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Soil, Seeds, and Roses: Plantation Afterlives in an Argentine Soybean Frontier

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Abstract

In the Argentine Chaco — a world hotspot of agribusiness-driven deforestation — descendants of European settlers (*gringos*) who built manual cotton plantations on Indigenous land and labor in the twentieth century, have since been displaced from farming by the "soy boom." Nevertheless, plantation legacies persist in the racialized plant-relations of these actors today, and in their conflicted — and often acquiescent — attitudes to agribusiness. Drawing on emergent theories of the "Plantationocene," this essay examines how three settler interlocutors grieve the loss of plant-worlds that soy agribusiness has displaced, with a focus on living soil, cotton seeds, and potted roses. I show that these multispecies attachments perform a double role: while they sensitize these actors to the ecological fallouts of the soy boom, they also reinforce settler colonial plantation logics of racialized progress that ultimately feed their acquiescence to that agribusiness model.

Keywords

Plantationocene, agribusiness-driven deforestation, settler colonialism, environmental anthropology, Gran Chaco, multispecies attachment

Introduction

In the deforestation frontiers of the Argentine Chaco,[1] many *gringos* feel an acute sense of loss for vanishing plant-worlds, yet few contest the agribusiness model that propels that loss. Before the "soy boom" displaced them from farming, these gringos[2] — or descendants of European settlers — built small scale cotton plantations on Indigenous land and labor throughout the twentieth century. Today, gringos are increasingly affected by dangerous agrochemical intoxication, soil degradation, and climate upheavals linked to soy agribusiness. They speak mournfully of crumbling cotton gins, bygone cotton seeds, and gardens that have withered from drought or pesticides since the arrival of genetically modified (GM) farming. The forests around them are disappearing at one of the fastest rates in the world, displacing ecologies and livelihoods.[3] They fear for a future that excludes them as their young abandon the countryside for work. Still, they do not resist agribusiness.

In this essay, I draw on my ethnographic fieldwork to explore how racialized plantation afterlives in the Argentine Chaco shape gringos' acquiescence to an agricultural model that imperils them and the plant species they love. The assent of local farmers and ex-farmers — mostly of European descent — in soy frontiers across Argentina has posed a puzzle to researchers, given the soy boom's tremendous toll on health, employment, environment, and social relations (Gras and Hernández 2014; Lapegna and Kuhin 2023; Leguizamón 2020; Newell 2009). Whereas many countries have seen broad-based farmer movements against GM agribusiness, farmer consent in Argentina has helped consolidate a "soy state" (Hetherington 2020), with soy agriculture occupying half the country's arable land and a third of its exports.[4] Gringo farmers are less likely to contest big agribusiness in Argentina than racialized populations of mestizo *criollos* or *campesinos* (peasants) and Indigenous people, who have formed fronts of opposition like Mocase. Yet to date, the racialized class dynamics of gringo acquiescence remain an under-explored feature of Argentine agribusiness expansion.

Many of the displaced gringo cotton farmers I lived among in Chaco Province, Argentina between 2010 and 2023 held steadfast to the logic of monocrop progress that their parents and grandparents raised them with — a logic that links settler-colonial plantation identities to present-day soy fields.[5] This logic recurred in over 100 interviews and life histories I conducted in several Chaco towns with gringo cotton planters and descendants, and in dozens more testimonies about gringos among Indigenous and criollo ex-pickers and their families. Those called "gringos" in Chaco are descendants of European immigrants recruited in the 1920s to plant cotton on lands freshly usurped from Indigenous people in the

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genocidal "Conquest of the Desert" campaign.[6] Policies like the "Immigration and Colonization Law" (*Ley Avellaneda*) granted European settlers 100 hectares of fiscal (aka. dispossessed Indigenous) lands with an aim to civilize and populate the Argentine frontiers through agriculture.[7] This policy did not apply to the mixed-race *criollo* peasants in Chaco or to surviving Indigenous people, the latter of whom were often confined to *reducciones* (labor reservations) to work on gringo cotton plantations.[8] Nevertheless, gringos internalized Argentina's national narrative of a melting pot (*crisol*) nation built on "empty" land through the hard work of European immigrants. These historical silences and privileges were encoded into land-tenure schemas that favored gringos over their pickers and peons.[9] Today, many gringos lease their inherited small farms to big conglomerates as they struggle financially after years of accumulated debt, while those who "made it" in soy have usually left for the big cities, and Chaco remains one of the poorest Provinces in the country. Yet settler colonial histories and plantation legacies still map onto present-day identities and class positions.

The imprint of plantation afterlives on present-day agribusiness is highlighted by emerging perspectives on the "Plantationocene."[10] As both a concept and an analytic frame, the Plantationocene brings into sharp relief how enduring plantation logics and racialized affects shape monocultures across distinct times and scales. This makes it easier to trace the continuities between labor-intensive cotton fields of the past that were visibly racialized, and the vast GM soy fields that replaced that labor with machines and pesticides (Hetherington 2020; Ofstehage 2021). As a critical alternative to the more common term "Anthropocene," the Plantationocene centers the rise of race as a social formation in colonial plantation agriculture 500 years ago as the structurally determining foundation of today's agribusiness frontiers and attendant climate disasters (Carney 2021; Davis et al. 2019; Haraway 2015; Wolford 2021; see also Escobar 2007; McKittrick 2011; Wynter 1971). From this vantage, environmental racism is not just a collateral of the Anthropocene, but one of its centrally defining features (Pulido 2017).

Like racialization processes more generally, the affective and structural afterlives of colonial plantations can manifest in surreptitious ways that make them difficult to detect or trace ethnographically (Blickstein 2019). In light of this, ethnobiological approaches to the Plantationocene can offer a vital ethnographic anchor. Decolonial approaches to ethnobiology have stressed the weight of history on plant–people dynamics, and the importance of moving beyond the "ethno-ecological present" to consider how the colonial past shapes both "the natural resources themselves" and the uses, desires and affective attachments people invest in them (Nabhan et al. 2011, 2; see also Chao 2022; Carney 2003; McAlvay et al. 2021; Ogden 2021; Reo 2019). In Argentina, ethnobiology highlights how gringo identities — forged through agrarian settler colonial histories — continue to shape racialized multispecies attachments and attitudes today, making gringos significantly less likely to place ontological, ecological, medicinal, and nutritional value on native plant life and endangered forests than their Indigenous and criollo counterparts (Arias Toledo, Colantonio, and Galetto 2007; Kujawska et al. 2017; Martínez 2013; Trillo and Audisio 2018; Trillo, Arias Toledo, and Colantonio 2016). By the same token, gringo feelings of grief, love or longing for particular species and landscapes can shed useful light on the affective drivers of the soy boom and its harms.

Bearing this in mind, the rest of this essay draws on my fieldwork to trace how racialized cotton plantation legacies shape settlers' attachments to plant-worlds in ways that impact their attitudes to agribusiness. I argue that, while certain multispecies attachments have the potential to forge resistance to the Argentine soy boom, they operate here as loci of the Plantationocene, in ways that ultimately perpetuate the GM agribusiness model. In the next three sections, I present the cases of three settler interlocutors who grieve — but do not contest — the soy boom's displacement of a particular multispecies relation to which each is attached: soil, cotton seeds, and roses.

Soil

> *"Soy kills the soil. It destroys everything! With soy, they use a weed-killer that destroys the grass pastures […], which kills the soil and […] the quebracho colorado trees* (tannin trees emblematic of Chaco). *Because the trees and the soil need the grass too. It's also an attack on small farmers (*pequeños productores*). The poison killed my lemon trees. It killed my squash and my pumpkin. The hens died too, so I no longer have eggs. Soy kills all this, and you can't even eat soy. In ten or fifteen years, the soil won't produce anything at all."*
> -Marta

"*La soja mata"* ("soy kills") were the last the words I expected to hear from someone like Marta, a 79-year-old retired *gringa* cotton planter. This slogan typically circulates among small activist communities of landless and smallholder peasants, or *campesinos*, across the soy frontiers of the Gran Chaco at large (Hetherington 2020), and is associated with Indigenous-led and criollo-led movements against toxic soy fumigation and deforestation in the Argentine Chaco in particular (Lapegna 2017). Marta, on the other hand, is a proud gringo "daughter of founders *(fundadores*)" in the colony where she was raised, and hardly identifies with the racialized underclasses who were peons or cotton pickers on her family's plantation. In our conversations, she earnestly recounted the settler origin story of European immigrant "founding" in an "empty desert" — a narrative that erases the past and present dispossessions of the Indigenous people the immigrants colonized. She praised the gringo values of capitalist progress that led to the agribusiness boom, and never considered joining the grassroots associations and organizations protesting agrochemicals, dispossessions or deforestation in

the Chaco region. At face value, then, Marta's lament seems rife with contradiction: she indicts soy for killing the living soil she needs and loves, but her behavior and values as a gringo ex-planter reflect a complacency toward that very agribusiness killer.

Plantation legacies help make sense of these apparent contradictions. In the rest of this section, I describe how the gringo notion of a living soil accommodates both a sorrow at the soy boom's assault on soil life-worlds, as well as an attachment to settler monocrop progress — an attachment so deep that it eclipses a broader critique of agribusiness monocultures on the ground.

Marta's nostalgia for cotton plantation prosperity offers one example of soil's double role as both a site of multispecies loss, and a vector of settler colonial desire. Woven throughout our conversations about soil, Marta described the shards of a shattered social landscape of agrarian settler capitalism. Soy, Marta said, not only kills the soil, but has also replaced the "emporium" of the cotton regime with its bustling gins, mills and textile factories. Along with cotton, it ousted other lucrative monocrops, like sorghum and sunflower that middle or even medium-small farmers like herself had crop-rotated in the past — crops used for food products like sunflower oil that "we [Argentines] can eat." In lethally fumigating the quebracho trees (*Schinopsis*) and their grassy companion species (such as *Elionorus musitcus* and *Spartina argentinensis*), soy also bulldozed the quebracho-based tannin industry — a lucrative basis of capitalist productivity in twentieth century Chaco (Bonifacio 2023). In turn, Marta worried that agrochemical toxicity and lack of pasture had left farmers with "no more animals." This wide-ranging absence spanned insects in the soil, backyard animals like Marta's hens, fish from vanishing or intoxicated streams and wild game from the bushlands — including numerous endangered species (such as peccaries and armadillos) traditionally used as food or medicine by local Chaco peoples (Arias Toledo et al. 2014; Martínez 2013).[11] Marta was preoccupied by the dwindling small-scale cattle industry — also a driver of Chaco deforestation over time — that she feared was now being overtaken by *sojización* (literally, "soyification") and large-scale feedlot cattle farming. Perhaps most mournful of all for Chaco ex-planters like Marta was that "all the people are gone." Political support for settler farmers had been replaced by rural abandonment. Gringo cotton Cooperatives and gins had fallen into postindustrial ruin. The young people had migrated away, leaving the old people to wither in rural towns and hamlets. Manual laborers had been replaced by machines and agrochemicals, eviscerating the conjoined, racialized "work culture" of soils, plants, and people that had "given life to Chaco" (a racialized dimension of soil that I return to later).

Most gringo farmers I spoke to did not evoke explicitly more-than-human ontologies to describe soil vitality (Lyons 2020). Yet their capitalist settler values and plantation nostalgias are bound up in a relational understanding of the soil as a "multispecies community of biota" (Puig de la Bellacasa 2015). Having spent their lives sowing the fields before the arrival of GM agriculture, gringos like Marta developed an intimately tactile, first-hand knowledge of cotton plantation farming that attuned them to the entangled interdependencies of different species, and to the interconnected ways that crops and soils "sense, perceive and respond to their environments" (Myers 2015). Like the soil itself, plantation progress and settler modernity are multispecies relations for many gringos. "Progress" for them does not operate in a linear sphere of teleological thinking outside of multispecies worlds, but rather in and through those worlds. When Marta longs for the living soil of the racialized plantation, she also longs for a soil in vital relation with the grass of the pastures, the *quebracho* trees, and the wider Chaco ecosystem of insect, microbial, animal, and plant life that depends on these relations. In killing the soil, soy has displaced both the cotton plantation colony, and countless relational interspecies entanglements that existed alongside it.

Marta's multispecies attunement to soil worlds is also gendered, in ways that sensitized her to the ecological and embodied fallouts of soy agrochemicals, yet without leading her to politically contest them. Like Amalia Leguizamón (2020) observed in the Argentine Pampa, I found that rural gringo women like Marta in the Argentine Chaco were more likely than their husbands or other male counterparts to draw relational connections between their own species' bodies and those living in the soil. During discreet conversations about soy — particularly when men were not present — some confessed their concern about the human impacts of substances like glyphosate (which GM soy is engineered to tolerate) and the much harsher 2,4-D that is often mixed with glyphosate in Argentina. Cis-gender women in traditional roles, as Leguizamón (2020) notes, have often been socialized into a greater sense of responsibility for the bodies and lives they care for, and in Chaco too, they were more likely to take note of rising birth defects among their children and cancer rates among their family members.

However, while they worried the new generation of biotechnologies might have gone too far, the vast majority did not join movements to regulate the spread of GM agrotoxins in their environs — with the exception of a small handful of rural teachers affected by illegal pesticide drift. In most cases, their plantation heritage had left gringos with a love–hate relationship to pesticides. When asked, gringos like Marta did not hesitate to praise the chemicals that had rid her family's manual cotton plantation of soils plagued with too much of the wrong kind of life for monocrops to thrive. Gringo life and monocrop life were intertwined, insofar as both relied on investments in future yields of gringo *progreso* — competitive agricultural exports in sustainably profitable settler soils, and socially mobile offspring who aspired — often successfully — to form the professional and governing classes in nearby cities.

As the old dream of gringo futurity wanes for those ex-farmers left behind, grief for lost soils, and landscapes

mixes with colonial nostalgia (Rosaldo 1989) for the old certainties of racialized class privilege. This nostalgia is riddled with blindspots about the past that reinforce gringo adherence to the monocultural status quo today. For instance, it was commonplace for gringo interlocutors like Marta to praise the horizontal bonds of their plantation institutions and the meritocratic systems that allowed hard-working farmers get ahead through sacrifice and work culture — traits many of them also associate with gringo soy moguls' success. Meanwhile, the testimonies I gathered about cotton-picking align with archival evidence that twentieth century Chaco plantations were marked by differential pay-scales along colonial lines of evolutionist distinction that not only favored gringo planters, but also compensated locally colonized Indigenous people of hunter-gatherer backgrounds less than "sedentary" Indigenous-descended or mestizo cotton pickers coming from outside Chaco (see also: Bossert 2012). Marta's attachment to the dream of gringo privilege, and her reluctance to acknowledge the colonial inequalities in which her family's plantation was complicit, also blinds her to the dispossessions that new agricultural frontiers have wrought on smallholders, including those in her own community.

Ultimately, what many gringos grieve is not so much the advent of GM agribusiness as the passing of a previous stage of the Plantationocene. Even if she is aggrieved by the death of soil, Marta sees gringo success as a marker of her community's superior aptitude to turn the living soil into more life. Allying with the racialized smallholders who resist monocultures, pesticides and frontier expansion would require Marta to question something fundamental about who she is. Marta may be pained — even poisoned — by the advent of the soy boom, but her plantation dream leaves little room to resist it.

Seeds

> *"Mechanization was just a hoax (*un engaño*) for us small farmers, wasn't it? …The engineers came with their advice, and we believed them […] Better seeds, no more pests, it seemed great […]. Until we discovered how much worse off it [GM technology] was for us [small-farmers] in the long run."* — Emiliano

Emiliano's feelings of betrayal at the hands of GM cotton seeds poses yet another puzzle, to which racialized plantation legacies might offer a clue. Like a living soil, seeds represent the promise of settler progress among my interlocutors: the biblical "parable of the sower," for instance, was often invoked in church meetings, and a common tribute at immigration festivals and commemorations was to praise the European grandparents for "planting the seeds of progress in the virgin soil." Emiliano's accusation, it seemed to me, bitterly disrupted that narrative of progress, which he and some other middle-aged ex-farmers had been reminiscing about with me over yerba matés that afternoon. His choice of words — "*un engaño*" — is suggestive of trickery and cheating. Hadn't the "experts" known small farmers like themselves could not afford to plant GM cotton in the long run? Fooled by this sleight of hand, they soon fell into debt, stopped planting altogether, and had to rent out their patchwork of farmlands to big conglomerates and a few wealthy farmers who increasingly plant GM soy instead of GM cotton.

Despite this, gringos like Emiliano did not critique the agribusiness model or seek alliances with other rural groups it left behind. Instead, for reasons I now turn to, his solidarities landed with farmer movements led by big agribusiness against the state.

The Plantationocene — with its idealization of simplified large-scale monocultures, racialized frontier logics, and fervor for capitalist progress — has shaped gringo settler identities in ways that made them especially liable to believe in the promise of GM seeds. Zero-till farming, as Birgit Müller (2021) notes in a much wealthier settler-colonial context of Canada, has been successfully marketed to farmers around the world as a modernizing project and a "world view." Whether in the Global North or the Global South, settler monocrop farmers are often particularly susceptible to believing in the natural law of market selection, and tend to trust in the science delivered to them by emissaries of successful private corporations.

In Argentina, the campaign to bring GM seeds to cotton farmers like Emiliano was tailored to the ideological profile of these particular settler planters, and to the chain of economic crises they faced in the years leading up to the economic crash of 2000. The introduction of synthetic fabrics and neoliberal agrarian policies in the 1980s and 1990s led to plummeting cotton prices and the breakdown of government protections for farmers. GM farming, which began in the Argentine Pampas in 1996, exploded into Chaco after the market crash of 2000 when poor people's lands became enticingly cheap for agribusiness expansion, with new seeds engineered to tolerate the harsh heat.

It is within this context of agricultural crisis that biotech engineers — the "tricksters" — entered the scene. They came with promises of economic deliverance through "pioneering" agriculture at the "frontiers" of biotechnology — notions that deeply resonated with gringos' self-image as capitalist nation-builders in the wilderness. They spoke of "progress" as an efficient economy of scale. Among my interlocutors, *progreso* is variously understood as the domestication of nature through farming, accumulation of capital, moral betterment through sacrifice, agro-technological advancement, and the markers of social mobility among their offspring — such as educational degrees, travels abroad, urban living, and white-collar professionalism. The engineers mirrored those settler values and aspirations: they were urbanites decorated with scientific titles and authoritative technological knowledge, yet they presented themselves charmingly as fellow gringo agriculturalists descended from European immigrant family farmers. The brochures they brought with them glistened with enticing figures,

colorful graphs and lustrous images of weed-free fields that appealed to the gringos' plantation desires and market-crash anxieties alike.

One less-discussed feature of the Plantationocene is the way it often perpetuates an addictive cycle of desire for an expansive sense of control and order among Global South farmers themselves. My interlocutors believed the "technological package" of GM seeds and herbicides would restore their control over the chaos that kept them up at night: unstable cotton prices, deregulated agrarian state protections, increasingly erratic fluctuations in climate conditions (resulting from intensified deforestation), and the "feral proliferation" (Tsing, Mathews, and Bubandt 2019) of inconvenient nonhuman others that adapt to, and thrive in, monocrop fields (Beilin and Suryanarayanan 2017). Instead of regaining control, many small and middle scale Chaco famers found themselves locked into a system that controlled them. GM seeds, chemicals and fertilizers gave Chaco planters the fields of their dreams in the short run, only to drive them into debt down the line as the cost of increasing herbicide applications and expensive machinery exceeded their profit margins. In a spiral reminiscent of better-known GM cotton hubs of the Global South, like India (Flachs and Stone 2019), most of these Chaco planters were priced out of cotton farming altogether by foreign-owned conglomerates. In hindsight, Emiliano sees the engineers' promise of control as an engineered illusion, an "engaño." Nevertheless, he does not blame the agribusiness message for the trickery of its messengers. Instead, as I shall now show, he blames the racialized poor.

Racialized settler identities have not figured prominently in studies of contemporary Argentine farming politics, yet I believe they are central to understanding why many gringo farmers priced out of — or intoxicated by — GM agriculture, have nevertheless acquiesced to the model that marginalized them. The politics of this acceptance came dramatically to public attention in the wake of "*el conflicto del campo*" — the state's conflict with "the countryside" that arose in 2008. On the surface, this does not look like a racialized affair, but a rural–urban divide that superseded class and historical differences. The conflict began after the Ministry of the Economy, under the Peronist presidency of Cristina Kirchner (2008–2015), announced a hike in export taxes on soybean commodities from 35% to 44%. In response, four major agrarian organizations from across a spectrum of political and economic orientations came together to block the measure. These organizations included the *Sociedad Rural* — representing a powerful elite of the richest agrarian landowners and lobbyists for agribusiness — as well as its traditional archenemy, the *Federación Agraria Argentina*, which represents small and medium scale farmers like Emiliano. The alliance was striking, given that the *Sociedad Rural* had persecuted gringo small farmer resistance during the last military dictatorship (1976–1983)[12] and forged policies to radically deregulate farmer protections. This erosion of protections hit gringo small farmers hard in an economically and ecologically volatile climate, and many still mourn the privatization of their cotton gins and farming cooperatives which, as one former gin manager put it with tears in his eyes, held the memory of their parents and grandparents in its now-disintegrated structures.

Despite these cleavages, racialized plantation legacies have exercised a forceful influence on gringo affects and subjectivities, making them susceptible to bonds of allegiance with the very groups that harmed them. Biotechnology corporations are adept rallying farmer identities in very different parts of the world as "under attack" (Müller 2021) — whether by the state, or by unwanted guests and pests of various species. In the Argentine Chaco, gringo ex-planters who had been priced out of small or medium scale cotton farming nevertheless shared the sentiments and solidarities of their wealthier gringo counterparts across the country who had orchestrated El Campo–that is to say, descendants of those who had once benefitted from fiscal land distribution policies directed at European settlers. They regarded the high export tariffs on soybean products as part of an "anticolono" intervention on the part of the state, targeting them as a group. In other words, the force of racialized plantation identities was so strong that even impoverished small-scale ex-planters identified more with rich land-owning gringos of wealthier provinces than with nongringo subsistence farming peasant or *campesino* populations of their own region who, like themselves, were dispossessed by large-scale agribusiness.

Many ex-planters were especially disgruntled to see the previous racialized hierarchies of labor shaken in the wake of these "anticolono" measures. They would often complain to each other, and to me, that the Kirchner government's soy tax was funding cash transfers to the poor or unemployed (a measure known as the *Fondo Soja Solidaria*). They felt it attacked gringo work culture by punishing "those who work" — that is to say, gringo farmers — for the sake of "those who do not work," the criollo and Indigenous poor. However, when probed about the jobs these populations had eschewed, the examples many gringos offered were rooted in fantasies about plantation divisions of labor. Some noted, for instance, that since the cash transfers required all children to attend school, the labor of children or youth was no longer available to gringos, while adults were no longer willing to do low paid temporary work ("*changas*") that would disqualify them for poverty relief without offering them equivalent benefits. As one gringo put it:

> Nowadays they run around with cellphones or mopeds, and complain that they're poor or that their lands were stolen. But it's they who choose not to work. It's impossible to get a *changuero* (informal temporary worker) to fix this or that, or clean the house. No one wants to work anymore. That is the lack of work culture.

On the other hand, most Indigenous Qom and criollo ex-pickers I spoke to welcomed measures such as the *Asignación Universal por Hijo* (a monthly sum per child of poor families)

as a necessary — if insufficient — aid in a time of widespread resource extraction, joblessness, and rapid depletion of bushland economies.[13]

In this light, the gringos' sense of betrayal is directed at their ex-pickers, whom they scapegoat for the loss of "work culture" that impacts all of rural Chaco, including gringos themselves. Albeit with racialized structural differences intact, both ex-pickers and ex-planters find themselves living off of the soy that is encroaching on their forests and fields, upending previous ways of life. While some line up to "wait" for cash transfers that keep them just above the poverty line (Auyero 2012) in an ongoing colonial occupation, the others lease out stolen lands they got for free and no longer plant in, to soy conglomerates who will destroy their soils.

Roses

"The wilderness and the dry land shall be glad; and the desert shall rejoice, and blossom as the rose." – Isaiah 35:1

"*Why bother planting roses if they rip them away? This is the lack of belonging […] to a place. The soil that I adore, that I love."* – José

When José talked to me longingly about potted roses in 2013, we were in the midst of one of the Gran Chaco's worst droughts in a century. José's town, in the north of Chaco Province, had been struck with a particular virulence. Ageing ranchers and planters wept at the loss of cattle and crops. Yet for José, absent rainfall was not the point. The point, for José, was that the roses were gone.

A middle-aged gringo barber, José had never planted cotton himself but had spent his childhood on his parents' plantation, and wrote lyrical pamphlets about cotton times that were popular among immigrant associations in the area. Our conversation had turned from cotton to roses at what struck me as an odd interval. We were talking about his grandparents' strong sense of belonging and community in plantation times, and how that world was slipping fast out of reach. Roses were for José the focal point in this story of downturn, characterized not by climatic upheavals, but by an onslaught of racialized others into the town. He spoke with a sense of injury about the suspected rose thieves: unemployed Indigenous and criollo people, living on state welfare, with no sense of belonging to the town. Listening to José, it was as though the rose vandals had uprooted his very person: the former pickers had plucked the flowers — and settler belonging itself — right out of their pots.

A passion for roses might have sensitized someone like José to the desertifying conditions that make thirsty flower gardens unthinkable in drought-afflicted Chaco. It might have led him to worry about the forests disintegrating all around him in the wake of the soy boom, or to wonder how many other species — domesticated or not — are in danger. He might have condemned the soy boom itself for stealing away the plant-life he loves. Yet, like Marta and Emiliano, José's plant affections and afflictions do not result in contestation against the agribusiness model.

To explore why, in the rest of this final section, I trace the mechanisms of José's colonial nostalgia for roses under the looming shadow of the Plantationocene. José's nostalgia sheds light on similar forms of garden-based identities and longings I noticed in the Chaco that act as vectors of racialized colonial thinking, while deflecting attention from the impacts of monocultures and agribusiness. Colonial nostalgia, like ecological nostalgia (Angé and Berliner 2021), is built on layers of disavowal wherein "people mourn the passing of what they themselves have destroyed" (Rosaldo 1989, 108). Just as ecological nostalgia often silences histories of environmental racism, colonial nostalgia for plantation times serves to make colonialism's structures of "racial domination seem innocent and pure" (Rosaldo ibid: 107; see also Ogden 2021). As José's case demonstrates well, this disavowal in Chaco often manifests not only in the longing for an innocent past, but also in a racialized scapegoating of colonized people in the present.

José's attachment to roses reflects a common set of plant-relations among my interlocutors. Throughout the former cotton belt — especially before the 2013 drought — gringo families I spoke or lived with would often point to their past or present flower gardens as a mirror of their values and identities as *colonos*, or settler farmers. For those home-gardeners who still farmed, verdant windowsills or patio gardens were an expression of ongoing productivity and a well-tended domestic life. For the greater number who had ceased farming, flowers were often all that remained of their family's agricultural activity after permanently moving away from the countryside. Thus even if it was merely cosmetic, a flower garden represented something central to them about who they were.

Some home gardeners described their plant-relations in settler colonial idioms that pushed the limits of metaphor. Roses are locally imagined as European flowers that stand in contrast to the desert wilderness of Chaco before colonization. Echoing a common refrain among gringos in Chaco, one home-gardener said flowers like roses were a reminder of gringos' ancestral capacity as "frontier settlers" (*colonos pioneros*) to "stake the teeth of the plow in the virgin soil." That is to say, their capacity to plant something, both literally and figuratively, where before there was "nothing."

Garden ethnographers from England to Mozambique have cautioned against an overly metaphorical understanding of the way gardeners engage plant-life (Archambault 2016; Degnen 2009). People and plants "serve as interpretants of one another" for gardeners, and thus their plant relations are never merely metaphorical or mechanistic, but entail the "writing of social relations, memory, experience, and personal history onto individual plants and gardens" (Degnen 2009, 163). For gringo gardeners in Chaco, planting flowers is not just a metaphor for agricultural colonization, but an embodied

social ritual of settler world-making in the postplantation era. In linking gardening to the myth of founding in "virgin" soil, my interlocutor evokes a commemorative practice of belonging grounded in the negation of Indigenous primacy on the land.

This is why, for José, a rose is more than just a rose. For him, colorful potted flowers, and delicate roses in particular, act in the social world of gringos by fostering a "sense of belonging" (*sentido de pertenencia*) to the town. A rose garden, made visible on the patio or in pots on the windowsills, is a socially embedded practice. Put on display, gardens are an esthetic, public expression of private "work culture" for many gringos in Chaco. They are an interface between the private and public spheres — a chance to publicly represent the private individual's domestication of nature. One plants a garden to see and be seen, and when many neighbors do so, an aggregate or collective sense of belonging is fortified in the town at large. Roses are especially apt at fostering public displays of belonging because they appear fragile, and in fact require careful tending, as well as scarce resources such as water and soils not native to Chaco. This esthetic of care is central to the potted-garden's civic function. As José put it:

> We would plant [the roses] knowing people would look on and admire them… We need to feel this sense of belonging: that I take care of my house and the others take care of theirs, and all of us say: "what a beautiful town, how nice it is to be here."

As with many other horticultural expressions of belonging and work culture in the cotton belt towns I visited, this one performed a racialized ranking of class status for my gringo interlocutors. And not just because gardening represented property, leisure time, and the material resources for ornamental "care." When speaking of gardens, my gringo interlocutors would often point out that Indigenous and criollo homes had no flowers in the verandas. Flower gardens are a "gringo thing," they would tell me. When asking them why, I expected stories about immigrant cultural traditions transplanted from Europe to the Americas. The answers I got, however, were often firmly rooted in the local plantation logics that ordered racialized labor hierarchies in the cotton fields. Some evoked the differing capacities for sedentary agriculture across distinct stages of development represented by *gringos*, *criollos* and *aborígenes*. "You have to understand, our Indians here are not the Aztecs." Or: "They don't know how to work, they never made it to agriculture." And "they were still in the Stone Age when we got here — if it weren't for us they'd still be running about in feathers and arrows." The creoles, meanwhile, were explicitly assessed as a midway stage between Indigenous people and Europeans by many gringos: they "carry agriculture in their blood," one gringo told me, "and they like to garden too, but only what they need to live." Once they've eaten, he added disapprovingly, they "prefer to sit around and play the guitar." Vegetables and fruit trees aside, an absence of *flowers* in the patios indicated a deeper lack of vision, capitalist accumulation, and work ethic that many gringos evoked about their plantation laborers. Gringos knew that planting ornamental flowers in their windows or patios was more an esthetic pastime than a transplanted mode of agricultural production. Nevertheless, it was a *civilized* esthetic.

José's drought-afflicted town was not a good place for a rose to thrive, however. Though agribusiness representatives deflected responsibility for the 2013 drought, a number of agronomists from the town's INTA chapter (National Agricultural Technology Institute) as well as local residents informed me that big foreign-owned conglomerates were funneling water from already drier and poorer areas like this one to soy fields near other towns further south, through accords made with the government. They added that the acceleration of agribusiness-driven deforestation had heightened scorching heat waves and the frequency of wild fires and dust storms (see also Baumann et al. 2022). In town, agribusiness development had replaced dirt paths with paved roads, and trees had been felled in the process, heating up the environs further. What was left of the town's lagoon and swamps had now entirely dried up. The strain on water infrastructure was heightened by an exponential growth of the town's population, which nearly doubled after intensive mechanization massively cut rural jobs between 1991 and 2001, and increased steadily ever since like most large towns in Chaco Province (INDEC 2010) — a paradoxically rural peri-urban sprawl that reflects what Monika Krause (2013) dubbed the "ruralization of the world." With water so scarce and demographics rising, rose gardens became something of a costly effort to maintain even for middle classes, and even before that year's drought. A wealthy doctor I knew kept his lush flower garden visible, but tantalizingly locked behind a high iron gate, which passersby would sometimes comment upon admiringly or reproachfully during the drought. Others kept less controversial cacti and succulents discretely tucked into backyards or close to the ground behind patio fences guarded by dogs. Evidently one still felt pressure to plant something, yet planting too much or the wrong things was a public display of avarice.

While José was aware of the droughts plaguing his area, he nevertheless viewed the demise of the rose garden as a sign of moral and political decay, having less to do with agribusiness than with an influx of "too many" Indigenous people and creole peasants into the town. As Gastón Gordillo (2016) has noted, modes of racialization in what he terms "White Argentina" have often manifested spatially, wherein people of European immigrant descent fear being surrounded and overtaken by a "savage outside" composed by people of visibly Indigenous descent. Even in the big cities, this fear harkens back to a settler colonial frontier imaginary of *el malón*, referring to the historic raids by militarily autonomous Indigenous people on horseback defending their territory against European settlers after Argentina's nation-state formation, and sometimes vandalizing or stealing settlers' cattle (Gordillo 2016). In peri-rural Chaco towns, this spatial imaginary of Indigenous influx into domesticated gringo space was common, but often took on agricultural idioms or referents. This is indeed the case for José's complaints about rose thieves

and vandals who, in capturing gringos' domestic flowers, parasitically attack settler belonging to the town:

> Before you could have roses in your garden! […] But now, all these people came from outside. When you plant flowers in the front yard, they'll pass by and yank them right out. Just to do some damage. So we've tired of it. We'll say, why bother planting roses if they rip them away? This is the lack of belonging. The lack of belonging to a place. The soil that I adore, that I love.

In our conversations, José described this demographic of so-called "outsiders" like the feral proliferation of weeds or pests in a monocrop field (Beilin and Suryanarayanan 2017; Tsing, Mathews, and Bubandt 2019) — a species that was once useful had mutated, grown out of control, and parasitically consumed the gardens of settler belonging. José echoed many other interlocutors when he complained that the vandals grew exponentially in slums on the outskirts of town ("like lice," another gringo added) sapping "work culture" by living on cash transfers paid for by gringos. He was nostalgic for his prior relations with this population, whom he insists he had "very much liked" in plantation times when they worked for his family in an efficient orderly manner ("like slaves," many Indigenous Qom ex-pickers have noted) and contributed to the settler economy's progress. Now, they were doing the opposite. Figuratively, they were eroding a public sense of work culture, order, and the town's "pulchritude" — as José termed it — and by extension, a sense of collective care and belonging. They did so (literally) by assaulting the flower pots of people like José, to the point where roses — and belonging — had begun to rot from within:

> Ever since [the *aborígenes* came in], work culture is being lost… Now the common citizens too have abandoned themselves. [..]It's gotten to the point that even the *gringos* have been infected by its contagion (*se contagiaron*). […] We need to feel this sense of belonging: that I take care of my house and the others take care of theirs, and all of us say: "what a beautiful town, how nice it is to be here." Today, the lack of belonging is in everyone! This is the problem. I'd like to feel proud of my place here, of my hometown. But I don't. I feel shame. This is no longer my town.

After evoking his "love for the soil," José comes to reveal that the worst of his fears has materialized. What seems to be a malaise of less civilized vandals has infected his own gringo heart.

Conclusions

The cases of Marta, Emiliano, and José illustrate some of the affective and multispecies mechanisms of the Plantationocene in the agribusiness frontiers of the Argentine Chaco. Building on the ethnobiology of gringo plant attachments, and on my long-term fieldwork in the region, I have explored why these three gringos and their communities do not resist the soy boom and GM agriculture, even though they grieve the plant-worlds that have been sacrificed to the socio-ecological devastations of this agribusiness model. I have suggested that their deep attachment to racialized plantation logics — and to their historic and ongoing position of settler privilege within that system — overdetermines their capacity to forge alliances across racialized class distinctions. Thus, while their multispecies love and loss sensitizes them to the ecological fallouts of the soy boom, their in-group loyalties to "White Argentina" (Gordillo 2016) ultimately helps bolster that agribusiness model.

Methodologically, these plantation logics are particularly salient to observe at ethnographic sites of multispecies loss, since it is here that the tensions between ecological critique and racialized affect come to the fore. When Marta grieves a dying soil at the hands of GM soy, she also grieves the lost cotton plantations she associates with settler futures. Thus, her longing for multispecies soils is also an affective investment in the gringo monocultural model of extractive, agrochemically intense farming that links the two crops across very distinct times and scales of production. Emiliano resents how his class of small gringo producers was priced out of cotton farming by agribusiness elites who "tricked" them into buying GM seeds they could not afford. Like Marta, however, he does not ally with campesino and Indigenous smallholder movements, but with the very gringo-led agrarian elites who defend soy farming against the state. José loves and longs for rose gardens of the past at a time of escalating drought, and feels his sense of identity and belonging is bound up in their uncertain fate. Yet it is Indigenous rose vandals, rather than desertification, that animate his fear, stirring biopolitical fantasies of pest control against the Native people he sees as invaders.

Taken together, these three portraits lend insight into the workings of the Plantationocene, and help us appreciate the concept's value for ethnographic, ethnobiological, and multispecies research. While the Plantationocene is wrought through large scale technologies of biopower, it also unfolds in the seemingly minute affective attachments that arise in people's engagement with dying soils, dried up gardens, and lost seeds. If plantations generate the conditions of their own reproduction, the Plantationocene highlights the structural centrality of racialization to that unfolding process in time and place (Carney 2021; McKittrick 2011). As an analytic, it helps us trace how older plantation biopolitics — such as the policing of racialized labor hierarchies and the control of crops through pesticides — are transposed onto people and plants imagined as invasive and feral in the towns near agribusiness frontiers (Chao 2022). Ethnographically, a focus on "plots" (Wynter 1971), on garden "love" (Archambault 2016) and on "patchy" sites of multispecies relations (Tsing, Mathews, and Bubandt 2019) helps us gain a more intimate and storied foothold into the particular ways these Plantationocene logics are reproduced on the ground. In turn, this intimacy lends insight into more macro dynamics of agricultural biotechnology expansion that characterizes the Plantationocene today.

While agribusiness is a strikingly global and standardized affair, the environmental racism that sustains it is not uniform. The three

figures I have presented here highlight the importance of considering local agrarian and national historicities, contingencies and subjectivities in analyzing how plantation afterlives take particular forms. For example, just across the border in Paraguay, the demographics and histories of campesino struggles around soy look quite different, such that Kregg Hetherington found it more helpful to focus on the biopolitics of soy governance — what he calls "agribiopolitics" — than on the racialized labor regimes emphasized by the concept of the Plantationocene (Hetherington 2020, fn. 38). By contrast, I have argued that Argentina's settler colonial state formation as a European *crisol* (melting pot) on Indigenous lands, and its racialized agrarian structures in gringo monocultural fields, make the Plantationocene an especially generative frame for analyzing the country's GM soy frontiers, particularly in a historic cash crop region like the Chaco. I believe it may also offer a useful analytic tool for future ethnographies of agrarian affects and politics in Argentina following the recent election of right-wing populist President Javier Milei, whose proposals to eliminate agricultural taxes on soy and social services to the poor are popular among many gringos at the time of this writing (see fn. 5). Analyses of agribusiness in the Plantationocene are most helpful when they allow us to draw links between structural plantation logics at large, and the local and affective contingencies of their unfolding.

While these three stories reflect the specificities of a fallen settler middle class in a Global South soybean frontier, they also hold a stark mirror to many other societies in the unfolding climate crisis, who remain attached to the very food systems that imperil us. The Plantationocene is fueled by the "cruel optimism" of everyday actors — Lauren Berlant's (2011) term for the paradoxically hopeful desires we invest in status quo behaviors that cause us harm (Blickstein 2024). Deforestation, dispossession, biodiversity loss, soil-degradation, agro-toxicity, and job-loss rates may look alarmingly clear from the bird's eye view of satellite data maps or the statistics of NGOs (Baumann et al. 2022), but for those living inside the multispecies worlds of those numbers and maps on the ground, they may not feel so clear-cut, even in the throes of immense loss.

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Notes

1. The Argentine Chaco is part of the greater Gran Chaco ecoregion, which stretches over a million square kilometers across Argentina, Paraguay, Bolivia, and the Mato Grosso. The second largest biome in South America after the Amazon basin, the Gran Chaco contains one of the world's largest remaining continuous tropical dry forests, more than half of which is in Argentina (spanning 489,000 km^2). Over 19.3 hectares of Argentina's Chaco forests have been lost to agribusiness since 1985, with a significant spike since the COVID-19 pandemic (Baumann et al. 2022).
2. *Gringo* is an emic category with which my interlocutors of twentieth century European immigrant descent self-identified, and which they used to distinguish themselves from *criollos* (rural populations of mixed, or *mestizo*, ancestry), often in explicitly racialized terms of class distinction. This nomenclature is not fixed or homogenous across the region, and the term *criollo* is often used by Indigenous peoples to designate all classes of non-Indigenous people as *blancos* (whites) or settlers, thus treating *gringos* as a subcategory of *criollos*.
3. Agribusiness pushes into xerophytic forests, open woodlands, scrubs, savannas, and grasslands. It has reduced the number of "quebracho" trees, a species of the generum *Schinopsis* that includes *S. balansae* ("Quebracho colorado chaqueño"), *S. quebracho-colorado* ("Quebracho colorado"), and *S. hankeana* ("Horco quebracho"). Other affected tree species include *Barnesia sarmentoi* ("Palo santo"), *Aspidosperma quebracho blanco* ("Quebracho blanco"), and *Prosopis* spp. ("Algarrobo"). Also affected are shrubs (*Acacia*, *Mimosa*, *Prosopis*, and *Celtis*), cacti (*Opuntia* and *Cereus*), grasses (*Elionorus musitcus* and *Spartina argentinensis*), and palm species (*Copernica alba*). Indigenous uses and knowledge of this plant-life are accordingly impacted (see: Arenas and Scarpa 2007; Arias Toledo, Colantonio, and Galetto 2007; Arias Toledo et al. 2014).
4. In Brazil, India, and South Africa, for instance, farmers have formed broad-based social movements against GM agribusiness (Scoones 2008).
5. The interviews used for this essay were collected prior to the Presidential election of Javier Milei on November 19, 2023. See my conclusion for a brief outlook on this issue.
6. A nation-building war of Indigenous extermination and dispossession in the Argentine National Territories, which began in 1879 in Patagonia under General Julio Roca, and extended into the early twentieth century in the interior regions of the Chaco area, albeit in a less systematic manner.
7. Such as Ley 817 and Ley 5559.
8. The two groups were not dispossessed and racialized in equivalent ways: Indigenous Chaco nations such as the Qom (Toba), Wichí (Mataco), and Moqoit (Mocoví) — who were considered militarily autonomous *naciones* under Spanish rule — were dispossessed by the Argentine state and made to work on their own homelands. Criollo workers mostly migrated from neighboring regions that had previously been colonized and incorporated by the Spanish, and though many have mixed Indigenous ancestry (e.g. Guaraní, Quechua), most do not identify as Indigenous.
9. A campesino base of criollo and some Indigenous farmers formed in the 1950s when the first wave of Peronism distributed plots of about 50 hectares (half the size of those accorded to gringos decades earlier via Ley 817 and Ley 5559), however this was not enough to shake the racialized class system that was already in place. Older land tenure schemas favoring

gringos ultimately prevailed, many of which persist via the land tenure criteria of the Province's Instituto de Colonización.

10. Haraway (2015, fn. 5) originally defined the Plantationocene as "the devastating transformation of diverse kinds of human-tended farms, pastures, and forests into extractive and enclosed plantations, relying on slave labor and other forms of exploited, alienated, and usually spatially transported labor"; a process that continues with "the rapid displacement and reformulation of germ plasm, genomes, cuttings, and all other names and forms of part organisms and of deracinated plants, animals, and people."
11. Endangered armadillos (locally called "Tatús") include *Tolypeutes matacus* and *Priodontes maximus.* Endangered peccaries include *Catagonus wagneri*, *Pecari tajacu*, and *Tayassu pecari* (see: SAREM https://cma.sarem.org.ar/es). On endangered bird species (e.g. *Hylatomus schulzii* and *Amazona aestiva*) see: https://datazone.birdlife.org.
12. Some gringo cotton planters I interviewed were members of the *Federación Agraria* who joined small-farmers' "agrarian leagues" in Chaco Province to resist agribusiness dispossessions during the 1976–1983 military dictatorship (Roze 1992) — yet based on my findings, these were gringo-exclusive groups that did not welcome the criollo subsistence farmers who were also persecuted.
13. Various scholarly, NGO and UNICEF reports attest to this measure's positive impact on Indigenous quality of life (see Biocca 2017).

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