Engaging Science, Technology, and Society

Storying Monocrop Infrastructure: A Conversation on Governance, Scale, and Failure

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Abstract

Plantations have recently become the focus of renewed empirical and conceptual inquiry across the social sciences, arts, and humanities. Scholarship in this interdisciplinary space calls on us to reckon with industrial monocultures' enduring role in shaping contemporary structural inequalities, dominant technoscientific regimes, uneven divisions of labor, environmental violence, and struggles for justice, recognition, and repair. This Engagement piece contributes to these emerging currents by bringing into dialogue two scholars conducting research on monocrop systems in Latin America (Kregg Hetherington as interviewee) and Southeast Asia (Sophie Chao as interviewer). Anchored in Hetherington's concept of "agribiopolitics," the interview approaches monocrops through the two interrelated themes of governance and failure. Governance brings us to consider the forms of control, management, monitoring, and accountability that undergird agribiopolitical regimes, the institutions, practices, and mechanisms that make them possible, and the structures of exclusion, oppression, and violence on which they often depend. Failure brings us to attend to the limits or tipping points of governance as system and process—it's rough edges, its unexpected failings, its uneven distribution, and how failure can be both productive and an opportunity for flight. In reflecting on ways of storying monocrops otherwise, we invite theoretical and methodological dialogue around the form and effects of anthropocenic infrastructures more broadly across the fields of science and technology studies, anthropology, critical race studies, political ecology, agrarian studies, and the environmental humanities. This interview is a revised and expanded version of an Author-Meets-Critic conversation that took place at the Society for Social Studies of Science, (4S) meeting in Cholula, Mexico, where Hetherington's monograph, *The Government of Beans*, received the 2022 Rachel Carson Award.

Keywords

governance; failure; agribiopolitics; storytelling; infrastructure

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Introduction

In recent years, industrial monocrops have become the focus of renewed empirical and conceptual inquiry across the social sciences and humanities. Scholarly interrogations and debates in this lively interdisciplinary space, often appearing under the rubric of the "plantation," call on us to reckon with industrial agriculture's enduring role in shaping contemporary structural inequalities, uneven divisions of labor, technoscientific systems of power, environmental violence, and attendant struggles for recognition and repair (Thomas 2019; McKittrick 2013; Behal 2014). They identify extraction, exploitation, and dispossession as central and recurring tenets of monocrop logic, as it is embedded within longer-standing regimes of what Susan Koshy et al. (2022) term "racial colonial capitalism" (see also Mbembe 2003). In tandem, scholars show how institutionalized efforts to enhance the "sustainability" of monocrop systems are often impeded by structures of power and privilege that undermine the pursuit of justice and sovereignty for those subjected to monocrops' harmful impacts (Galvin 2021; Besky 2013). These structures of power and privilege directly impinge upon but also transcend specific geographic locales, as tentacular supply chains, capillaries of finance, and transfers of technoscientific expertise, come to connect out-of-the-way extractive frontiers to consumers and institutions across national, regional, and global scales (West 2012; Foster 2017; Mintz 1985; Krupa 2022; Tsing 2005).

In these and many other respects, emergent interdisciplinary plantation scholarship is revitalizing in critical and timely ways our understandings of capitalist infrastructures' origins, forms, effects, and afterlives. This encompasses the complex relationship of industrial monocrops with science and technology as systems of knowledge production that have been instrumental to the reconfiguring of tropical landscapes into "capitalist natures" (Moore 2015) and of local communities into "plantation subjects" (Li and Semedi 2022). Focusing on the history of monocultures connects with and contributes to science and technology studies by foregrounding deep continuities between colonial and contemporary monocrop systems, including entrenched understandings of "nature" as a passive material resource, as well as racialized framings of certain human bodies as exploitable commodities and fungible flesh (Wynter 2003; Mitman 2019; King 2016; Hartman 2016). At the same time, and alongside bearing meaningful continuities with plantation pasts, plantation presents are also situated and specific, their meanings differing across spatio-temporal contexts, socio-cultural settings, technoscientific domains of expertise, ecological assemblages, as well as the attributes and affordances of the particular cash crops involved (Clukey and Wells 2016; Guarneri 2019; Li and Semedi 2021).

These dynamics invite us to ask: how should social scientists and STS scholars study and story monocrops as sites of continuity and change, of rupture and renewal? How can we reconcile the specificity of situated monocrop regimes with their recursive material, technoscientific, and ideological force across time and space? How can transdisciplinary engagements across the fields of anthropology, science and technology studies, political ecology, and others, offer more critical, creative, and capacious ways of grappling with monocultures' manifold meanings and matterings? Who are (counter)-monoculture accounts written *with* and *for*, and what purposes do they serve, *in* and *for* the worlds they story?

In November 2022, we had the opportunity to hold a public conversation about these issues on the occasion of an Author-Meets-Critic encounter at the 4S meetings in Cholula, Mexico, where Hetherington's *The Government of Beans* (figure 1) received the 2022 Rachel Carson Award. The critic, according to this formula, was Sophie Chao, author of the recent book In the *Shadow of the Palms* (figure 2). The following is a slightly edited transcript of that conversation, with the addition of an interview, and some light editing to address the comments of two anonymous reviewers and the *ESTS* Editorial Collective.

This conversation about monocrops begins from Hetherington's (2022a) concept of "agribiopolitics," an analytic that draws attention to the entangled government of both human and plant life. Governance evokes the diverse forms of scientific and technological control, management, monitoring, and accountability that undergird monocrop regimes, the social and legal institutions, practices, and mechanisms that make them possible, and the economic and political structures of exclusion, oppression, and violence on which they depend. But as both Hetherington and Chao point out in their work, governance is also incomplete and unruly, and monocrop lives often escape or elide seemingly hegemonic dictates. This includes governance's rough edges, its unexpected failings, its uneven distribution, and shows how such failure of governmental plans can be productive of new ways of being and acting in the world across individuals, collectives, and broader social structures. We also consider governance and failure in a reflexive mode, as opportunities for narrating agribiopolitical regimes otherwise. In particular, we raise questions about the ambivalent power of storytelling; the composition, delivery and value of the ethnographic genre; and more conceptually, the fraught relationship between human-environmental occupation, the stakes of pursuing livelihood and settlement, and the complicity of tactical survival within oppressive and violent commodity regimes.

In the process, questions of governance and of failure emerge not only as empirical "realities" of the fields we study, operating across multiple sites, scales, and subjects of agribiopolitical life. Rather, governance and of failure also operate as methods, concepts, and analytics that help us as scholars think through how we do (or not) govern the terrain and tenor of our ethnographic narratives, reckon with and embrace productive failures or impasses in the field and in our writings, and hold on to what Hetherington calls "theoretical destabilizations" in storying agribiopolitics otherwise. Such theoretical destabilizations entail a refusal to narrate agribiopolitics on the premise of fixed, static, or immutable scales, and rather as a perpetually shifting, contracting, and expanding process of negotiation, friction, and mutual accommodation, shaping both the worlds agribiopolitics make and unmake, and the writings that seek to communicate these worlds to diverse audiences. Just as science and technology can be understood, following Alyssa Paredes (2023), as a series of attempts or experiments qualified by the ever-present risk of failure, so too, we posit, crafting and communicating agribiopolitical assemblages require careful attention to what counts as productive failure, to whom, and with what consequences. In these respects, governance and failure reveal themselves not as rigid and mutually exclusive binaries but rather as mutually entangled dimensions of agribiopolitics and its situated constellations of power.

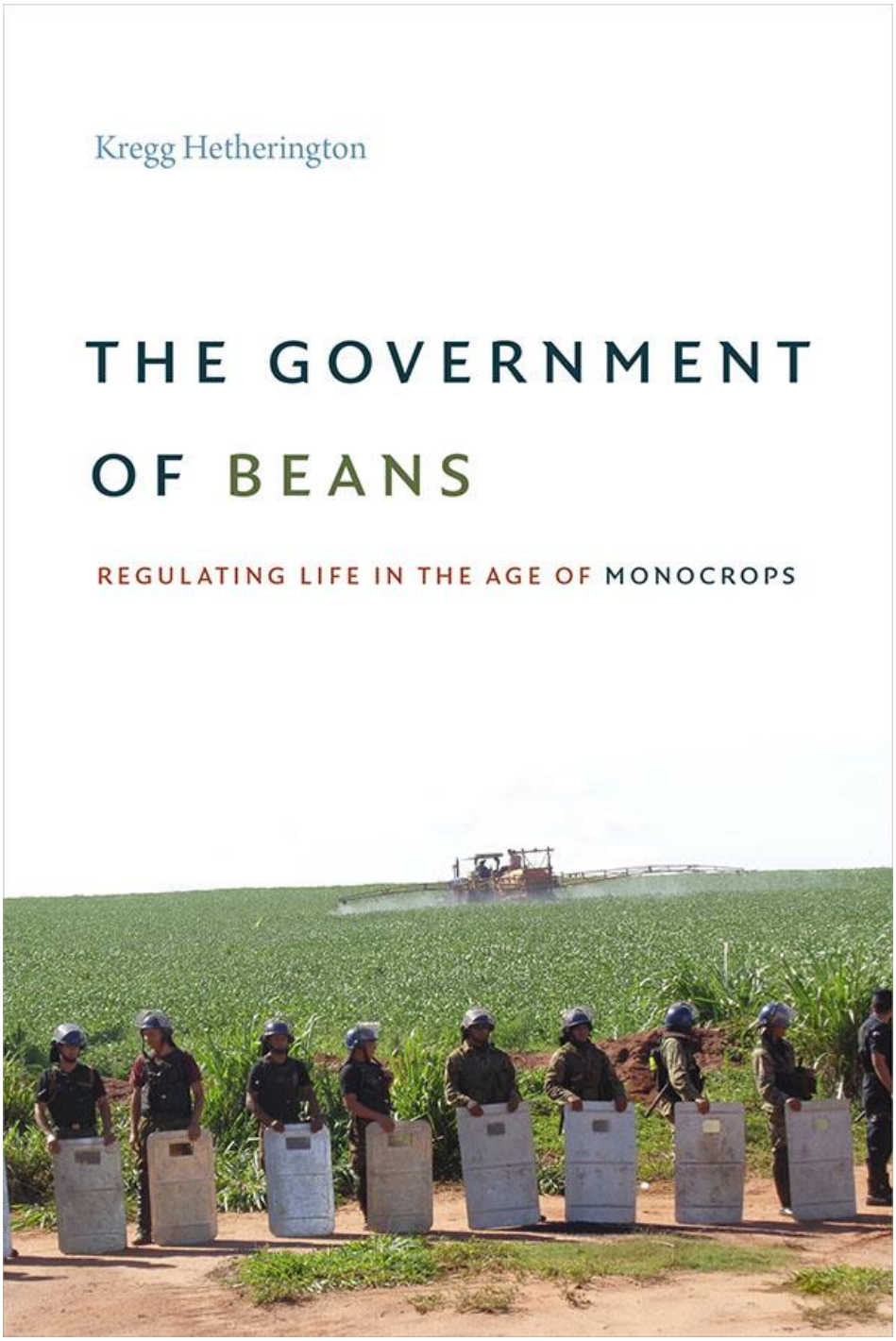

Figure 1. Front cover of *The Government of Beans: Regulating Life in the Age of Monocrops* (Duke University Press, 2020).

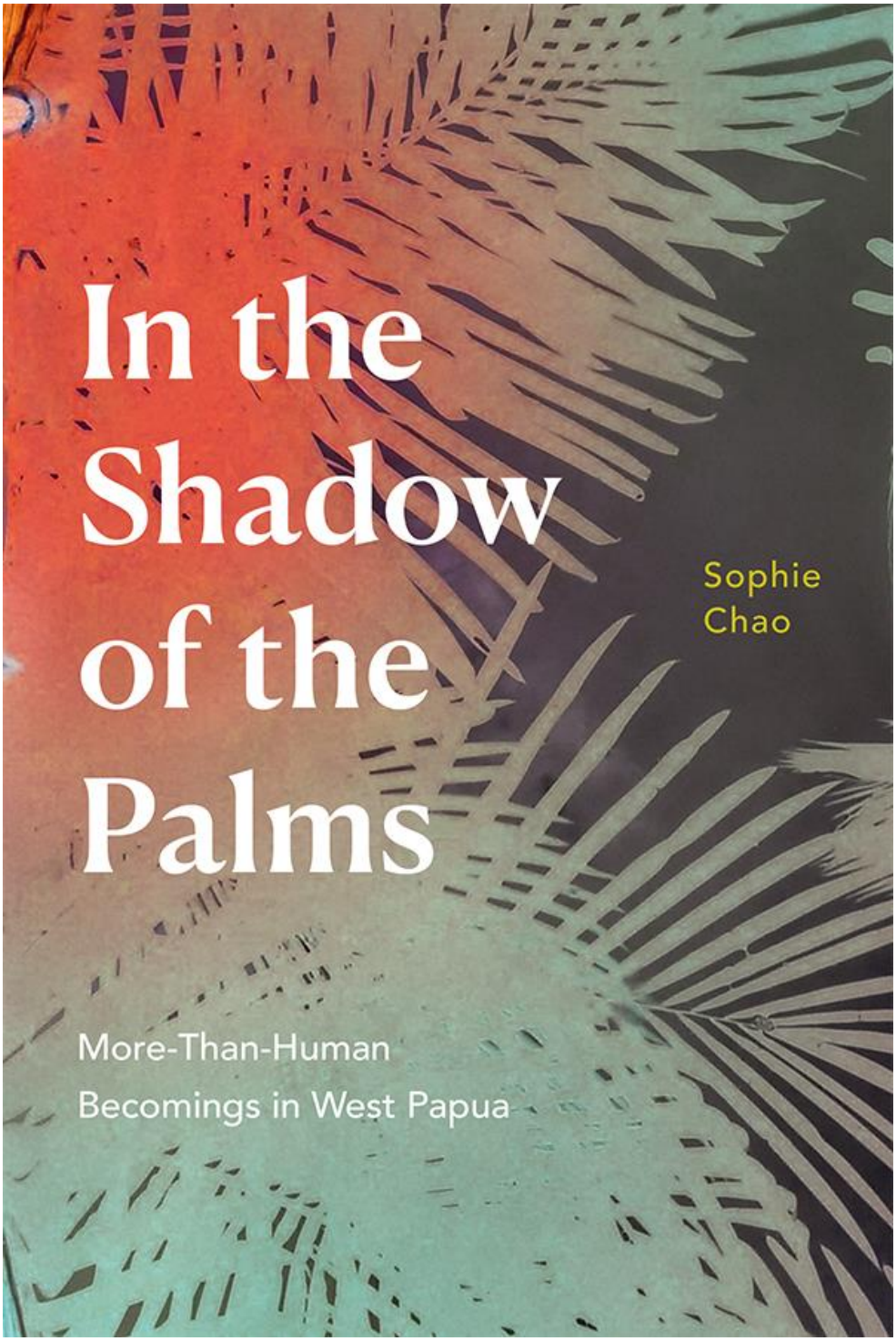

Figure 2. Front cover of *In the Shadow of the Palms: More-Than-Human Becomings in West Papua* (Duke University Press, 2022).

The interview begins by situating Hetherington's award-winning book in the context of his broader shift in attention from land politics to soy politics in Paraguay. We then turn to the significance of soy itself and in particular, its irreducibility to any single identity or layer of meaning within agribiopolitical relations of living, dying, and killing. The interview then shifts to questions of governance through the lens of regulatory policies, frameworks, and tactics, before considering how Paraguayan agribiopolitics sit within longer settler-colonial genealogies and attendant logics of control and extraction. The final sections of the interview focus on the craft of storytelling, the kinds of theoretical destabilizations required in narrating agribiopolitics differently, and the practical and political stakes of such narratives for global readerships and for people in the field whose lives such narratives recount.

Like the growing conversation on plantation histories and ecologies generally, we intend for this interview to speak across diverse scholarly fields, including science and technology studies, but also environmental and political anthropology, critical race studies and Indigenous studies, political ecology and political economy, agrarian and peasant studies, and multispecies studies and the environmental humanities. We hope to underscore and amplify the potential of STS approaches in drawing attention to the fraught and violent practices of monocropping in the anthropocene, the forms of politics, democracy, justice, modernization, and sovereignty that industrial capitalist regimes undermine or sustain, and the entangled relationships that connect humans and non-humans within agribiopolitical landscapes as sites of technoscientific intervention and control.

While the empirical and theoretical insights presented here focus primarily on agribiopolitics in the monocrop sector, their implications also have the potential to bear on research across other sites of anthropogenic activity, together with attendant regimes of technoscientific governance and realities of failure—from extractive mining and deep-sea fracking to biodiversity conservation, urban development, climate change-induced migration, among many others. As such, this conversation aims to bridge sites that are not only encountering but far more enmeshed in the corporate occupation assemblage—an assemblage that is not necessarily about plantations alone, but rather about longer histories of nationalist projects, pursuits for sovereignty, and systematized extraction as a means to accumulating capital. In this respect, we find inspiration in Richard Rath and Monisha Gupta's (2022) notion of "autoimmune capitalism," or the broader constellations of occupation that sustain capitalist projects while undermining conditions of life for the landscapes and lifeforms these projects enlist. We hope our readers will find here an invitation to identify theoretical, conceptual, or empirical affinities with their scholarship in ways that can catalyze innovation and action in our mutual trajectories of research and practice.

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CHAO. Let's begin with a "setting the scene" question. Your first book, *Guerrilla Auditors* (2011), focused on land struggles in Paraguay and examined how rural thinking about property and information conflict with bureaucratic reform projects promoted by international experts. Your second, award-winning book, *The Government of Beans*, tells the story of the rise and fall of a government experiment in environmental

regulation that tried to change the relationship between government, plants, people, and territory. Could you tell us how you came to center your attention in the second work on the soy sector specifically, and how the range of actors featured in this work shaped its conceptual inquiry into questions of technoscientific governance, both efficacious and unruly?

HETHERINGTON. The way I went from the project about land politics to one about soy is as much about my own naivete as it is about my struggle to understand different kinds of objects. With *Guerrilla Auditors*, I had been working on land struggles for a long time and I had found a frame through which to understand the relationship between land and property struggles, state bureaucracy, and the particular genealogies that connect them. But as I was doing this, there was this huge sea of soy bearing down on the people I was hanging out with. Many of them were shifting from an activism about land access to an activism against pesticides and against particular crops. I was aware of this during the first book, but I didn't really know how to tell those two stories at the same time, and so I ended up telling them separately.

This is early 2000s Paraguay, a small, land-locked country in the middle of Latin America, that had become the fourth largest exporter of soybeans in the world (Brazil, the US, and Argentina are the biggest exporters). The degree to which soybeans had come to dominate economic, political, and ecological changes in the country is really hard to understate, but also incredibly complex. Some people were making lots of money, and so there were lots of incentives to burn down forests and plant soybeans. That was one part of the story. At the same time, you had this campesino movement that had been struggling for land and that realized that soybeans were one of the reasons they were losing their land and livelihoods. They had moved towards an activism centered around the phrase "la soja mata," or "the soy kills." I thought if I took this as a starting point, then I could try to understand the full breadth of what that statement meant.

I tried to write soy as a character, ultimately, in a way that wouldn't flatten out the complexity of what it was. I also didn't want to flatten out the deeply complex, ethical conundrums that these actors found themselves in. Although it was difficult because of how I was positioned politically in the country, I made a point of talking to soy farmers and others who were working in the larger soy industry. Very few of these individuals were "bad people" in any obvious kind of way—even though that's often how they are represented in the plantation story. So ultimately, the book is a story about these kinds of objects that elude easy governmental framings or even environmental justice or food justice framings. That mode of unruliness is really what I was trying to unpack in this book, not just a story of rebellious peasants against hegemonic monocrops, but one of a changing agribiopolitical configuration that was both extremely unjust and volatile, in the sense that it seemed like it could change at any moment.

CHAO. Let's stay with the story of the slogan la soja mata, or "the soy kills." Soy came to represent a completely novel kind of agriculture that in turn represented the annihilation of a certain rural way of life. It created fabulous wealth for a minority and dispossessed others of their farmland and forest (Hetherington 2020a, 4–5). You describe soy as a "complicated social, political, and environmental actor" (ibid., 6) whose 'career as capital' cannot be dissociated from longer histories of ethnic conflict and colonial governance.

Here, soy is not merely an object but also a reference to larger forces, processes, and injustices (6). You treat soy less as a crop, species, or commodity than as a character, whose way of being in the world veers between benign, terrifying, promissory and inscrutable (ibid., 7 and 17).

This really stayed with me because of some striking resonances with how Indigenous Marind communities in West Papua, among whom I've had the great privilege to conduct fieldwork this last decade, characterize the being-of oil palm (Chao 2022). This cash crop, which was introduced by the plantation, inhabits a dispersed ontology. It is a loathed and feared colonizer, that perpetuates in a vegetal guise the ongoing occupation of West Papua by Indonesia. But it is also an object of curiosity, wonder, and speculation, and even pity, empathy, and compassion, because it, too, is subject to the violent dictates of capitalist production and technoscientific governance (ibid., 143–164; see also Chao 2018, 2020). Can you tell us more about the identity of soy within your book—and in particular, what kinds of representational opportunities or challenges arose for you in the process of centering soy's unruly identities? This is not a "plant turn" or "multispecies" story per se—you are doing something different here. What difference, in your view, does that difference make to our understanding of plants, of plantations, and of plant and human health in the anthropocene?

HETHERINGTON. As I tried to figure this out, ten years ago, the multispecies turn was blooming (esp. Kirksey and Helmreich 2010; Haraway 2007). Obviously, that was one literature to turn towards. The ontological turn was also emerging at this time, so that was also a possibility (esp. de la Cadena 2015; Kohn 2013). These were all immensely inspiring to me, but there were a number of reasons to turn away from both turns. The first is that soy is not a plant—I mean, it is, but it is also so much more than that—to try to narrate this story that reduces soy to its plantiness isn't helpful. As for the ontological turn, there was this call ten years ago to "take things seriously" and to take what people said about things seriously. So, you could imagine a turn towards taking the statement "la soja mata" seriously—but "seriously" in that sense couldn't, I don't think, mean "literally" (Archambault 2017). To take what people say seriously in all their complexities, both literal and non-literal, is much more difficult than saying, when people say things have agency, things have agency.

I wanted to sit with the complexity of simple statements and find a way to theorize from there. When people talked about soy and said soy kills, sometimes they were talking about the plants, although fairly rarely. Often, they were talking about the industrial complex behind the plants, Monsanto, genetic modification, corruption at the level of the state, all the pesticides that come with the plant—all these things that were terrifying, but that made soy a wonderful way of moving through complexity and irreducibility. So, you could think about soy as a synecdoche of sorts—as part of a larger assemblage. Or, you could think about soy in actor network theory terms—as something supported by the larger network behind it. Or in feminist terms, as part of endless relations. And there are all kinds of other ways one can think about soy. I wanted all of this to be present in different ways, without ever reducing the story to any one way of thinking.

Because soy's true power, and the power of the statements about soy, arises from its slipperiness with regards to analytic language. This isn't quite the same as saying that soy is ontologically irreducible, the way Latour might (1993). It is rather to perform the difficulty that so many political actors and analysts have tried to get a purchase on the object. As a result, the book is not trying to achieve fidelity to any specific analytic approach, and thereby to stand outside of the fray it describes.

There is one set of arguments which I dwell on more than others, which tries to draw a line between soybeans as a kind of networked agent on the one hand, and more structural accounts of agrarian destruction on the other hand. That begins with the fact that modern soybeans are connected to glyphosate (or Roundup) herbicide as a particular technology of death. People in Paraguay call glyphosate "mata todo," or "everything-killer," because it effectively kills almost all plants it touches. And they don't necessarily mean that as a bad thing—glyphosate is a super useful chemical if you are a farmer. The soybeans we're talking about here, known by their original brand name as "Roundup-Ready," were genetically modified to be the only thing left standing after glyphosate spraying, the cockroaches that survive the glyphosate apocalypse in the fields. And as such, they are an invitation to explore the role killing in general plays in agriculture, in all of its different kinds of forms, and across diverse histories and genealogies of scientific and technological practice. By tracing these histories of agrarian killing, in what I call "agribiopolitics," I show the continuity between earlier phases of settler-colonial genocide and the mass killing of present-day soy monocrops. This is the most novel argument the book makes, and it stands out from the rest of the analytic tussle, but it's still meant to be only one of many.

CHAO. My next question pertains to the role of the government specifically in your account. As you explain, activists in Lugo's government called what they were doing a "proyecto estado" [state project] that revolved around four ideals uniting leftist and centrist political movements—social democracy, ecological modernization, transparency, and the assertion of national sovereignty (Hetherington 2020a, 9). In each of the four dimensions, antisoy activists firmly believed their state project could help halt the spread of soybeans. And yet, the results were rarely successful, in large part because the government and governance itself were set up to enable unsustainable and environmentally destructive modes of soy production. For this reason, you remind the reader that the title of your book, *The Government of Beans*, can be read in two ways—as a body either controlling or controlled by beans (ibid., 10).

Alongside the government, I'm curious about the role of corporations in this story of governance. Here, I'm thinking in particular with Tania Murray Li and Pujo Semedi's (2021) recent work on plantations in Indonesia as a form of "corporate occupation," but also with my ethnographic findings in West Papua, where the state-military-corporate troika renders the one force in many ways indissociable from the other. Indeed, sometimes the line between these entities becomes so blurred that they meld into one, larger, hegemonic system of governance, power, and corruption. Could you tell us about the relationship between the government and the private sector, including scientific bodies, in the story of soy in Paraguay? Do these institutions operate conjointly? Are there corporate standards or regulatory bodies that shape the soy sector,

as with, for instance, the "Roundtable on Sustainable Palm Oil?" In other words, what is the broader landscape of regulatory systems at play, including but also beyond the state itself?

HETHERINGTON. Part of this is specific to Paraguay and part of this is specific to soybeans. When people started the movement against soy, there was this ready-at-hand argument that Monsanto (who created the tech) was the problem, and to a lesser extent, companies like Cargill and Dreyfus that allowed the soybeans to move around (Robin 2008). But in Paraguay these companies were not really present. It was not as if a bunch of multi-national companies descended on the country, imposed plantations, and captured regulatory bodies. In fact, when this wave started, planting genetically modified soybeans was illegal in Paraguay. Companies like Monsanto couldn't show their faces publicly—they were there, working the conversation, but also absent. Instead, the way the crop established itself was through farmers really, really wanting this technology that was available across the border, in Argentina. Brazilians were finding ways to smuggle Roundup Ready soy from Argentina to plant it in fields they owned in Paraguay, and state regulators either weren't able to do anything about it, or they intentionally ignored it. I don't mean this to minimize the responsibility of corporations in doing environmental harm, but to suggest that the agency of beans is far more distributed than a few corporate meanies. This is part of what distinguishes the story of such monocrops from something like a "plantation" of the kind that shows up in your book, where we imagine, or at least where it is possible to imagine, the vectors of control to be much more linear.

The same goes for the regulatory question. Much of the literature about the failure of environmental regulation centers on a story of regulatory capture—that is to say, that there is an ideal way that state regulation works, and that the problems arises when corporates come in and capture regulatory apparatuses and bend it to their will. In this case, however, farmers, with the help of lobbyists from abroad, more or less created the state themselves—the "soy state"—whose purpose from the beginning was to enable a market in soy. Regulation is a key part of what makes monocrops boom; without a whole lot of standardization in the industry at a national, regional and international scale, soybeans could never be grown in large enough quantities to be profitable in a place like Paraguay. The state is a key actor in the meeting of the scales that make a global crop a locally viable one, and vice versa.

But even this regulatory scaling doesn't have to be linear, or always work in lockstep. You alluded to the "Roundtable on Sustainable Oil Palm" in your question. There was an analogous "Round Table on Responsible Soy" (RTRS) which was basically a certification scheme whereby you could certify that your beans had been produced without abusing laborers or breaking environmental laws. It was a very, very weak scheme, but there was a growing market for it globally including, for instance, in the huge Norwegian salmon-farming industry, which uses soy as fish feed. And for a while you could see a proliferation of different soys in the country, chemically identical and yet bound up in different networks and headed for different export markets (see Hetherington 2014). As far as I know, RTRS certification was eventually abandoned in Paraguay. One thing the RTRS made clear was that even these kinds of alternative regulatory schemes were ultimately enabling economies of scale. People in Brazil and Argentina were able to take

advantage of them in a way that Paraguay was never able to because it didn't have the infrastructure necessary to do so.

That said, the book ends up being about these smaller, or tactical regulations that were emerging in different places, at the level of the municipality, some at the level of a little town, between neighbors, or at the level of the government, where people were finding contradictions in the law. For instance, there's a big story in the book about a typo in a law that becomes a way to push a slightly different agenda—one that probably wasn't intended by the people who wrote the law in the first place. So, there were all these little ways in which one could shift the regulatory regime in one way or another, or to differentiate soy into good and bad practices, legal and illegal; to get some political purchase on parts of what otherwise constantly appears as a singular, unstoppable monocrop.

CHAO. Let's turn our attention to smallholders and peasants for this next question—in particular, the relationship between race and labor in the Paraguayan soy sector. The plantation form has, of course, long been associated with, and instrumental to, the exploitation of racialized, enslaved peoples deemed sub-human or non-human before the law (Weheliye 2014), and whose bodies and labors were rendered "fungible" (King 2016) and "thingified" (Césaire 2001) under the governing logic of white imperial modernity. Today, other kinds of "color line" (Du Bois 1990) shape the racialization of the plantation system across its multiple geographies and systems of governance. In West Papua, Melanesian-Malay distinctions often result in the dispossession of Indigenous Papuans of their lands, at the same time as it excludes them from the sites and circuits of palm oil production, in that they are rarely given employment opportunities in the plantation, and companies prefer to bring in their own Malay labor force from Java or from other regions of the Indonesian archipelago (Chao 2021). Such situated racializations often work intersectionally with other kinds of identifiers, both self-determined and imposed—"peasant" or "Indigenous," for instance—that in different contexts, either forcefully incorporate communities into plantation labor regimes, or exclude them from these regimes. With that in mind, could you speak to the relationship between race and labor in the Paraguayan soy sector and attendant struggles for social and environmental justice, and how or whether a comparative approach with colonial plantations is helpful in situating these dynamics across plantations past and present?

HETHERINGTON. As you can tell from the interview so far, I've been fairly reluctant to use the term "plantation" when talking about soybeans, and it rarely appears in my book. We've already alluded to some of the reasons for this, but your question here lets me make it more explicit. I think in Paraguay the more appropriate genealogies here are settler-colonial genealogies which operate through a different logic. They do involve race and labor in interesting ways, but not in the ways we necessarily think about the plantation form. Let me unpack two reasons for this.

First, the genealogy that I trace in this book is set around racialized relations in agriculture during the late nineteenth and twentieth century, especially during a US-promoted land reform that involved taking impoverished mestizo farmers (people who saw themselves as racially mixed, but who spoke Guarani as a

first language and lived near the capital city) and offering them land in the forests of the interior that they imagined to be unused. This was a resettlement scheme whereby mestizos burned forests to plant mainly cotton and tobacco as export crops. As happens wherever land is claimed as empty, settlers encountered other people living off the forest and violently expelled them, reducing Indigenous territories to smaller and smaller sections of the forest.

These mestizo farmers who call themselves "campesinos" were occupying most of eastern Paraguay at the moment when the soy boom started in the 1990s. At that moment, Brazilians living near the Paraguayan border were themselves impoverished and being pushed out of Brazil, and came seeking opportunities for cheap land and low regulation in Paraguay. These Brazilians began pushing Paraguayan off the land. You have a kind of ironic reversal at play in land ownership and use going on here. There is a lot of racialization in these stories, and that goes both ways. Indeed, part of the story of *The Government of Beans* arises from a xenophobic, nationalistic reaction against Brazilian migration, so there is a lot of complexity at play.

But the second difference is that the role of labor is very different from how we might imagine plantations historically or even in contemporary contexts. When you're able to dump glyphosate all over everything and have your beans continue to grow, you don't really need people to do very much. One of the things that characterizes the soy field is precisely the absence of labor. And that itself is a kind of killing: campesinos displaced by soy talked about being killed as a way of talking about losing their livelihoods and jobs. What was particularly complicated about this was that so much of the labor that was being mechanized was precisely a labor of killing: deforesting, ploughing, spraying pests, or shooting other pests. The soy sector mechanizes the labor of killing, and then you have all these people who can no longer find work on the frontier. And yet, they want to be included in the laborers in the process of killing.

In this book and elsewhere (Hetherington 2020b), I talk about this process as "agribiopolitics," which highlights the legacies and transformations of successive forms of settler-colonial violence. I avoid the word "plantation" because despite some similarities, the soy monocrops neither evoke the top-down control we associate with plantation governance, nor the legacy of large-scale coerced labor. We are in a moment when discussions about agriculture in the anthropocene are being taken over by discussions about plantations, which I think is a productive conversation. But I also want to hold open spaces for discussions about other kinds of agricultural assemblages that involve different kinds of labor and racial configurations. I end up calling the formation "monocrop" instead of "plantation"; it's not a perfect alternative, but it leaves a little more space for talking about agrarian processes that are more structural, more diffuse, and whose evils can be more pernicious.

CHAO. Stories have been a recurring motif in our conversation so far, so I want to focus on the craft of storytelling—its scales, its sites, and its subjects. *The Government of Beans*, as its blurb describes (Duke University Press 2020), operates across multiple, interconnected scales. It is a story of local people, plants, and power. It is a regional story of Latin America's failed attempts to revive leftist politics in the early twenty-first century. It is also a global story within a century of expanding monocrops and the destruction

of ecosystems in the service of a specific model of governance over human life and capitalist nature. The subjects here are diverse—campesinos and land rights activists, but also government bodies, scientists, policymakers, laborers, and of course, soy itself. One of the most powerful dimensions of your book is the way it refuses to reduce any site, scale, or subject to a singular narrative, or seek a stable answer to the questions it poses. Rather, the book is structured in a way that "tries to keep up with its objects," and these objects are constantly on the move (Hetherington 2020a, 16).

In this respect, the book mirrors the unruliness, incoherence, and instability that are central to the substance of its stories. I'd love for you to tell us more about the epistemological and ethical stakes behind your decision to write in an open-ended, rather than necessarily conclusive, manner. In part, I'm asking because there's been a lot of talk about the power of storytelling in describing and analyzing anthropocenic processes of extraction, extinction, and emergence (e.g. Chao and Enari 2021). In what ways does the particular kind of storytelling you do (in this work) help convey not just the actions, actors, and events that animate it, but also the moods, affects, and atmospheres that permeate it—both for you as ethnographer, and for your interlocutors?

HETHERINGTON. I struggled constantly in the writing to find the kind of balance that you're talking about. I think there are two things to highlight here. On the one hand, I know a lot of us in the room are in these spaces that are dominated by activist narratives. These narratives are powerful and important to stay with—but they don't always make for good ethnography. The challenge for me was figuring out the relationship between understanding "la soja mata" in one political context and reconciling that with the writing of a book that's going to come out ten years later, with all this weird academic privilege of "slow thought" that we have (Stengers 2016). I wanted to avoid the kind of simplification that I felt I was constantly being enrolled in while I was doing the research. Simplification is a vital political force, but my question as an academic has always been how to use other temporalities to sit alongside those sorts of narratives.

I spent a lot of time reading people who I thought did this well (e.g. Raffles 2011; Fortun 2008; Tsing 2015), and talking to people like Andrea Ballestero (2019) and Kristina Lyons (2020). In terms of the crafting of the chapters, I wanted people to be caught up in the complexity—to try to keep up with the objects—because that was so much part of my own experience. How do you keep up with these stories that invoke a feeling of constantly being one step behind something? How do you evoke that in writing? At the same time, I didn't want to write a book that readers would feel was entirely about uncertainty and being somewhat lost in the world. Part of the challenge was finding narrative techniques that allow you to be engaged in different ways. For instance, through defining characters or scenes that allow you to become affectively connected, or writing chapters that are fairly short and that therefore create a kind of momentum the reader can get into, and then cut and be moved off into a new direction.

The other thing that was really important—and for me (but that also felt super destabilizing and risky during the writing process)—was to adopt a similar approach to theory. In certain spaces, I wanted to speak to political economy, in other places to Foucauldian biopolitics, and in others to multispecies studies, feminist

STS, and actor network theory. I didn't want to frame the book as "this is my take on Foucault" (or this is *the* take on Foucault). I also didn't want an argument that synthesized all of these different thinkers and produced something new out of it. So, if you're looking for a Jason Moore book (e.g. 2015) that's going to build a compelling, propulsive argument about the world and keep you singularly focused on it, then this probably isn't going to be your thing. Instead, I felt my object required jumping around theoretically, being okay with that, looking for opportunities when my interlocutors were doing theoretical work and bringing that in without expecting it to always be coherent, watching the ways that they would get destabilized too. I want to evoke theory as something that we're really all doing all the time as we try to understand what's going on in the world, and not necessarily anything more precious than that.

All of this uncertainty and violence can make the text sound nihilistic, but that is definitely not what I'm aiming for here. One can feel destabilized or upset about what's happening, but a lot of the stories in the book where things are coming together are places where someone finds their footing and identifies a tiny little window for something that is worthwhile. Ultimately, that's what propels the book for me. It's what I call in several parts of the book a kind of "tactical sovereignty." People want to establish sovereignty against the beans without ever being able to do that—but there are these moments where something like sovereignty happens when a kind of analysis lines up with a specific set of circumstances and allows for action. I spent a lot of time exploring the look and feel of those moments. In fact, part of what I hope *The Government of Beans* does is to celebrate the unsung micro-tacticians of this kind of activist work. There are the big stories and the big people—but then there are all these other actors and stories happening behind scenes.

CHAO. I don't think you use the phrase "unsung micro-tacticians" in your book, but I think it's fabulously thought-provoking! Your response, to me, speaks powerfully to how science and technology studies, as an interdisciplinary field, can open up different possibilities for much more wild sorts of thinking than we might sometimes find within our own disciplinary hives. There is an openness to be slippery in the way that one talks about material processes in an STS mode—including through the lens of relationality, networks, and the mobility of different kinds of material engagements. My final question for you is a "where to from here" question. It's prompted in part by the opening of chapter six of your book "The Vast Tofu Conspiracy," where you describe presenting your research in North America and being asked by a vegetarian audience member whether they should stop eating tofu. These kinds of questions, or what you call "tofu moments" (Hetherington 2020a, 70–71), come up regularly when you present the findings of this book, with people often pointing out that soy is present in the room or in the lunch served post-talk. The soy is, in many ways, everywhere—even if we can't see it. It's in our food, packaging, biodegradable cutlery, clothing, and furniture.

Again, there are some real resonances with palm oil here—this ubiquitous, shape-shifting, omnipresent commodity that I've been trying to think-*with* this last decade, and that in many ways, connects us as global consumers to the "shadow places" (Plumwood 2008) of agroindustrial capitalism and other extractive resource frontiers (Tsing 2003). So, this book obviously speaks to us as scholars, but I think it also speaks to us as worldly dwellers and consumers, caught up in "non-innocent" (Govindrajan 2018) or "impure"

(Shotwell 2016) ways with chains of global capitalist production. With that in mind, what do you hope that this book can do, *in* or *for* the worlds that it describes—not just the local space of rural Paraguay, but also the global world that a concept like the anthropocene might help us capture, across all its partial and uneven connections and complicities? What are the practical and political stakes here—in your view, and perhaps also, in the views of your companions in Paraguay?

HETHERINGTON. The "tofu moment" in chapter six was a pivotal moment for me—it was when everything began to make sense, at the same time as it was the moment where everything made the least amount of sense. The chapter starts with that repeated experience of presenting my work and people exclaiming, "Oh no! I'm eating too much tofu!" And of course, the irony of that is that the soybeans are going to feed animals. So, if you're eating tofu, you're actually doing good according to whatever ethical impulse that is moving you at that moment. But then I also kind of love that impulse, in a whole bunch of different ways. On the one hand, it means that some members of the audience are sitting there while I present, feeling that their bodies are connected into these processes in some way and they're uneasy about that. That creates a wonderful opening for thinking about all the various ways that we are constantly being wrapped into these processes. It pulls the rug out from under these simple consumption stories that tell us that as long as you eat the right kind of chicken, you're somehow being a good person in the world. I do think there's something useful in disrupting the farm-to-table ethics of people investing in making perfect and appropriate meal choices for the planet. I do feel that the anxious tofu people are my people in the sense of having a very privileged, ethical approach to the way the world is, and I want to interact with them in more interesting ways (see Haraway 2007).

The other part of your question relates to the concerns of my Paraguayan interlocutors. It's a tough question, but maybe I can put it really simply in saying that what most of the people I work with in Paraguay really want is a better job or some land. This book isn't going to do anything to achieve that. And I think there's something importantly freeing about acknowledging that our books do something else, and not something our interlocutors are asking for necessarily. That puts the responsibility for what a book does in a different place; what could this book do well, and how do I make sure it does?

When my first book was translated into Spanish there was this moment where people saw their experience reflected back at them through the admittedly very strange lens of this Canadian guy who they know and sometimes like hanging out with. Reading one's experience through someone else's gaze, when done with respect and solidarity, can be really interesting and illuminating. Because this often happens long after the extremes of a particular situation have passed—or at a point where the terms in which the politics played out have moved on into something else—the book isn't going to intercede into these situations or terms in any useful way. But it might help people reflect on how they have been relating to them the whole time. There was this lovely thing that happened after my first book was translated, when people came back to me saying "I didn't think of it that way! That's so interesting!" In some ways, that's I think the best that one can hope for, at least in the level of the book. Of course, there are all kinds of other ways of engaging beyond books, that are incredibly important too. I just don't want to engage in a narrative that says that every piece of

academic work necessarily has to be geared toward being politically useful in the present. There is something particularly strange about what we do and if we didn't embrace the possibilities that doing this strange work affords, then I wouldn't keep writing these books.

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