Disjointed Times in "Climate-Smart" Amazonia

DAVID ROJAS
Latin American Studies Program, Bucknell University, USA

Abstract What does it mean to resort to neoliberal environmental approaches to heal the socio-ecological devastation wrought by fascistic forces? In Brazil extremist right-wing efforts to impose sovereign state rule over Amazonia have resulted in rampant deforestation, violence against forest peoples, and a catastrophic COVID-19 pandemic. Some environmentalists suggest that escaping such devastation means returning to previous neoliberal policies such as "climate-smart agriculture" (CSA) that were promoted as a way to open a future of endless economic expansion and forest preservation. Rejecting the choice between fascistic and neoliberal environmental approaches, this article examines the future-oriented work of Amazonian environmentalists who grapple with "disjointed times" in which economic and ecological trends resist harmonization. Attentive to multispecies and multi-temporal dynamics, they suggest ways to avoid a temporal trap wherein the catastrophic failure of anthropocentric future-making projects always calls for yet another anthropocentric future-making project.

Keywords multi-species, time, climate change, neoliberalism, fascism, agriculture, Amazonia

Brazilian president Jair Bolsonaro (2019–present) has undermined neoliberal environmental programs in Amazonia that since the 1990s promoted the expansion of "smart" agro-industrial operations that were touted as capable of producing, besides rural commodities, "environmental services" such as forest protection. Bolsonaro has instead revived a force-based rural development approach previously advanced by the military dictatorship that ruled the country between 1964 and 1985; its main goal is to support landholders who occupy and claim dominium over Amazonian territories, resorting to force if they deem it necesary.[1]

The results have been devastating: a disproportionately large number of deaths among Amazonian peoples due to COVID-19; deforestation in the region reaching more than 13,000 square kilometers between August 2020 and July 2021 (a fifteen-year high);

1. Schmink and Wood, *Contested Frontiers*; Rodrigues and Kalil, "Military-Green Biopolitics."

Environmental Humanities 14:2 (July 2022)
DOI 10.1215/22011919-9712401

and a growing number of land conflicts and attacks on Indigenous territories, resulting in at least forty-one Brazilian environmental defenders killed in the two years following Bolsonaro's electoral victory—with most of these deaths taking place in Amazonia.[2] As Brazilian philosopher Vladimir Safatle has shown, Bolsonaro's supporters often celebrate this violence under the characteristically fascist argument that death and destruction are needed to push aside the things and people who stand in the way of future national greatness.[3]

In this context some environmentalists advocate for a return to pre-Bolsonaro neoliberal environmental policies. For instance, just in time for the 2021 global climate summit in Glasgow, a group of environmentalists published in *Nature Climate Change* an article showing that Bolsonaro's rural development agenda in Amazonia could destroy some of the ecological conditions that make agropastoral operations viable in the region.[4] An alternative future, the authors suggested, could be attained through "climate-smart" efforts that would incentivize agribusiness to support, besides their colossal monoculture plantations, some remaining forests that could help preserve somewhat-stable ecological conditions. The proposal would revive climate-smart agriculture (CSA) programs in Amazonia that famously helped landholders invest in high-yield monoculture plantations between 2004 and 2014 that resulted in doubling soybean production while deforestation rates dropped by more than 70 percent.[5]

Drawing on those figures CSA advocates claim that fundamental ecological problems can be managed by helping agribusiness shape the flows of water and nutrients on which industrial agriculture relies.[6] The idea is to expand capitalist operations so that they arrange matter and space across whole regions in ways that would make it possible not only to produce rural commodities today but also to shape how the present begets new climate-agriculture futures.[7]

The problems of relying on capitalist, profit-oriented socio-ecological assemblages to create new futures are well documented. Their short-term, profit-oriented focus fails to grapple with the nonproductive, deep temporality of processes such as decomposition and soil formation, which are advanced by myriad nonhuman beings whose behaviors and relationships are recalcitrant to human mastery.[8] Thus, notwithstanding the lower deforestation rates achieved under recent CSA programs, Amazonian agro-industry has

2. Global Witness, *Last Line of Defense*; Ennes, "Land Conflicts in Brazil."

3. Safatle, "Beyond the Necropolitics Principle"; Rapozo, "Necropolitics." It should be noted that, unlike twentieth-century fascism, Bolsonaro's does not rely on totalizing party structures that mobilize the masses around collectivist agendas. Like other contemporary fascist movements his is a deeply individualistic and anti-party political affair; see Finchelstein, *From Fascism to Populism*; Traverso, *New Faces of Fascism*.

4. Rattis et al., "Climatic Limit for Agriculture."

5. CONAB *Portal de informações agropecuárias*; Garrett et al., "Forests and Sustainable Development."

6. Adam, *Timescapes of Modernity*; Taylor, "Climate-Smart Agriculture."

7. Anand, Gupta, and Appel, *Promise of Infrastructure*.

8. Irvine, *Anthropology of Deep Time*; Lyons, *Vital Decomposition*; Puig de la Bellacasa, *Matters of Care*.

always been implicated in soil depletion, chemical pollution, global warming, disruption in rainfall patterns, and a host of social problems.[9] Rather than a new time of healing from the devastation wrought by fascist efforts in Amazonia, a return to CSA would open a temporal trap that, as Nikolai Ssorin-Chaikov has suggested, is created when efforts to open new futures result in recursive destruction.[10] The question thus arises: how can we respond to fascist devastation without falling into looping cycles of neoliberal destruction?

I grapple with this question while working with people in Amazonia who, foregoing self-defeating hopes in tightly ordered, human-managed futures that would bind them to protracted destruction, strive to find promise within disjointed times that are set to remain.[11] Some authors, myself included, explore disjointed temporal engagements of this kind alongside marginalized groups such as peasants, artists, or Indigenous peoples.[12] In this article, however, I look into the situated practices of high-level nongovernmental organization (NGO) staff who are involved in CSA programs but whose words and actions in Amazonia are not guided by a belief in capitalist operations' bringing multiple socio-ecological trends within a unified socio-ecological order. From my interlocutors, I suggest, we not only learn the despairing story that neoliberal environmentalism offers no meaningful alternative to fascist devastation but also come to understand how encounters with myriad nonhumans shape the ways NGO staff think, talk about, and engage with socio-ecological destruction as a multi-species affair beyond human mastery.[13] Their words and deeds challenge us to consider that, in the midst of climatic devastation, caring for multi-species relations entails not only building non-totalizing ecological assemblages but also grappling with a disjointed multiplicity of temporal trends that resist unification.[14]

A Disjointed Ethnographic Present

I learned from people such as Margaret[15] how high-level NGO staff who are involved in CSA efforts are not committed to building the anthropocentric socio-ecological orders that their own institutions seem to promote. She is a scientist who, before joining a research team connected to a CSA program in the agro-industrial soybean town of Tanupá in southern Amazonia, had decades of policy-oriented research projects to her name. Over the course of many conversations, most of which we had right in the middle of Tanupá's colossal monoculture plantations, she consistently undermined anthropocentric policy narratives that depict futures in which humans would manage the climate as

9. Ioris, *Agribusiness*; Rojas, Olival, and Olival, "Despairing Hopes."

10. Ssorin-Chaikov, *Two Lenins*.

11. Berlant, *Cruel Optimism*; Derrida, *Specters of Marx*; Gordillo, *Rubble*.

12. Lyons, *Vital Decomposition*; Nixon, *Slow Violence*; Haraway, *Staying with the Trouble*; Rojas, Olival, and Olival, "Despairing Hopes."

13. Van Dooren and Rose, "Lively Ethnography."

14. Kirksey, *Emergent Ecologies*; Tsing, *Mushroom*.

15. The names of all persons and places included in this article are pseudonyms.

a factor of agricultural production. Instead her stories depicted agro-industrial Amazonia as a brief moment within a long history that began tens of thousands of years ago. She would tell stories of fish predators consuming their catch on drylands, bacteria decomposing fish carcasses into soils that thus became nutrient rich, trees growing out of these soils, and humans reaching Amazonia thousands of years ago and finding sustenance on said trees and soils—which humans in turn modified over hundreds of years of living in the area.

Margaret's storytelling was informed by a kind of multi-species attentiveness that colored her understanding not only of rivers, trees, and fish but also of rural development efforts advanced in Amazonia since the 1960s.[16] She recounted how the mass-scale monocultures that began to expand since that time in the region had replaced hundreds of thousands of hectares of forests in which each large tree had once released into the atmosphere water vapor as a metabolic by-product on the order of 1,000 liters each day. By replacing colossal beings that maintained a humid atmosphere, preventing their regrowth, and releasing much less water into the air, grasses and crops were actively creating increasingly dry futures in Amazonia that would be fundamentally different from the times in which countless species had sustained one another over millennia.[17]

Margaret's stories about the future-making work carried out by Amazonian plants, animals, and humans bring to mind what Laura Bear calls "labor in/of time": ideas and practices that engage with "rhythms, representations, and technologies of time in a coordination of human action toward their temporal unification."[18] In Bear's analysis labor in/of time serves to denote the human efforts whereby persons and groups render legible complex temporal trends and take action to weave them together, so as to compose totalizing, human-shaped spatiotemporal orders. For instance, both fascist politicians and their neoliberal critics engage labor in/of time when they strive to promote agro-industrial expansion and integrate disparate occurrences such as seasons, agribusiness harvests, rain-drought cycles, and capital investment cycles.

Margaret's insights undermine such anthropocentric notions and invite us to advance Bear's insights so as to consider "labor in/of *disjointed* times": situated ideas and practices that grapple with multi-species relationships which create multiple trends that do not add to a single, discernible temporal arc. Crucially, concerned with how nonhumans' world-making capacities open up new futures, the study of disjointed temporal labor does *not* require us to flatten our approach to humans and nonhumans so as to better catalog multiple modes of existence.[19] Rather, it is about recognizing the situated

16. Van Dooren, Kirksey, and Münster. "Multispecies Studies."

17. Kawa, *Amazonia in the Anthropocene*.

18. Ernwein, Ginn, and Palmer, *Work That Plants Do*; Bear, "Doubt, Conflict, Mediation"; Bear, *Navigating Austerity*.

19. Kohn, *How Forests Think*; Kirksey and Helmreich, "Emergence of Multispecies Ethnography"; Latour, *Inquiry into Modes of Existence*.

vibrancy of human-nonhuman engagements whose world-making outcomes involve co-flourishing as well as vulnerability, violence, and death.[20]

Besides Margaret, I learned about disjointed labor in/of time from ninety-one other policy-oriented scientists I met between 2009 and 2018. My interlocutors were employed by—or collaborated with—four major Amazon-based Brazilian NGOs that are often described as "socio-environmental" institutions because of their interventions in both social and environmental policy debates.[21] Since their creation in the 1990s these NGOs have been staffed for the most part by natural scientists who have lived for extended periods in Amazonia, carrying out long-term scientific research projects whose results are consistently published in high-impact peer-reviewed scientific journals.[22]

One significant challenge in studying Margaret's and her colleagues' disjointed temporal labor is that they take part in CSA undertakings, in apparent contradiction with their driving ethos. This results in a certain duality of discourse. In places such as Tanupá, Margaret and her colleagues speak extensively about disjointed multi-temporal conditions—not so at United Nations climate summits, national climate policy conferences, and large scientific gatherings where they addressed representatives of national governments and agribusiness corporations that control access to significant political and economic resources.[23] In front of such audiences they strategically spoke as if convinced that agro-industrial tools could allow humans to create a harmonious climate-agriculture future. Yet my interlocutors were most enthusiastic as they discussed with me modalities of thinking and doing that they dared not mention in public (and which I call labor in/of disjointed times). Thanks to their sincere interest in sharing these non-public thoughts and deeds, I was able to move beyond scripted CSA narratives to examine multi-species and multi-temporal understandings that today are erased in the narrow choice between neoliberal and fascistic future-making agendas.

Fascist and Neoliberal Environmentalism

Environmental efforts, Bolsonaro argues, undermine the agropastoral operations whose expansion across Amazonia may realize Brazil's sovereign claims over this territory.[24] Accordingly, his government has reduced protected areas, cut the budget of environmental and Indigenous institutions, undermined science-based policymaking, placed members of the military in charge of government agencies devoted to socio-ecological matters, made firearms more accessible, and sheltered environmental criminals.[25] As Bolsonaro accelerates this agenda under the cover provided by a ravaging COVID-19

20. Ginn, Beisel, and Barua, "Flourishing with Awkward Creatures"; Haraway, *Staying with the Trouble*; Chao, "Beetle or the Bug?"

21. Hochstetler and Keck, *Greening Brazil*.

22. Rojas, "Crisis Progressive"; Lahsen and Nobre, "Challenge."

23. Johnson and Rojas, "Contrasting Values."

24. Rodrigues and Kalil, "Military-Green Biopolitics."

25. Rapozo, "Necropolitics"; Funari, "Family, God, Brazil, Guns."

pandemic, Amazonia offers a despairing sight: fascist dreams of totalizing sovereign control over the land yielding a space shattered by multiple criminal undertakings and a profound sense of lawlessness becoming the law of the land.[26]

Stories emerging from this situation contrast with recent depictions of Amazonia as a place where one could find democratic solutions to one of the main problems of the Anthropocene: the contradiction between climate and agriculture policy agendas. Academics and staff at global development institutions often mentioned that, although humans have transformed 40 percent of the planet's ice-free land into settlements, agropastoral areas, and wastelands, humans continue to demand more and more food, energy, and raw materials from the soil.[27] This demand, however, could not be satisfied with current agro-industrial methods, as these were already driving deforestation, soil depletion, mass death of pollinators, fires, droughts, floods, rising global temperatures, and pandemics—events that could combine to collapse global food systems.[28]

In this context CSA programs in Brazil were touted as achieving "miraculous" results.[29] Between 2004 and 2014, CSA proponents noted, deforestation rates in Amazonia fell by around 20,000 square kilometers per year, despite the area covered by soybean farms expanding from 7 to 12.3 million hectares and soy production doubling from 20 to 40 million metric tons per year.[30] Amazonian CSA programs were seen as having the potential to alter Anthropocene futures by expanding beyond the region and remaking an agro-industrial zone extending from Amazonia to Argentina where more than half of the global soybeans output is produced.[31]

Neoliberal Contradictions

Despite their global popularity, CSA approaches are not exempt from criticism. Scholars point out that as a direct heir of twentieth-century green revolution ideologies[32] CSA hinged on the delusional claim that social, economic, and ecological issues could be fixed with high-yield monocultures. Similarly, in 2014 dozens of environmental organizations from around the world published an open letter that opposed the creation at the United Nations' Food and Agriculture Organization of a "CSA Global Alliance" (such was the name for a "multi-stakeholder platform" in which governments, NGOs, and agribusiness were to "increase productivity" and "improve resilience and adaptation").[33] Signatories of the letter criticized the terms of the alliance for using language that, in

26. Vale et al., "COVID-19 Pandemic"; Safatle, "Fascist Neoliberalism."

27. Ruddiman, "Anthropocene"; Wolford, "Plantationcene."

28. Negra et al., "Brazil."

29. Rada, "Assessing Brazil's Cerrado Agricultural Miracle."

30. Thaler, "Land Sparing Complex"; for data regarding agricultural yields see CONAB, *Portal de informações agropecuárias*.

31. On this agribusiness zone see Gordillo, "Metropolis."

32. Adam, *Timescapes of Modernity*.

33. GACSA, *Strategic Plan*.

depicting agro-industrial expansion as compatible with ecological undertakings, was "deceptive and deeply contradictory" such that it green washed "the activities of the planet's worst climate offenders in agribusiness and industrial agriculture."[34]

These critiques show CSA arguments to be part of a performance that Donna Haraway calls the "god trick."[35] God-tricksters, Haraway points out, base their political agendas on stories in which the world is portrayed as if from high above, from a vantage point in which even catastrophic situations seem like minor events, unable to disturb the larger, beautiful picture that the "elevated" gaze purportedly takes in. CSA proponents are storytellers who perform just such a "god trick" when they mobilize data on agricultural yields and deforestation rates to suggest that efficiency gains could transform agro-industry at large.[36] This maneuver allowed CSA proponents to argue, for instance, that the loss of 7,000 square kilometers of Amazonian forest in 2008 was a positive outcome that, if properly studied, made visible a historical trajectory that could lead to "the end of deforestation."[37] Similarly, current calls for a return to CSA depict the reawakening of fascist forces as an issue that could lead to reviving efforts to create a new climate-agriculture order—never mind that such an approach would continue fueling right-wing extremism by generating profoundly unequal socioeconomic conditions across rural Brazil and empowering the landed interests that have historically supported extreme right-wing political movements.[38]

Deciding between fascist socio-environmental destruction and CSA approaches would mean choosing between two highly destructive future-making undertakings. To be sure, this choice is not between two alternatives of equal weight, since right-wing extremists' public embracing of death-effecting policies is more destructive than neoliberal technocrats' disavowal of their role in socio-ecological devastation. And yet both approaches are erected on the premise that, whatever challenges we face in the present, we can transcend them through an aggressive modality of labor in/of time, wherein industrial tools allow humans to transcend Amazonia's past and present and, from this elevated position, to take the region to its historical destiny.

God Tricks and Temporal Labor

Together with Bear's work on labor in/of time, Haraway's insights on the "god trick" bring into focus the temporal trap that both fascist and neoliberal agendas bring about. In Amazonia, at least since the 1960s, members of the military, technocrats, and fascistic politicians have, as Bear argues, grounded their claims to political authority on "time-maps."[39] Just like maps are made by representing space as if one were seeing it from

34. ActionAid International et al., "Corporate-Smart Greenwash."
35. Haraway, "Situated Knowledges," 583.
36. Clapp, Newell, and Brent, "Global Political Economy of Climate Change."
37. Nepstadt et al., "End of Deforestation."
38. Anderson, *Brazil Apart*.
39. Bear, "Doubt, Conflict, Mediation"; Gell, *Anthropology of Time*.

high above, time-maps are crafted by people who allude to events from the past, the present, and the future as if they were seeing them from above the flow of time—a position from which highly disruptive occurrences seem to belong in a unified, linear temporal path leading to human self-realization. An essential part of the "god trick," time-maps make mundane political agendas appear as transcendental efforts to open linear historical trajectories whose endpoint is akin to "an ultimate paradise."[40]

In Bolsonaro's Amazonia, the allure of CSA proposals rests on the notion that fascist devastation could be made into nothing but a momentary detour in an otherwise linear path toward climate-agribusiness harmony. One way to destabilize such a claim is to stress the extent to which CSA is but the latest of a long string of "god trick" performances.

Fascist Temporal Labor

Bolsonaro's longing for dictatorial times is the expression of a militaristic understanding of Brazil's historical destiny: by integrating all its territory into a totalizing economic scaffolding the country could claim its due position as a sovereign global power.[41] Such understanding dates back at least to 1964 when the dictatorship claimed that the failure of past development efforts in Amazonia had yielded nothing but an archipelago of "backward" peoples and territories, the kind of place that foreign powers could appropriate by claiming it as humanity's "natural" patrimony.[42] From this viewpoint, more than a century after its independence, Brazil's advance toward its historical destiny as a sovereign nation was truncated by "natural" conditions, "primitive" peoples, and neoimperialist powers.[43]

From this perspective breaking out of neocolonial subjugation meant embarking on an internal colonization undertaking, summarized in the succinct phrase *ocupar para não entregar* "to occupy in order not to give."[44] Written in the infinitive ("not to give"), the slogan betrayed a temporal intention. Internal colonization was framed as capable of accomplishing what Ssorin-Chaikov calls, in another context, a "time change,"[45] a new distribution of people, capital, technology, and infrastructure in space that would spark a qualitative shift in the relationship between past, present, and future. Such was the justification for Brazil's dictatorship incentivizing tens of thousands of European descendants to move into Amazonia while the military pumped massive amounts of resources into the region. Year after year colossal investments went into building new cities, highways, and agricultural and ranching operations in reiterative investments that were designed to build a self-sustained, linear economic trajectory: revenue from agro-pastoral

40. Koselleck, *Futures Past*, 22–23; DeLoughrey, *Allegories of the Anthropocene*.
41. Rapozo, "Necropolitics."
42. Ramos, *Indigenism*.
43. Ferreira Reis, *Amazônia*.
44. Becker, *Amazônia*.
45. Ssorin-Chaikov, *Two Lenins*, 9.

operations would finance steady, yearly inflows of costly machinery and inputs that, in turn, could be used to advance new agricultural and ranching operations.[46] The forests and peoples that long stood as legacies of a past that refused to go away would be transformed into parts of a future-making, agro-industrial machinery capable of opening a sovereign future for the nation.[47]

However, even the dictatorship's staunchest supporters had a hard time defending the military governments' achievements in Amazonia. Cities (such as Tanupá) that were built to accommodate tens of thousands of settlers long stood as mostly empty reminders of over-ambitious planning. Large properties surrounding urban centers that were supposed to generate self-sustaining economic flows were often kept by their (mostly white) proprietors as untended reservoirs of wealth.[48] Illegal settlements and illicit logging and mining operations created archipelagos of boom-and-bust economic sites that attracted tens of thousands of poor landless families who, despite the existence of vacant housing lots in urban centers, were not allowed to claim a site for themselves.[49] Indigenous and traditional territories were profoundly and permanently affected by violence of genocidal proportions during this time; but still many people continued living in ways that were more attuned to the rhythms of Amazonian ecologies than to those of global markets.[50]

When Bolsonaro argued, years before his presidential campaign in 1995, that "it was a shame that the Brazilian cavalry hasn't been as efficient as the [US cavalry], which exterminated the Indians," he was expressing a view long shared by supporters of fascist agendas in Amazonia: the military government's efforts to place Amazonia in a straightforward trajectory toward an agro-industrial future had failed to apply the violent force necessary to give birth to a new future.[51] Allowing too many forests and forest peoples to survive had permitted environmental interests to continue intruding in Brazil's agro-industrial efforts, which were slowed down as a result. Such a notion entails a fascist time-map in which a new wave of unrestrained violence in pursuit of agro-industrial development is described as needed to free Brazil from its neocolonial condition and open a future of sovereign self-determination.

Neoliberal Temporal Labor

Although neo-dictatorial arguments have a long history in Amazonia, until recently the most influential take on the military government's failures in the region was a neoliberal story. In it, authoritarian efforts, intent on building a region-wide homogeneous

46. Ianni, *Dictadura e agricultura*; Velho, *Frentes de expansão*.

47. Tavares, "Modern Frontiers." For explicit formulations of these ideas by members of the dictatorship see de Mattos, *Brasil*; Silva, *Cojuntura política nacional*.

48. Cardoso and Müller, *Amazônia*.

49. Bunker, *Underdeveloping the Amazon*; Rojas, Olival, and Olival, "Despairing Hopes."

50. Cleary, "After the Frontier."

51. Urzedo and Chatterjee, "Colonial Reproduction of Deforestation."

economic network, had failed to capitalize on the diversity of the region's human and natural capital.[52] From this viewpoint Amazonia could be freed from the past through governance strategies that would use rural commodity markets to connect various territories—monoculture plantations, urban centers, peasant settlements, remaining forests, Indigenous lands—enabling each to contribute to national economic growth in its own way.

Under this notion state institutions behind rural development programs offered Brazilian agribusinesses cheap credit and macro-economic conditions that allowed them to expand into global conglomerates that became responsible for harmonizing Amazonia's varied landscapes.[53] Agribusinesses were to remake fallow and low-productivity areas into high-tech plantations, transform outsized cities into global conglomerates' Amazonian headquarters, retool derelict infrastructure into their transport networks, approach poor rural communities as their reservoirs of labor, and tap into the region's "natural capital" in a "sustainable" way.[54]

Socio-environmental NGOs made essential contributions to this approach since the late 1990s, when they began to promote a wide range of environmental policies that in time would be known as pioneer CSA efforts. To begin with, socio-environmentalists supported the creation of new protected areas (natural parks and Indigenous territories) around areas of agribusiness expansion. Moreover, they advocated including Amazonian towns with high deforestation rates on a "blacklist" of municipalities to be targeted by environmental authorities and excluded from some rural development programs. At the same time, they helped establish a land-registry system to monitor whether landholders were maintaining private forest reserves, as stipulated by Brazilian law. Additionally, they helped formulate a voluntary pledge whereby the largest soybean commercialization companies agreed not to buy from farmers outside the land-register system or from blacklisted municipalities. Finally, they designed a program that helped peasant organizations gather seeds in native forests and sell them to agro-industrial farmers who were encouraged to use them to reforest parts of their lands, as an inexpensive way for farmers to comply with environmental laws and obtain permits needed to sell their produce to soybean companies. The explicit goal of these reforestation projects was to establish an interlinked set of permanent programs whereby a fraction of agribusiness revenues would be channeled to forest communities so that they could continue maintaining the regions' "environmental services."[55]

The Brazilian climate-smart approach was explicitly designed to weave together and manage "multiple temporal and spatial scales,"[56] or land "mosaics" composed by

52. Becker, *Amazônia: Geopolítica*.
53. Ioris, *Agribusiness*.
54. Greenleaf, "Beneficiaries of Forest Carbon."
55. Hecht, "New Amazon Geographies."
56. Negra et al., "Brazil"; Harvey et al., "Climate-Smart Landscapes."

both forests and monocultures. It strived for the kind of multi-temporal future in which "each temporality is a resource for others. Each takes the other in, uses it, and absorbs it, without, however, transforming it into itself completely."[57]

As I mentioned in the introduction, arguments in favor of such a multi-temporal approach resurfaced in the context of the 2021 Glasgow climate summit when Amazon-based policy-oriented scientists argued for CSA as an alternative to fascist devastation.[58] Indeed, their ideas can be seen in the *Glasgow Leaders' Declaration on Forests and Land Use*, the most important policy text on forest issues produced at global climate summits in many years.[59] Embracing the multi-temporal futurity characteristic of CSA approaches, the declaration promotes the development of "profitable, sustainable agriculture" as essential to "accelerate the transition to an economy that . . . advances forest, sustainable land use, biodiversity and climate goals."[60] Here we can see the "god trick" that earned CSA advocates financial resources and influence at the turn of the millennium. Glasgow policymakers present themselves as temporal cartographers, capable of transcending the ordinary point of view by stitching together a coherent rural development trajectory (economic transition) out of a disjointed collection of historical occurrences. Yet such performance mirrors that of the right-wing extremist they oppose in the specific sense that the quest for the "new" motivates steadfast adherence to environmentally destructive agro-industrial efforts that open a time of compulsive repetition wherein myriad socio-ecological futures are foreclosed.

The situation calls for acknowledging situated future-making efforts that forego delusional attempts to build anthropocentric spatiotemporal orders. Instead of acting out an obsessive attachment to fantasies of human self-sufficiency and clear breaks with the past, such temporal efforts remain attentive to the human-nonhuman entanglements that can support persons and groups as they grapple with disjointed trends inherited from a past that cannot be transcended.

Disjointed Temporal Labor

Climate-smart agriculture proponents' emphasis on the epistemic virtue of smartness is part of a claim that their development proposals draw on linear scientific efforts that offer increasingly precise views of climate-agriculture dynamics.[61] However, like the scientists with whom anthropologist Antonia Walford works in Amazonia, scientists who study climate-agriculture dynamics in the region described their research as a recursive scientific undertaking that had them confront "the limits of their scientific knowledge."[62] For instance, when outlining the outcomes of their policy-oriented research,

57. Ssorin-Chaikov, *Two Lenins*, 10.
58. Rattis et al., "Climatic Limit."
59. Vaughan, "End to Deforestation?"
60. *Glasgow Leaders Declaration.*
61. Taylor, "Climate-Smart Agriculture."
62. Walford, "Limits and Limitlessness," 30.

socio-environmentalists such as Edilson described a kind of knowledge that is contingent and inherently incomplete. "We [environmental scientists involved in CSA efforts]" Edilson argues, "want to produce knowledge in order to influence public policy. All [of this] so that the landscape is somewhat stable in the future. . . . I think the way in which people [living in Amazonia] use the landscape will always change. The landscape is already in transformation and it is likely that we [people living in Amazonia] will continue to change it."

Edilson's description of his research's limited capacity to shape emergent futures due to Amazonia being a "landscape . . . already in transformation" offers an example of what I call "disjointed labor in/of time." Advanced "in" a present time distorted by decades of mass-scale rainforest destruction that had generated increasingly drier and fire-prone rural spaces, Edilson's ideas could not avert dire transformations. His labor "of" time did not entail telling stories of how he could elevate above Amazonia's present troubles to an exalted vantage point from which he could foresee a durable order. Instead, he spoke of following and documenting situated socio-ecological dislocations from up close, counting himself in a collective "we" who would "continue" "chang[ing]" Amazonian landscapes that would be "somewhat stable" at best.

Such efforts remained disjointed to the extent that they were not guided by—nor were they able to produce—clear representations of a future order. As Caio, cofounder of Edilson's NGO and world-renowned scientist, put it, socio-environmental labor was "an infinite regression." "You get your results," Caio said, alluding to research on issues such as the relation between precipitation and tree behaviors in Amazonia, "and then you study more and then you get another [result]." "So then [in this data-gathering process]," he continued, "you bring down truths. And construct new truths. So the question is: when will [scientific knowledge] be ready to be used [in policy efforts]? Never!" Eschewing recourse to final "truths," Caio's and Edilson's disjointed labor in/of time rejected ambitions to craft total representations of socio-environmental orders to come and instead focused on tracing up close a wide range of irresolvable contradictions. This meant tracking past occurrences as they reverberated in the present and the future and being attentive to nonhuman creativity that remains recalcitrant to human mastery.

Multi-species, Multi-temporal Labor

When Fernando, Edilson's senior colleague, talked about his contributions to CSA policy and practice, he spent little time on general themes such as the relationship between agricultural yields and deforestation rates, focusing instead on the situated histories of places such as Tanupá, the town where he was based. In this close-to-the-ground storytelling he outlined social and ecological trends that impinged on one another but remained disjointed, as they failed to dovetail into stable socio-ecological patterns. Not too long ago, he told me as we drove across a monoculture plantation tens of thousands of hectares large, this "landscape" had been a "frontier" in which economic operations relied on "violence and high deforestation." However, by the second decade of the

millennium and after several years of CSA activity in the area, he argued, one could see with each passing year "more legal agribusiness," which is to say, more rural operations that abided to some extent by Brazil's legal framework. To be sure, he added, there was still "criminality" in the region, but, he continued, "when you reach that point [of a majority of 'legal agribusiness' joining socio-environmental efforts] . . . you have a landscape in which the relationships between forest and monocultures is a little bit more equilibrated."

Fernando's account not only rejected fascist attachments to past "violence and high deforestation," but his timid hopes in "*a little bit* more equilibrated" future also destabilized CSA's fantasies of climate-agriculture harmony. His own scientific research told Fernando that agro-industrial tools, far from awarding humans the power to bring about futures that responded to their will, elicited a wide range of creative nonhuman responses that could collapse human designs. For instance, the massive quantities of "phosphorous and nitrogen [being] added to the landscape" in high-yield CSA plantations, Fernando asserted, were already driving "all these very rapid [ecological] changes": fertilizers percolated into waterways where algae could feed on them, expanding their populations to the point of depleting water of oxygen in ways that could cause widespread mortality among aquatic life. In thinking about these issues in Tanupá, Fernando had come to know agro-chemicals not as the fuel of tightly built socio-ecological assemblages but as flows of nutrients that could break once-stable patterns into a range of disjointed chains of occurrences.

Margaret elaborated on this point when, talking about fertilizer overuse in Tanupá, she reminded me that whereas monoculture landscapes rely on external inputs, rainforests thrive on the nutrients produced by a wide range of rainforest organisms. For millennia, she added, fish predators in some parts of Amazonia ate their catch on dry land. By leaving bones to decompose on dry surfaces, these animals moved significant amounts of nitrogen and phosphorus out of rivers, generating fertile soils along some riverbanks. And perhaps such fertile soils, she continued, might have nourished some large trees, including some that possibly offered edible fruits to the first humans who settled in the basin many thousands of years ago. There was evidence, Margaret added, that humans disposed the seeds from the fruits they ate in such a way that further facilitated the proliferation of fruit trees near waterways, whose flowers and fruit would have subsequently fallen in the water, in turn creating places in which fish regularly fed and from which predators would once again have dragged their prey to the land in a repetition of this cycle—to the benefit of human gardens and their cultivated trees.

What I call "disjointed labor in/of time" can be seen in Margaret's storytelling wherein bacteria, fish, predators, trees, and humans appear as part of multi-species associations that, building on the legacy of past occurrences (bacteria adding an additional layer of nutrients to human-tended soils where other carcasses had previously decomposed), created futures in which plants and animals could come to life, feed, grow, die, and rot in interconnected ways. Thus seen, multi-species entanglements not only

existed "in" the flow of time but carried out labor "of" time by altering multiple temporal trends in ways that sometimes yielded stable (yet contingent and internally diverse) patterns.[63] Furthermore, taking the creative capacities of multi-species relations into serious consideration also raises important question regarding fascist dreams of guaranteeing human mastery over the world by effecting death and destruction.

Beyond-Human Socio-Ecological Destruction

The sight of gigantic monoculture plantations in Amazonia designed to house a handful of engineered plants seems to substantiate the belief that industrial agriculture has helped humanity become, as some scholars of the Anthropocene argue, a "dominant" species whose actions "overwhelm" "the great forces of nature."[64] A fundamentally different perspective is opened by my interlocutors' disjointed labor in/of time. Attentive to nonhuman temporal creativity, they showed the folly of thinking that human-driven destruction would result in human-managed futures. They reasoned that agro-industrial devastation brought about a situation in which myriad unruly nonhuman entities and forces recalcitrant to human control pulled ecological patterns apart.

Both Edilson and Fernando alluded to these insights when they expressed timid hopes in the "somewhat stable" and "a little bit more equilibrated" landscapes of the future. In this and other instances, they used the world "landscape" in a way similar to that of scholars for whom the term denotes spatial configurations constantly created by humans and nonhumans whose generative capacities impinge on one another.[65] Edilson explained this in some detail as I assisted him in a research project he carried out in an open-air laboratory run by his NGO in a "climate-smart" agro-industrial farm in Tanupá. He had just gathered several pounds of grasses that once stood four to six feet tall in forests adjacent to a massive soybean plantation and was folding grass stems and packing them in preparation to send them to a laboratory in São Paulo for species identification. Like much of the scientific work carried out at this open-air laboratory, the job was dull and repetitive, which gave us time to talk about how these modest, easily pliable grasses undermined agro-industrial efforts.

In their daily metabolism, Edilson explained, soybeans and grasses transpire less water vapor into the air than native Amazonian vegetation. This explains why the problem of replacing forests with monocultures is not just that trees are lost in the present but also that the small plants that replace them can contribute to the occurrence of future fires. The grasses in our hands, he continued, were probably introduced into the region in the late 1980s and 1990s when Tanupá was a ranching town (the laboratory in São Paulo would later confirm that, indeed, the grasses were of the African species

63. Ernwein, Ginn, and Palmer, *Work That Plants Do*; Kohn, *How Forests Think*; Connolly, *Facing the Planetary*.

64. Steffen, Crutzen, and McNeill, "Anthropocene."

65. Davis and Zanotti, "Hybrid Landscapes."

Brachiaria decumbens and *Andropogon gayanus*). Since the early 2000s, however, humans stopped tending these organisms, as most pastures in Tanupá were transformed into more profitable soybean farms. And yet abandoned grasses had not only survived on their own but were thriving in remaining forests thanks to the drier climate that farmers and their soybeans were inadvertently creating. Moreover, being more flammable than native vegetation, these grasses increased the likelihood of fires in the remaining forests in which they grew. These fires, in their turn, opened clearings in remaining forests in which the grasses could further expand and grow tall in soils fertilized by the ashes, their stems blocking native seeds' access to sunlight—actively hampering forest regrowth and opening a future in which both grasses and fires would be more and more common.

Edilson described the expansion of agro-industrial landscapes as the swelling of what Heather Swanson and her coauthors call a "heedless entanglement"—a situation in which a wide range of nonhuman entities establish interspecies relations that actively undermine existing ecological patterns in ways that carry past human destruction into the future.[66] Over millennia, Edilson noted, fires in Amazonia had been for the most part sparked by lightning and generated the high-temperature conditions under which some native seeds could "break dormancy" and germinate. They also destroyed old and unhealthy trees whose disappearance created openings in the canopy that provided access to sunlight for smaller vegetation and younger trees. Each fire event was thus part of a chain of multi-species behaviors involving tree metabolisms, alternating dry-wet seasons, intergenerational tree-replacement cycles, and seed-germination patterns.

Edilson's job was to study how entities such as fires had ceased to contribute to long-established, stable temporal trends and, jointly with organisms introduced by humans (soybeans, grasses, etc.), had begun to destabilize existing ecological patterns. His work in Tanupá is disjointed labor in/of time insofar as it brings to the foreground humanity's role in a multi-species process of destruction while also showing fascistic and neoliberal delusions for what they are: a necrophiliac claim for power in which heedless influence is mistaken for sovereign mastery, and a voracious wager to achieve the impossible goal of fueling endless economic expansion by making whole ecologies into the fuel reserves of capitalist machineries.

Conclusion

Since the end of the dictatorship and until a few years ago Brazil was known as one of the countries in which hegemonic neoliberal strategies had narrowed political debates on ecological matters to an "infernal alternative":[67] people could either tolerate present socio-ecological "sacrifices" made in the name of future economic growth or subscribe to

66. Swanson et al., *Arts of Living*, M2.
67. Stengers, *Catastrophic Times*, 55.

a "neoliberalism with a human face" in which the destruction was somewhat lessened through market-based programs such as CSA. Bolsonaro's movement has added a third infernal alternative to the mix: a fascist platform in which devastation is embraced in a nihilistic cult of death wherein violent destruction is a way to prove one's commitment to national greatness.[68]

At this juncture, reverting to least infernal, neoliberal alternatives could be mistaken as a life-affirming way to heal some of the damage wrought by fascistic destruction. But as my interlocutors in Tanupá remind us, reprising market-based environmental strategies such as CSA would mean regressing to an age of empty bureaucratic rituals, whereby neoliberal plans are praised by the very people whose research demonstrates strategic complicity with continued devastation. The point, however, is not to criticize CSA from an elevated, heroic position that would allow us to pass judgment on those who failed before us, right the wrongs of the past, and trace a brave, new path ahead. The argument, rather, is for taking into serious ethnographic consideration multi-species and multi-temporal stories, ideas, and practices that are in excess of the neoliberal and fascist times that seem to contain them.[69]

Such a viewpoint could provide inspiration for future-making undertakings that, in response to beyond-human troubles that will not pass away, strive to establish multi-species relationships in an effort to alter the pace and direction of socio-ecological trends. To be clear, this is not to say that people such as Margaret, Caio, and Fernando are without fault. Although they have supported social movements and Indigenous organizations, my interlocutors have not acted in the way of other NGOs that actively support social struggles. Nor have they used their public platforms to clearly state what they know regarding the delusional nature of dominant agro-industrial agendas that result in ecological devastation and systematic forms of racialized domination.

Still, their wisdom is important, given the magnitude of the challenges we face as we navigate a situation in which, as Lisa Baraitser points out, there is a sense that "the future will come, but it will bring no fulfilment of the promises of the now."[70] In this ethnographic present without a future cultivating attentiveness to multi-temporal and multi-species engagements[71] may help us find human and nonhuman companions[72] with whom we may craft hospitable futures, notwithstanding the certainty of damage that defines times ahead.

DAVID ROJAS is assistant professor of Latin American Studies at Bucknell University.

68. Safatle, "Beyond the Necropolitics Principle."
69. Van Dooren and Bird Rose, "Lively Ethnography."
70. Baraitser, *Enduring Time*, 8.
71. Van Dooren, Kirksey, and Münster, "Multispecies Studies."
72. Ernwein, Ginn, and Palmer, *Work That Plants Do*; Swanson, *Arts of Living*; Ssorin-Chaikov, *Two Lenins*.

References

ActionAid International et al. "Corporate-Smart Greenwash: Why We Reject the Global Alliance on Climate-Smart Agriculture." September 2014. Third World Network. www.twn.my/title2/climate/info.service/2014/cc140903.htm (accessed May 21, 2021).

Adam, Barbara. *Timescapes of Modernity: The Environment and Invisible Hazards*. New York: Routledge, 2005.

Anand, Nikhil, Akhil Gupta, and Hannah Appel. *The Promise of Infrastructure*. Durham, NC: Duke University Press, 2018.

Anderson, Perry. *Brazil Apart: 1964–2019*. New York: Verso, 2019.

Baraitser, Lisa. *Enduring Time*. London: Bloomsbury, 2017.

Bear, Laura. "Doubt, Conflict, Mediation: The Anthropology of Modern Time." *Journal of the Royal Anthropological Institute* 20, no. 2 (2014): 3–30.

Bear, Laura. *Navigating Austerity: Currents of Debt along a South Asian River*. Stanford, CA: Stanford University Press, 2015.

Becker, Bertha. *Amazônia*. São Paulo: Atica, 1990.

Becker, Bertha. *Amazônia: Geopolítica na virada do III milênio*. Rio de Janeiro: Garamond, 2004.

Berlant, Lauren. *Cruel Optimism*. Durham, NC: Duke University Press, 2011.

Bunker, Stephen. *Underdeveloping the Amazon: Extraction, Unequal Exchange, and the Failure of the Modern State*. Urbana: University of Illinois Press, 1985.

Cardoso, Fernando Henrique, and Geraldo Müller. *Amazônia: Expanção do capitalismo*. Sao Paulo: Brasiliense, 1977.

Chao, Sophie. "The Beetle or the Bug: Multispecies Politics in a West Papuan Oil Palm Plantation." *Cultural Anthropology* 123, no. 3 (2021): 476–89.

Clapp, Jennifer, Peter Newell, and Zoe Brent. "The Global Political Economy of Climate Change, Agriculture, and Food Systems." *Journal of Peasant Studies* 45, no. 1 (2018): 80–88.

Cleary, David. "After the Frontier: Problems with Political Economy in the Modern Brazilian Amazon." *Journal of Latin American Studies* 25, no. 2 (1993): 331–49.

CONAB (Compania Nacional de Abastecimiento). *Portal de informações agropecuárias*. https://portaldeinformacoes.conab.gov.br/safra-serie-historica-graos.html (accessed July 21, 2021).

Connolly, William. *Facing the Planetary*. Durham, NC: Duke University Press, 2017.

Davis, Reade, and Laura Zanotti. "Hybrid Landscapes: Science, Conservation, and the Production of Nature." *Anthropological Quarterly* 87, no. 3 (2014): 601–11.

DeLoughrey, Elizabeth. *Allegories of the Anthropocene*. Durham, NC: Duke University Press, 2019.

Derrida, Jacques. *Specters of Marx: The State of the Debt, the Work of Mourning, and the New International*. New York: Routledge, 2012.

Ennes, Juliana. "Land Conflicts in Brazil Break Record under Bolsonaro." *Mongbay*, June 2, 2021. https://news.mongabay.com/2021/06/land-conflicts-in-brazil-break-record-in-2020-under-bolsonaro/.

Ernwein, Marion, Franklin Ginn, and James Palmer. *The Work That Plants Do: Life, Labour, and the Future of Vegetal Economies*. Bielefield: Verlag, 2021.

Finchelstein, Federico. *From Fascism to Populism in History*. Berkeley: University of California Press, 2019.

Funari, Gabriel. "'Family, God, Brazil, Guns . . . ': The State of Criminal Governance in Contemporary Brazil." *Bulletin of Latin American Research*, June 8, 2021. https://doi.org/10.1111/blar.13240.

GACSA (Global Alliance for Climate Smart Agriculture). *Strategic Plan: 2018–2022*, August 2018. https://www.fao.org/3/CA1216EN/ca1216en.pdf.

Garrett, Rachael D., Federico Cammelli, Joice Ferreira, Samuel A. Levy, Judson Valentim, and Ima Vieira. "Forests and Sustainable Development in the Brazilian Amazon: History, Trends, and Future Prospects." *Annual Review of Environment and Resources* 46, no. 1 (2021): 625–52. https://doi.org/10.1146/annurev-environ-012220–010228.

Gell, Alfred. *The Anthropology of Time: Cultural Constructions of Temporal Maps and Images*. Oxford: Berg, 1992.

Ginn, Franklin, Uli Beisel, and Maan Barua. "Flourishing with Awkward Creatures: Togetherness, Vulnerability, Killing." *Environmental Humanities* 4, no.1 (2014): 113–23.

Global Witness. *Last Line of Defence: The Industries Causing the Climate Crisis and Attacks against Land and Environmental Defenders*. England: Global Witness, 2021. https://www.globalwitness.org/en/campaigns/environmental-activists/last-line-defence.

Gordillo, Gastón. "The Metropolis: The Infrastructure of the Anthropocene." In *Infrastructure, Environment, and Life in the Anthropocene*, edited by Kregg Hetherington, 66–94. Durham, NC: Duke University Press, 2018.

Gordillo, Gastón. *Rubble: The Afterlife of Destruction*. Durham, NC: Duke University Press, 2014.

Greenleaf, Maron. "Beneficiaries of Forest Carbon: Precarious Inclusion in the Brazilian Amazon." *American Anthropologist* 123, no. 2 (2021): 305–17.

Haraway, Donna. "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective." *Feminist Studies* 14, no. 3 (1988): 575–99.

Haraway, Donna J. *Staying with the Trouble: Making Kin in the Chthulucene*. Durham, NC: Duke University Press, 2016.

Harvey, Celia A., Mario Chacón, Camila I. Donatti, Eva Garen, Lee Hannah, Angela Andrade, Lucio Bede, Douglas Brown, Alicia Calle, and Julian Chará. "Climate-Smart Landscapes: Opportunities and Challenges for Integrating Adaptation and Mitigation in Tropical Agriculture." *Conservation Letters* 7, no. 2 (2014): 77–90.

Hecht, Susanna. "The New Amazon Geographies: Insurgent Citizenship, Amazon Nation, and the Politics of Environmentalisms." *Journal of Cultural Geography* 28, no. 1 (2012): 203–23.

Hochstetler, Kathryn, and Margaret Keck. *Greening Brazil: Environmental Activism in State and Society*. Durham, NC: Duke University Press, 2007.

Ianni, Octavio. *Dictadura e agricultura: O desemvolvimento do capitalismo na Amazônia: 1964–1978*. Rio de Janeiro: Editora Civilização Brasileira, 1979.

Ioris, Antonio Augusto. *Agribusiness and the Neoliberal Food System in Brazil: Frontiers and Fissures of Agro-Neoliberalism*. New York: Routledge, 2017.

Irvine, Richard. *An Anthropology of Deep Time: Geological Temporality and Social Life*. Cambridge: Cambridge University Press, 2020.

Johnson, Noor, and David Rojas. "Contrasting Values of Forests and Ice in the Making of a Global Climate Agreement." In *Palaces of Hope: The Anthropology of Global Organizations*, edited by Maria Sapignoli and Ronald Niezen, 219–44. Cambridge: Cambridge University Press, 2017.

Kawa, Nicholas. *Amazonia in the Anthropocene: People, Soils, Plants, Forests*. Austin: University of Texas Press, 2016.

Kirksey, Eben. *Emergent Ecologies*. Durham, NC: Duke University Press, 2015.

Kirksey, S., and Stefan Helmreich. "The Emergence of Multispecies Ethnography." *Cultural Anthropology* 25, no. 4 (2021): 545–76.

Kohn, Eduardo. *How Forests Think: Toward an Anthropology beyond the Human*. Berkeley: University of California Press, 2013.

Koselleck, Reinhart. *Futures Past: On the Semantics of the Historical Past*. New York: Columbia University Press, 2004.

Lahsen, Myanna, and Carlos Nobre. "The Challenge of Connecting International Science and Local Level Sustainability: The Case of the LBA." *Environmental Science & Policy* 10, no. 1 (2007): 62–74.

Latour, Bruno. *An Inquiry into Modes of Existence: An Anthropology of the Moderns*. Chicago: University of Chicago Press, 2013.

Lyons, Kristina. *Vital Decomposition: Soil Practitioners and Life Politics*. Durham, NC: Duke University Press, 2020.

Mattos, Carlos de Meira. *Brasil: Geopolítica e destino*. Rio de Janeiro: Livraria José Olympio Editora, 1979.

Negra, Christine, Sonja Vermeulen, Luis Barioni. Tekalign Mamo, Paul Melville, and Melaku Tadesse. "Brazil, Ethiopia, and New Zealand Lead the Way on Climate-Smart Agriculture." *Agriculture & Food Security* 3, no. 19 (2014). https://doi.org/10.1186/s40066–014–0019–8.

Nepstad, Daniel et al. "The End of Deforestation in the Brazilian Amazon." *Science* 326, no. 5958 (2009): 1350–51.

Nixon, Rob. *Slow Violence and the Environmentalism of the Poor*. Cambridge, MA: Harvard University Press, 2011.

Puig de la Bellacasa, María. *Matters of Care: Speculative Ethics in More than Human Worlds*. Minneapolis: Minnesota University Press, 2017.

Rada, Nicholas. "Assessing Brazil's Cerrado Agricultural Miracle." *Food Policy* 38, no. 1 (2013): 146–55.

Ramankutty, Navin, Amato T. Evan, Chad Monfreda, and Jonathan A. Foley. "Farming the Planet: 1. Geographic Distribution of Global Agricultural Lands in the Year 2000." *Global Biogeochemical Cycles* 22, no. 1 (2008). https://doi.org/10.1029/2007GB002952.

Ramos, Alcida Rita. *Indigenism: Ethnic Politics in Brazil*. Madison: University of Wisconsin Press, 1998.

Rapozo, Pedro. "Necropolitics, State of Exception, and Violence against Indigenous People in the Amazon Region during the Bolsonaro Administration." *Brazilian Political Science Review* 15, no. 2 (2021). https://doi.org/10.1590/1981–38212021000200003.

Rattis, Ludmila, Paulo M. Brando, Marcia N. Macedo, Stephanie A. Spera, Andrea DA Castanho, Eduardo Q. Marques, Nathane Q. Costa, Divino V. Silverio, and Michael T. Coe. "Climatic Limit for Agriculture in Brazil." *Nature Climate Change* 11 (2021): 1098–104. https://doi.org/10.1038/s41558–021–01214–3.

Reis, Arthur Cezar Ferreira. *A Amazônia e a Cobiça Internacional*. Rio de Janeiro: Editora Civilização Brasileira, 1982.

Rodrigues, Thiago, and Mariana Kalil. "A Military-Green Biopolitics: The Brazilian Amazon between Security and Development." *Brazilian Political Science Review* 15, no. 2 (2021): 1–22.

Rojas, David. "Crisis Progressive: Environmental Ethics in a Time of 'Unavoidable' Ecological Destruction in Amazonia." *Ethnos* 86, no. 5 (2021): 897–919.

Rojas, David, Alexandre de Azevedo Olival, and Andrezza Alves Spexoto Olival. "Cultivating Alternatives to Authoritarian Populism in Amazonia." *Journal of Latin American and Caribbean Anthropology* 24, no. 4 (2019): 958–81.

Rojas, David, Alexandre de Azevedo Olival, and Andrezza Alves Spexoto Olival. "Despairing Hopes (and Hopeful Despair) in Amazonia." In *Precarious Democracy: Ethnographies of Hope, Despair, and Resistance in Brazil*, edited by Sean T. Mitchell, Benjamin Junge, Alvaro Jarrin, and Lucia Cantero, 129–41. New Brunswick, NJ: Rutgers University Press, 2021.

Ruddiman, William F. "The Anthropocene." *Annual Review of Earth and Planetary Sciences* 41 (2013): 45–68.

Safatle, Vladimir. "Beyond the Necropolitics Principle: Suicidal State and Authoritarian Neoliberalism." *Crisis & Critique* 7, no. 3 (2020): 361–75.

Safatle, Vladimir. "Fascist Neoliberalism and Preventive Counter-Revolution: The Second Round of the Latin American Laboratory." In *Spectres of Fascism: Historical, Theoretical, and International Perspectives*, edited by Samir Gandesha, 179–90. London: Pluto, 2020.

Schmink, Marianne, and Charles H. Wood. *Contested Frontiers in Amazonia*. New York: Columbia University Press, 1992.

Silva, Golbery do Couto e. *Conjuntura política nacional o poder executivo e geopolítica do Brasil*. Rio de Janeiro: Livraria Jose Olympio Editora, 1981.

Ssorin-Chaikov, Nikolai. *Two Lenins: A Brief Anthropology of Time*. Chicago: Hau, 2017.

Steffen, Will, Paul J. Crutzen, and John R. McNeill. "The Anthropocene: Are Humans Now Overwhelming the Great Forces of Nature?" *AMBIO: A Journal of the Human Environment* 36, no. 8 (2007): 614–21.

Stengers, Isabelle. *In Catastrophic Times: Resisting the Coming Barbarism*. Open Humanities, 2015.

Swanson, Heather Anne, Anna Tsing, Nils Ole Bubandt, and Elaine Gan. "Introduction: Bodies Tumbled into Bodies." In *Arts of Living on a Damaged Planet: Ghosts and Monsters of the Anthropocene*, edited by Anna Tsing, Nils Bubandt, Elaine Gan, and Heather Swanson, M1–M11. Minneapolis: University of Minnesota Press, 2017.

Tavares, Paulo. "Modern Frontiers: Beyond Brasília, the Amazon." In *Latin American Modern Architectures: Ambiguous Territories*, edited by Patricio Del Real and Helen Gyger, 191–212. New York: Routledge, 2013.

Taylor, Marcus. "Climate-Smart Agriculture: What Is It Good For?" *Journal of Peasant Studies* 45, no. 1 (2018): 89–107.

Thaler, Gregory M. 2017. "The Land Sparing Complex: Environmental Governance, Agricultural Intensification, and State Building in the Brazilian Amazon." *Annals of the American Association of Geographers* 107, no. 6 (2017): 1424–43.

Traverso, Enzo. *The New Faces of Fascism: Populism and the Far Right*. New York: Verso, 2019.

Tsing, Anna. *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins*. Princeton, NJ: Princeton University Press, 2015.

Urzedo, Danilo, and Pratichi Chatterjee. "The Colonial Reproduction of Deforestation in the Brazilian Amazon: Violence against Indigenous Peoples for Land Development." *Journal of Genocide Research* 23, no. 2 (2021): 302–24.

Vale, Mariana, Erika Berenguer, Marcio Argollo de Menezes, Ernesto Viveiros de Castro, Ludmila Pugliese de Siqueira, and Rita de Cássia Portela. "The COVID-19 Pandemic as an Opportunity to Weaken Environmental Protection in Brazil." *Biological Conservation* 255 (March 2021). https://doi.org/10.1016/j.biocon.2021.108994.

van Dooren, Thom, Eben Kirksey, and Ursula Münster. 2016. "Multispecies Studies: Cultivating Arts of Attentiveness." *Environmental Humanities* 8, no. 1 (2016): 1–23.

van Dooren, Thom, and Deborah Bird Rose. "Lively Ethnography: Storying Animist Worlds." *Environmental Humanities* 8, no. 1 (2016): 77–94.

Vaughan, Adam. "An End to Deforestation?" *New Scientist* 252, no. 3359 (2021): 9. https://doi.org/10.1016/S0262–4079(21)01951–5.

Velho, Otávio Guilherme. *Frentes de expansão e estrutura agrária: Estudo do processo de penetração numa área da Transamazônica*. Rio de Janeiro: Centro Edelstein de Pesquisas Sociais, 2009.

Walford, Antonia. "Limits and Limitlessness: Exploring Time in Scientific Practice." *Social Analysis* 57, no. 1 (2013): 20–33.

Wolford, Wendy. "The Plantationocene: A Lusotropical Contribution to the Theory." *Annals of the American Association of Geographers* 111, no. 6 (2021): 1622–39. https://doi.org/10.1080/24694452.2020.1850231.