² In addition to indigenous, riverside and church organizations, an important part of Santarém's political and cultural life revolves around the remaining quilombo communities that exist in the municipality. These are organized around the Federation of Quilombola Organizations of Santarém (FOQS) - former enslaved black communities with a history of anti-racist struggle.

engaging an intense contact with the forest and rivers. On the right bank of the Tapajós River, in the so-called Planalto Santareno (comprising the municipalities of Santarém, Belterra and Mojuí dos Campos), these communities have now been mostly emptied. Many people have become sick, and they are surrounded by soybeans and the little remaining bits of forest — patches of forests, or “farces,” in the words of one resident of the region. I’ll elaborate on this point below.

This change in the landscape, which involves the cutting down and development of soy plantations, can be characterized as the *financialization of the land*, which entails inserting these multiethnic territories covered by forest in an international chain of production of value centered on soy. I understand financialization as a process through which the financial market and its elites garner economic and political influence. At stake in the specific case of the lower Tapajós, financialization, I will argue over the course of this article, depends on the violence inflicted upon communitarian territories, in order to transform their landscape and render them productive to meet the demand of a growing international market. Until the last decade, these lands were used mainly for family farming, community consumption, and selling to regional markets in Santarém; now, they are producing soy to be exported to Europe, China and Turkey, among other countries.

In this article, I reflect on the forms of violence and the ways in which complex webs of life, involving humans, forests, rivers and other-than-human-beings are destroyed in service of this expanding capitalist frontier. A contemporary phenomenon that I interpret as the unfolding of the historical place of plantations in enhancing the colonization of the Americas. Mintz (2011) defends that the plantation is a “frontier institution”, where government was weak or absent and hence it depends on the “use and threat of violence” in order to “keep and restore order”. Violence is intrinsic to the plantations - historically and contemporary. With *frontier*, I follow Tsing's (2005) reflection on the process of capital expansion, which is marked by being simultaneously “not yet” integrated/developed and “in the process of” integration/development. In this interstice, there is a lack of distinction between the perceived legitimacy and illegitimacy of actors, which proves to be inseparable — such as multinational companies that receive massive contributions from investment funds, or soy farmers who supply the international market with grains produced in the Amazon and who are often accused of illegal deforestation, land grabbing and indiscriminate use of pesticides. This process follows, therefore, an identified pattern (BORRAS et al. 2012) of land concentration in the hands of a few people and is related to transnational investment

funds. Financialization of land and violence are two aspects of this process through which plantations expand in the Lower Tapajós.

The introduction of the term *agrinecrocapitalism* in this article seeks to more accurately describe the destruction of complex human and non-human forms of lives as an intrinsic characteristic of the process through which the tropical forest is transformed into soy plantations. I describe the materiality of this phenomenon as *expulsion by suffocation*, understanding it as the indiscriminate application of industrial agrochemicals (rooted in military origins) by local soy farmers to clear space, and dictate what forms of lives may thrive, those will perish, and dictating how death occurs. In this context, I use suffocation not in a metaphorical way, but as it represents a method of killing that makes the lives of small traditional Amazonian farmers impossible, forcing them no leave and hence reshaping these territories for the expansion of plantations. As I demonstrate in the following pages, this form of killing by suffocation defines the capitalistic frontiers in expansion over the forest, connecting a variety of actors, such as local soy farmers (who primarily benefit with the seizing of previously communal), multinational grain traders (that together with more forest being converted into soy plantations see an increase in the amount of grains they export), and financial conglomerates.

According to the *Trase* platform, which allows for the tracking of sensitive commodities like soy, the US company Cargill was the only trader operating in the region until 2018, exporting soybeans. Today, parallel to the increased rates of both deforestation³ and soy exportation,⁴ companies like Bunge, Novaagri, CHS, and Mitsubishi also operate in the region (TRASE, 2020). I focus on Cargill because of its historical presence in the region, marked by the construction of the main infrastructure that enhanced both an increase in grain production in the region and in deforestation - a port outlet through which soy is shipped to the rest of the world. According to a report produced by the Articulation of Indigenous Peoples of Brazil (APIB) in partnership with the NGO Amazon Watch, Cargill's main

³ According to the Mapbiomas platform, at the beginning of the historical series, in 1985, there were 1,660,163 hectares of forest in the municipalities of Santarém and Belterra. In 2004 this number dropped to 1,561,221 hectares in the two municipalities and 1,552,280 in 2021, according to Mapbiomas. This means a loss of more than one hundred thousand hectares of forest. Between 1985 and 2021, the area destined to soy planting goes from zero to 49 thousand hectares.

⁴ In 2004, the municipality of Santarém produced 1,909 tons of soy, and Belterra did not produce soy at all. In 2018, the last year that Cargill operated exports from the region alone, the two municipalities together produced more than 104,000 tons of soy. In 2020, the last year for which we have data available, 118,000 tons of soy were produced in the two municipalities. All these data according to the Trase platform.

investors include the BlackRock fund, with more than US\$8 trillion in assets and which, according to the report, “is financially enabling at least nine companies directly or indirectly implicated in land grabbing and other abuses of Indigenous peoples’ land rights in the Amazon” (TERENA 2021).

In this article, I focus particularly on one aspect of the financialization of land through the amplification of soy plantations and its dependence on the use of agrichemicals as a political technology to transform landscapes. Glyphosate fumigation in the Lower Tapajós ends up preventing traditional farmers from maintaining their agroecological practices and are therefore forced to leave their territories, a process I call *expulsion by suffocation*. It is an offshoot of the long lasting Green Revolution⁵ (PATEL 2013), and this particular phase is marked not only by the commodification of land, but by its financialization: as Patel puts it, “an insistence on the fungibility of land as a sine qua non of agricultural progress” (PATEL 2013, 43).

In the next sections, I start by describing the landscape of forest patches and remnants of communities surrounded by soy fields, drawing upon the insights and analyses of Seu Macaxeira, an important interlocutor for this research. He uses the word *farce* [*farsa*] to describe the current landscape as it is seen from the road, suggesting that what is left of the forest and communities is used by soy farmers as an attempt to cover up, or even lie about, the violent process through which this landscape was formed. Secondly, I describe the role of glyphosate in emptying the territory and forming this “farcical” landscape. Finally, I position agrochemicals as a political technology used to asphyxiate traditional populations whose homelands are located on the path of soy expansion. I call this phenomenon *agrinecrocapitalism*, referring to the production of death spurred by the development of plantations and that is integral to the financialization of the land.

Methodologically I’ve been influenced by the works of Tsing (2015) and Hetherington (2020), as first ethnographically follow a mushroom, and the second soybeans, and their assemblages. In this sense, these pages are also an ethnographic experiment, as

⁵ Initiated in the 1960s in the United States, in the context of the Cold War, the Green Revolution is the term used to refer to the expansion of an industrial model of food production. Based on a consortium between academic institutions and private foundations (among which the Rockefeller Foundation stands out), the Green Revolution selected certain varieties of food to be produced on a large scale by countries of the so-called Third World, claiming to be a strategy to combat hunger, and simultaneously trying to contain the advance of communism. Amongst the criticisms, on the geopolitical level, support for anti-communist dictatorships stands out, and on the specifically agricultural level, the promotion of a standardized model of production that had little to do with the forms of production and culture of the “target” populations of the program. , the concentration of land by taking over communal lands, greater dependence on the agro-food industry, transgenic seeds and pesticides, but, above all, not having achieved its main declared objective, that is, to end hunger.

soybeans are the main character, together with the web of relations that arise around the grains, with other elements (such as glyphosate), and the landscape these relations entangle.

It is also important to note that for the purpose of this article, I alternate the terms “local farmers”, “small farmers” and “traditional farmers” to refer to riverine Amazonian communities that produce their food in close contact with the forest, mainly family activities marked by Indigenous influences in the forms land is cultivated with an appreciation for a diversity of plants. In contrast, I use the term “soy farmers” to refer to those who cultivate the grain aiming to supply an international market, and who often come from Southern Brazil (states of Rio Grande do Sul and Paraná mainly), and their descendents.

1. The farce

Mr. Antonio Alves⁶, known by all as Seu Macaxeira (a funny nickname which translates as Mr. Manioc), is a traditional farmer and member of the Rural Workers Union of Santarém (STTR). By the end of 2019, we drove between the rural communities that border the Curuá-Una road. Seu Macaxeira explained what the region was like before the arrival of soybeans. The change in the landscape, the deforestation, the displacement of the people who lived there in a close relationship with the forest: these all come to his mind.

“The farce of communities!” he exclaimed from the back seat in the early hours of our journey.

“What do you mean, Seu Macaxeira?” I asked.

“There are only a few houses there. On the side of the road. And nothing else. Here before it was all community.”

A few kilometers later, he continued: “the farce they left,” he said, pointing to the narrow strips of remaining forest surrounded by soy fields. “Just some trees there.” And then, a few moments later, he concluded: “it's all soy behind it.”

Thinking with the analytic posed by Seu Macaxeira—the farce—I aim to more closely follow what he has been experiencing for the past two decades. The farce appears concretely in the communities and patches of forest that, as seen from the road, restrict the view of the expanding soy fields. Through the notion of farce, Seu Macaxeira articulates a critical

⁶ I used excerpts from this part of the ethnography as material for scientific divulgation, having been published as a longform journalistic piece by *Le Monde Diplomatique Brasil* (2020) in Portuguese, and in English, as a literary report, composing a chapter of my book (ZUKER, 2022). In addition, I also published in Portuguese some excerpts from this ethnography as a book chapter (ZUKER, 2022b). In these three publications, the critical-theoretical reflections that I bring here are not present, therefore the justification for the present article.

assessment of the attempted depopulation and deforestation of his territory in order to accommodate the cultivation of soy.

While driving and looking at this particular landscape through the car windows, Seu Macaxeira recalls what he passed through the last years, entangling his own personal story with the changes he has seen in the region. In the early 2000s, the land next to his house was purchased by someone who had just recently arrived, coming from the southern Brazilian state of Rio Grande do Sul. At first, Seu Macaxeira was happy with the arrival of his new neighbor, who was friendly and said he was coming to work the land. This new neighbor gave the impression that he had come to settle down, that he wanted to grow crops and have a calm life.

Seu Macaxeira had moved in mid-1999 to the community of Santos da Boa Fé, just by the Curuá-Una Road, in Santarém. He was happy with what he was growing in his small farm. He planted papaya, cupuaçu, soursop, potatoes, passionfruit and manioc — so much so that he earned his nickname. He supported four children with his planting. No poison. At that moment, at the turn of the millennium, soybeans were not even on the horizon. “He was a very good neighbor,” recalls Macaxeira, “but then he started buying land.” First the neighbor bought the plot behind his, followed by the one to his right. By 2002, he began to cut down the forest. He promised those from whom he bought land that he would create jobs in the region. Little by little, Seu Macaxeira found himself surrounded. The calm atmosphere his neighbor had promised never came. Neither did the jobs. At that time, when his neighbor was in the early stages of clearing the forest, it was the noise that was the most bothersome. Then, the soy. “That’s when the friction really started,” recalls Macaxeira. Seu Macaxeira observed the effects of fumigation on the soy fields had on his children. “It burns the eyes, it burns the throat. It causes chronic fevers and headaches.”

Developed by US company Monsanto (which today belongs to German Bayern), glyphosate became the most sold herbicide in the world, as only the same company’s transgenic seeds can resist its application. All forms of plants that have not been genetically engineered by the agri-food industry to resist glyphosate, die. The neighbor’s use of glyphosate began to make Seu Macaxeira’s own planting activities more difficult. “I was just a family farmer living on my papaya and manioc harvests. I felt like giving up. The poison was always there.” His crops all but stopped bearing fruit; when they did, they weren’t as wholesome as before. Leaves withered before the flowers bloomed. His family’s health and livelihood were under attack.

One afternoon in 2007, early in the Amazonian summer, Mr. Manioc saw his neighbor spraying the poison. It was six o'clock in the afternoon, and the children were at home. Concerned, he went over to talk about the situation with him. "I told him not to. I said if he didn't stop spraying that poison, I'd report him," recalls the farmer. A few days later, also in the late afternoon, the neighbor came to visit him. He excused himself before saying, "Seu Antônio, I'm here today to offer you two business opportunities. Either you buy my land, or I buy yours.

Surrounded by property larger than his own, which had been environmentally degraded by the felling of the forest and the accumulation of pesticides, and with his economic stability undermined by his neighbor's activities, Mr. Manioc had no way of buying the land. "There was no way we could stay. Nobody could live there breathing in that soy with that poison. So I was forced to sell."

After this moment, Seu Macaxeira left that area he was in, in Santos da Boa Fé, where he was surrounded by his neighbor soy fields. He says that when he moved to where he was when I interviewed him, back in 2019, the place was all covered by forests:. Now Seu Macaxeira and his grown children are again surrounded by soy. His property is similar to others one can see in the region: right where his cultivated backyard ends, the soy start. No wall, no separation of any kind. Ironically, Seu Macaxeira's only protection is it's own cassava trees, which border the grain field. During our interview, Seu Macaxeira said he was again under a lot of pressure, and had no prospects for where to go. The feeling he conveyed was that everything was already taken over by soybeans, and that he didn't have a place left to buy land and maintain his activity as a traditional farmer.



Figure 1. Seu Macaxeira in his property, surrounded by soy fields. Photo: Bruno Kelly

“It's suffocating,” he says. Suffocation is a term recurrently used by the people I interviewed in the region to refer to living with the poison. That's why I try to describe this process as *expulsion by suffocation*, as the complex webs of lives involving humans, crops and forest cease to thrive. Local farmers have been forced to use poisons on their own crops, otherwise, they don't prosper. Poison calls for more poison. Having lived in the region for twenty-eight years, Seu Macaxeira does not mince his words. “Their goal is to end our communities,” he says bluntly, referring to the soy farmers. With each meter purchased, with each piece of land with forest that makes room for the grain monoculture grains, with each spray of poison, small rural farmers feel surrounded. “And where am I going now? Where will I get land? I thought about the BR-163, but there's nowhere to go. I thought of Curuá-una, there's nowhere to go. I thought of Lago Grande, but agribusiness has arrived there too, and there's nowhere to go.” The first time soybean cornered him, Seu Macaxeira had somewhere to go. He got land in the same community, on a forest-covered branch. Now, he sees no way out. The only option that seemed viable to him, albeit hard to envision and

painful to think about, would be going to the city, probably to the outskirts of Santarém, where he would need to find work, in anything, anything besides being a traditional farmer.



Figure 2. The “farces”: concept used by Seu Macaxeira to refer to the remaining patches of forest and small communities on the side of roads and lanes, that impede the view of the extensions of the soy monoculture fields in the lower Tapajós. Photo: Bruno Kelly.

As Alex Nading notes, “pesticides are not simply elements of industrial landscapes. While products like glyphosate (better known in its commercial formulation as Roundup) have helped industrial monocultures thrive as never before, their integration into the global agricultural economy has had devastating results for small farmers” (NADING 2020, 214). Nading proposes the term *toxic worlding* to assess how toxic contaminants are constitutive elements of disaster, labor, and care, to attend to a toxicity that follows “a global pattern of harm, one linked to white supremacy, colonialism, and economic exploitation” (NADING, 2020, p. 210). *Toxic worlding* also emphasizes the active production of these ruined forest landscapes, now permeated by soy plantations, as being centered on the intensive use of pesticides.

The farces, these lying borders, the remnants of communities and forests visible by the roadside and that hide the soy fields, are the gateway to follow how the pesticides would expel the region's residents to make room for soy monoculture. This is what I characterize as *expulsion by suffocation*.

2. The Poison

This relation between soy, poison and the farmers supplying the global market for grains defines the dynamics of life and death in the Planalto Santareno region. The backyard of Seu Curica, the nickname of Raimundo Alves Guimarães, a resident of the Boa Esperança community, concentrates several aspects of this process. His property is small, and, around the house, within his land, there is a wide variety of plant species he cultivates: trees growing cashews, bananas, oranges, acerola, manioc, and many other fruits, in addition to a neat garden of culinary spices.



Figure 3. House where Seu Curica lived with his daughter, Sônia Maria Guimarães Sena, in the Boa Esperança community, on the Curuá-Una Road (Santarém). Photo: Bruno Kelly.

But just on the other side of the walls, its land is enveloped, as if besieged, by soybean fields. The image is desolate: a small square with multiple shades of green and a variety of plant formats surrounded by green-brown soybean fields. A lightly sweet and chemical smell hangs in the air, which invariably penetrates Seu Curica's land. There reigns a certain melancholy, a mismatch between a world that ceased to exist with the advance of soy fields and this small, resistant portion of land. Seu Curica expresses a bitter resignation, a feeling of inexorability in this soy expansion process. His land seems to be a space out of time, an ephemeral enclave, about to succumb.

“Some people put up a fight, but they failed,” Seu Curica recalls. “They [the soybean farmers] were buying up land here and there, and anyone caught in the middle of it was forced to sell because they couldn’t afford it anymore. The poison kills everything, takes everything, covers everything. That’s why they sold it all. They weren’t able to plant their own crops anymore.” The application of poison prevents his garden from flourishing as it once did. He shows a cashew tree in his backyard. “It’s all just seeds. It blooms, but there’s no fruit.”



Figure 4. Seu Curica with the leaves of his cashew tree, in the Boa da Esperança community.
Photo: Bruno Kelly.

“For years, macaws and monkeys have come here to eat the berries from the trees,” Sônia Maria Guimarães Sena, Seu Curica’s daughter, says, somewhat hurt. “They used to come all the way up to the house door’s. Suddenly, they disappeared.” Sônia and her father shared the same land, the same vibrant property covered by different shades of green, but they lived in different houses. When I interviewed her, she complained about their neighbors' glyphosate fumigation: she was always short of breath and nausea was constant. Everytime she realized that the winds were carrying a cloud of poison, Sônia was forced to lock herself in the house, often accompanied by anxiety attacks. She and her father tried to talk to the neighbors, to find times of day when they could apply the poison without causing so much trouble, but the conversation didn't go anywhere.

Sônia’s mother, Seu Curica's wife, died from stomach cancer in May 2019, a few months before our visit. Maria Dercy Godinho is remembered by her family as a fighter, Both father and daughter get emotional when talking about her. It is difficult for them not to relate this death to the constant contamination to which they were subjected “When she was alive, my wife fought hard to keep the pesticides out of here. But it didn’t work.” We walked through the cemetery where she’s buried, just a few meters from the house in which she lived. The cemetery itself is surrounded by the flat, tedious monochrome of soy fields - and about to be taken over by soy. Like her daughter Sônia, Maria Dercy also locked herself in the house when the soy farmers started using poison. After our visit, a few years after the death of her mother, Sônia died in 2022, also due to cancer.

Maria Dercy Godinho, as well as Seu Macaxeira, belonged to the Union of Rural Workers of Santarém. The union is at the forefront of the struggle against the impacts of soy in the region. At the time of our visit, in 2019, Macaxeira feared that Seu Curica and his daughter would end up selling their property. After we said goodbye, he wanted to show us another place, where the advance of soybeans was at a more advanced stage, resulting in the expulsion of the riverside populations. We drove to Ramal da Moça, where there was a community with the same name. “Ever since 2005, the locals have really been hit hard,” he said as we approached the place.



Figure 5. Seu Curica shows a photo of his late wife, Maria Dercy Godinho. Photo: Bruno Kelly.

Seu Macaxeira longed to show the remnants of the community, abandoned houses of residents who, forced by the poison, sold everything they had to move to the city. To his surprise, even the houses were torn down. Before, seventy-five families lived there, he said. Here, not even patches of forest and ruins of the communities existed. Everything became soy, but an abandoned school and two houses that had already been taken over by bushes wrapping around the buildings. Soon, these constructions would also be demolished, said Seu Macaxeira.



Figure 6. Abandoned house, overgrown with vegetation and surrounded by soybeans in Ramal da Moça, Boa Esperança community, Curuá-Una Road, Santarém (PA). Photo: Bruno Kelly.

This interaction between soy, poison, and farmers promotes a change in the relationships between people and the land they live on. Grain monoculture seems to leave no gaps; it definitely changed the landscape, demography, life and social relations in Planalto Santareno. Seu Curica laments: “There’s no hope of doing better for yourself here, because everything’s shut down,” Seu Curica laments. “There’s no way to move up, to move forward.” What corporate soybean operations call development means rubble for small, local farmers (GORDILLO 2014).

There’s a general feeling of discouragement in the air, which contrasts sharply with the community’s name: Boa Esperança, or Good Hope. It’s a place to which many people flocked when the forest began to open up in the early 1930s. There was a promising future there based on the extraction of rosewood for the production of perfume. Just a few years later, the name seemed to fit rather well with the quality of life. The community had become an important producer of flour for Santarém. “There were so many jobs here. You didn’t go

around looking for positions, they came looking for you,” Seu Curica says, referring to a distant past that’s nowhere to be found in the community today. “When the soybeans showed up, people started selling their land, and the jobs dried up.”

One of the ethnographic elements that seems relevant to me is the fact that several rural producers I interviewed reported that, as large farmers around them intensify the use of pesticides, they themselves are forced to use them. Otherwise, their crops don't thrive; the pests flee the soybean fields and make family plantations unfeasible. Accepting that they must use pesticides, for their own plantations, is always recognized with sadness, the same melancholy of those who face yet another facet of this terrifying, inescapable process of suffocation. To cite the influential work by Rob Nixon (2011), the Lower Tapajós is facing a process of *slow violence*, a process whose lengthy and scattered duration makes it difficult to recognize its own violence. There is a distended temporality involved in the process of *expulsion by suffocation*, which renders its brutality nearly imperceptible in “real time.”

3. Agrinecrocapitalism and *expulsion by suffocation*

The forms of violence currently taking place in the Lower Tapajós river, as well as in other regions of the Amazon known as the Arc of Deforestation,⁷ can be conceived as a recent chapter in a long, historical process of capitalist expansion through plantations. The concept of plantation, as read by Haraway and Tsing (2019), includes a radical simplification of the forms of life composing landscapes, replacement of people, crops, and forced labor. To which it is important to add the historical kidnapping and trafficking of people from the African continent, and the genocide of Native Americans. Elsewhere, Tsing (2012) characterizes plantations through the idea of scalability, which involves the preparation of soil and standardization of conditions needed for the thriving of specific species, albeit at the expense of other possible relationships with plants and territories. In other words, the dream of scalability always consists of replicating the same model, the same plant and techniques, regardless of the characteristics of a given location. Tsing focuses on Portuguese experiments with sugarcane during the fifteenth and sixteenth centuries, both on the island of Madeira and then replicated in Brazil.

⁷ The name given to the area that concentrates the agricultural expansion into forested regions, coinciding with the most pronounced deforestation rates in the Amazon. It spans approximately 500,000 square kilometers, and includes the southern and eastern parts of the Pará state, and goes west, including parts of Mato Grosso, Rondônia and Acre states.

The sugarcane brought to Brazil was planted alone, without any relation with other crops, with reproduction taking place by cloning: a perfectly scalable model that required changing the landscape, preparing the soil and violence. This process of transposing a plant from one location to another and creating a space for the plant to reproduce on a mass scale came, as we know, with a doubly genocidal process that defined modernity itself. While the Portuguese enslaved Africans to work in Brazil, Indigenous territories became sites of colonial violence through, among other lethal processes, the planting of sugarcane, which displaced them from the coasts in order to permit a greater source of income for the slaveholders who owned sugar mills. As Mintz writes: “in the Americas, the plantation was an organizational innovation. It was on the plantation that newly-conquered land, together with captive labor stolen from Africa during the course of four centuries, and the technical skills of Old World entrepreneurs, were joined together, thanks to global capitalism, to create the world's first overseas centers of *food export production*” (MINTZ 2011, 7-8).

It is important to note a discontinuity between the colonial sugarcane plantation and contemporary soybeans with regard to slavery. Although there are still numerous cases of workers in situations analogous to slavery, it does not have the same centrality in current Brazilian agribusiness as it did in the colonial period, in which the entire Brazilian economic and political system was centered on the labor of enslaved, kidnapped African peoples and their descents. This article argues nevertheless that the concept of plantation is important for describing the expansion of soy in the Brazilian Amazon. As Ofstehage (2018) argues, when dealing with soy plantations in the savannah-like cerrado of state of Bahia, Northeastern Brazil, the simplification, commodification, and forced relocation of people are not exclusive to plantations, since capitalism can be defined precisely by its ability to simultaneously alienate people from their work, from what they produce, and from themselves. Following Ofstehage, I do believe that, considering the structural elements of how soy expands across two of the largest and most diverse Brazilian biomes, this phenomenon can be qualified as plantation-related. As Wolford (2021) argues, plantations have a five century-long lasting function in supporting a racialized elite, providing colonial exploitation, forced labor and creating center and periphery relations (both between countries and within different countries): “the move to large-scale, monocrop or single-product production units dependent on enslaved labor, geared for extraction, dominated by the logic of market exchange, territorially possessive and highly mobile” (WOLFORD 2021, 1623).

Here, I refer to the synthesis offered by Besky (2023), for whom “plantations are landscapes of empire and extraction, governed by networks of colonial consumption and production, as well as capitalist logics of growth” (BESKY 2023, 1). The anthropologist emphasizes the centrality of plantations in the instantiation (I would say in the materialization) of colonial practices of accumulation and dispossession, and that such a form of production is not restricted to the past. Besky continues: “Plantations thrive in a global market in which power tilts to large-scale producers who can turn out low-cost products, which are in turn produced by workers who have been dispossessed of their ancestral land and livelihoods, often as part of or even as a precondition for plantation formation” (BESKY 2023, 1). Forced territorial dispossession, land concentration, and violence that aims to mass-produce grains for wealthier consumer markets are precisely aspects of the agri-industrial production of soy destroying complex webs of life in the Amazon region. that this article describes. Racism is an element that characterizes both the colonial and contemporary plantations. In the Lower Tapajós, racism is clearly visible and expressed in demographic terms: white migrants of German and Italian descent from the South of the country, mostly Rio Grande do Sul and Paraná, encroach upon the lands of Indigenous, *Quilombola* and riverine populations, who are the main targets of violence and agro-chemicals contamination, and end up evicted from their territories due to a long asphyxiation process.

I defend here that the process of colonization through plantations is a continuous one, and is being unfolded today in places like the Amazon forest Arch of Deforestation, defined by lasting forms of colonial violence dependent on the creation of certain ecologies. A “colonial inhabitation” (FERDINAND, 2022) produced through plantations, as a form of domination and exploitation of land, humans, and non-humans, is reinvented today by soy farmers, using the grains and herbicides to conquer more land in the Amazon. It all happens as if previous existing territories should be depopulated of its human, vegetal and animal life forms, to be transformed into a non-social place, creating space that would allow soy to proliferate.

Having debated the relevance of the concept of plantations to assess the current forms advancement of the agri industrial grain monocultures over the Amazon forest, in the continuation of the present section I intend to better qualify this through the elaboration of *agrinecropolitics* as a concept, emphasizing the forms of killing it depends on. Hetherington (2020) analyzes the attempts of the Paraguayan state under the presidency of Fernando Lugo

(2008-2012) to regulate the use of glyphosate in soy plantations, developing the concept of *agribiopolitics* to refer to phytosanitary measures, which would have emerged simultaneously to the biopolitical logic between the eighteenth and nineteenth centuries (FOUCAULT, 1997, 2004a, 2004b). Alongside the attempts to protect urban human populations there were analogous government phytosanitary regulations on farms to ensure large-scale food production.

To this end, the author employs *agribiopolitics* in two different ways. The first concerns how these measures structure the state based on legislation and policies, commonly overlapping the interests of local farmers with those of the public administration. The centrality of grain production in Paraguay (and in Brazil, it is worth noting) has an influence way beyond the economy, and it structures numerous aspects of life such as politics, social relations, culture, ecology and public health. Hence, the modality of relationship with grains constitutes models through which the state functions. The author refers to two distinct ways the Paraguayan state relates to grains: either as a Soy State (in which soy occupies a role similar to oil in petrostates, such as Venezuela and Saudi Arabia) or as a Government of Beans, in Hetherington's terms, referring precisely to former president Fernando Lugo's attempts to regulate, supervise and create restraints on soy monocultures and their impacts, thereby making soy production less harmful as compared to the Soy State .

A second understanding for *agribiopolitics* concerns the way in which phytosanitary policies in Paraguay have historically composed forms of violence that organize the relationship between life and death. The author makes reference to the country's Agrarian Reform in the 1960s, which at the same time guaranteed peasants (mostly Guaraní speakers) access to land and made colonization and expansion possible through industrial farming. In order to fight communism, dictators like Alfredo Stroessner supported the US-financed Green Revolution and promoted standard patterns of food production based on uniformized plants. As a result, this enhanced the implementation of monoculture industrial farming, concentrating land in the hands of big farmers, who increasingly depend on the use of pesticides to ensure that food production meets the needs of an increasingly urban population.

The aspiration of scalability, of the industrial production of certain grains, makes plantations emblematic landscapes of late capitalism, "spaces of industrial killing that aim to simplify life into its most scalable, commodifiable forms" (HETHERINGTON 2020, 15). Such a need for herbicides and pesticides has its origins in the ecological simplification involved in developing plantations, that makes them more susceptible to pests (TSING,

2015). Hetherington then formulates a specific function for agrochemicals in this expansion of industrial food production over heterogeneous territories and varieties of crops beings produced, in which herbicides like glyphosate allow certain forms of life (like design-engineered soy) to live, and kill all other plants. That is to say: agrochemicals allow certain forms of life to proliferate to the detriment of others. The ecological simplification that is so beneficial to soy farmers, depends on the killing of all the other forms of life that are not considered assets.

Before returning to the Lower Tapajós, it is worth emphasizing that what is at stake here is that agro-chemicals are part of an agro-industrial-military complex; a political technology used in the context of capitalist frontiers expansion over new territories, promoting drastic and violent changes in landscape in order to make them productive to a financial global system. The military origin of glyphosate must also be addressed. The chemical was first produced in large scale by Monsanto to replace pesticides such as DDT (an insecticide developed in the 1940s and used by the US army in World War II to contain malaria, typhus, and the bubonic plague) and Agent Orange (a highly toxic chemical that was famously used as a weapon in the Vietnam War). Both products were, as Vincanne Adams (2023) argues, created by Monsanto to be used in war, and they were only sold in the North American market later on, which forced the company to create its agricultural division in the 1960s, amidst the Green Revolution.

A relevant research makes explicit the military and violent use of glyphosate in the Colombian Amazon is the work of Kristina Lyons (2020), which approaches the Plan Colombia's War on Drugs in the context of Putumayo. Lyons centers her ethnography on peasant practices of decomposition and fertilization for crops in the Amazon rainforest in the midst of the Colombian government's indiscriminate aerial fumigation of agrochemicals (including glyphosate), with support from the United States, in an attempt to eliminate plantations of coca plants and marijuana—and perhaps other forms of life—in what she calls real “chemical warfare tactics”.

The mention of this military use of pesticide in rendering specific forms of life impossible is important here as it helps me better elucidate the shift I'm suggesting in this piece. In dialogue with recent scholarship around the use of agrochemicals in plantations and my own ethnographic observations, I offer the possibility of switching the focus from *bio* to *necro*, to better describe the forms of death enhanced by industrial agriculture. Agrinecrocapitalism, hence, works as a complement, and not a substitute, to agribiopolitics:

both concepts help us to better reflect, investigate, and analyze this multi-layered phenomenon, the ongoing development and spread of plantations over forested areas, such as the Amazon - each of them highlighting specific features, which is cloudy to the other.

As I described in the two first section of this article, the particular way farmers use poison in order to evict traditional communities from its territories in the Lower Tapajós, and produce soy to supply the demands of a global market, brings about an enormous landscape transformation, involving a broad extermination of complex webs of life. It relates ideas such as deforestation, export-oriented food productivity, territorial dispossession, income concentration, land financialization, and the dispersion of a form of slow violence against traditional farmers. The theoretical import of suggesting the term *agrinecrocapitalism* is hence to better describe the painful experiences of populations that have experienced transformation of their territories into plantations as necropower, “the power and the capacity to dictate who may live and who must die” (MBEMBE 2003). As Mbembe argues, certain sociopolitical realities uniquely combine aspects of biopolitics (sovereignty as a form of population control that dictates ways of living—in this case, agricultural productivity to feed cities or the global market), that are inextricable from those of necropolitics (the limits of sovereignty residing in the capacity to kill or to allow to live).

The very necropolitical aspect of transforming the forest into soy fields in the Lower Tapajós operates, in practice, through an *expulsion by suffocation*. I understand this with respect to a concrete tactic of applying techniques of industrial agriculture to empty space, with military origins, and exercising the power to control who and what lives—how to live—and who and what dies—how to die. In this sense, suffocation here is not a metaphor; rather, it is a modality of killing that creates adequate space for plantations, a concrete practice that composes these territories, emptying them and making room for the advancement of plantations, as well as the increase of economic and political influence seen companies and financial conglomerates on land that, until then, was considered communal.

Seu Macaxeira had to send his children to the city, as they could no longer bear the shortness of breath caused by the poisons. After moving repeatedly, he no longer knows where to go. The landscape around him has been altered in such a way that he wonders if the

time has come to leave his traditional farming trade and migrate to the city. Seu Curica and his daughter Sônia Maria Guimarães Cena had continued to live surrounded by monoculture, but the other forms of life with which they mutually constituted this territory are no longer present: the cashew trees do not bear fruit. The macaws are gone. Sônia could barely breathe, amid bouts of anxiety during the application of glyphosate, and ended up dying of cancer.

4. Conclusion

Agrinecrocapitalism, as a concept, characterizes the particular modes of production of death on capitalism frontiers. Or better formulated, it refers to the particular ways of killing on which expanding capitalism depends - and the chemical infrastructures that amplify this process. In a more theoretical proposition, to reflect ethnographically on the financialization of land from the Lower Tapajós is to describe the violent techniques of production upon which late capitalism rely on, and how it operates through the transformation of landscapes, the destruction of worlds and the making of other worlds, as violent and ecological impoverished as they are, on top of its ruins.

Throughout these pages, I have demonstrated that these landscapes, composed by endless fields of soy plantations among which leftovers of forests and communities appear here and there, are meant to hide the very violent process from which they originate. That's the farce Seu Macaxeira denounces when he talks about the remnants of communities and forest patches: these territories are not empty, there has been a violent process through which people were forced to leave, and forests were logged.

To conclude, I want to briefly historicize *expulsion by suffocation*, this form of killing to produce an emptied territory, the culmination of a long historical process of colonial land occupation in the Amazon region realized through a sequence of different forms of extirpation of life. In order to do that, it is worth stressing the gains of an anthropological approach to the phenomenon I've been describing in these pages and the intertwining of financialization, grain plantations expansion and the toxic composition of landscapes, and giving particular attention to the role of agrochemicals. Nading (2020) argues that toxicity is *elusive*. It is hard for epidemiologists to determine precisely a causation relationship between a given toxic substance and the diseases it might be causing, as "the effects of inorganic chemicals, metals, or gases on organisms vary depending on dosage, the presence of other organic and inorganic substances, and genetic and nutritional factors" (NADING 2020, 210).

Anthropological research operates through other methods different than those used by epidemiology, hard sciences and toxicology. Fieldwork ethnographic research gives a unique point of view of the two decades of violence that these remaining communities of the Lower Tapajós are witnessing. I would like to stress here three different facets that an anthropological approach to this phenomenon elucidates. First, the racist patterns involved in the use of toxins such as glyphosate, as it targets riverine, Indigenous and *quilombolas* communities and their forms of lives. A second feature of this process, one that hard sciences research would have a much harder time explaining, is the harm caused beyond specific individual bodies, that is, the collective dimension of suffering, landscape transformation and impacts on the way communities specifically relate to their land.

The third dimension of this process that anthropology elucidates is the possibility of historicizing this form of violence faced by communities in the Lower Tapajós river as a reactivation of older strategies used to take over Indigenous territories in Brazilian history. This ongoing takeover of the tropical forest through grain plantations and toxicity seeks to materialize the colonial-military imaginary of an empty Amazon. Soy, cattle ranching, palm oil plantations (PEREIRA DA SILVA, 2020) and logging: these are economic activities that presuppose a void, a demographic void that at once never existed and is precisely produced by these activities. Life is made, if not impossible, more painful for those who were there before the arrival of these activities. The theory of the “demographic void”, that the Amazon would be a “green desert,” factored into the Brazilian imagination during a significant part of the twentieth century, having been operative both during the Vargas Era (1930-1945), with the so-called March to the West, and more prominently during the Brazilian Civil-Military Dictatorship (1964-1985), with the plan to occupy the region under the auspice of national security.

Agrochemicals are used today as a military-political technology to materialize the colonial imaginary of an empty Amazon that is ready to be transformed, filled with people coming from other parts of the country and incorporated into a chain of global exchanges of goods and production of value to financial markets. As Michelle Murphy puts, I’m referring here to “settler-colonial capitalism as expressed through chemical relations” (Murphy 2017, 496).

In this way, the intense use of agrochemicals against communal lands in the Lower Tapajós can be situated as one of the most recent chapters of this alternative history of Brazil. Outlined by Viveiros de Castro (2017), he suggests to depict the country’s history as a long

process of expulsion and violence, among other strategies to obtain land from Indigenous populations, such as the deliberate use of viruses by colonizers (flu, measles and smallpox). Glyphosate is a first-rate helper in reducing the forest to monocultural soy plantations and transforming a variety of different human populations that live in direct contact with the forest in peripheral urban workers. Soy plantations, glyphosate, and toxic contamination are defining aspects of *agrinecrocapitalism*, and they are constitutive aspects of how capitalistic frontiers and the influence of the financial market depend upon violence to expand in today's Amazon rainforest. A concept that is likely to be used in the description of other forms of contemporary colonial take-overs of land through the use of plantations, and the agri industrial technologies that enable their expansion.

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