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Hawaiʻi:

GMO Ground Zero

Seeds of Occupation, Seeds of Possibility

Andrea Brower

A thesis submitted in fulfillment of the requirements for the degree of Doctor of Philosophy in Sociology, University of Auckland, 2016.
Abstract

As the primary site for development of all herbicide-tolerant corn seed and with more experimental field trials of genetically engineered crops than anywhere else in the world, Hawai’i is placed at the epicenter of the agrochemical-seed-biotechnology industry’s global chains of production. It is also a node of powerful resistance along that chain. This thesis contributes a previously absent critical analysis of Monsanto, Dow, DuPont, Syngenta, and BASF’s occupation of Hawai’i. It details the political, social, historical, and geographical arrangements that give rise to the situation, with focus especially on matters of capital, expropriation of the commons, imperialism, and capitalist state functioning. It reveals what is presented as natural and inevitable to be merely contingent and explores the battle over the logic of the possible.

While this thesis focuses on the specific case of the agrochemical-seed-biotechnology industry’s occupation of Hawai’i and its resistance, it holds more general lessons for critical scholarship and activism. In the broadest sense, it shows in the empirical case study of Hawai’i how capital operates over land and people, simultaneously dismantling neoliberal common sense that this is all that is possible. In its investigation of how the existing order is reproduced and challenged, it provides a detailed account of ideological and material forces that serve to depoliticize and foreclose alternative arrangements. Finally, it shows how resistance to injustice is itself limited by collective imagination of the possible and why recoding the possible is a most critical terrain of struggle today.

This project is informed primarily by participation in activist mobilization on the island of Kaua’i in 2013 for Bill 2491, local regulation of the agrochemical industry’s pesticide use. It is a project of activist scholarship, with its primary methodology being ethnographic immersion in the struggle from which I write. Two tenets of this research orientation are of special significance. First, the research I offer is a part of, and inseparable from, political and ethical commitments to democracy, egalitarianism, ecological regeneration, and justice. Second, it is from within rather than outside the situation in Hawai’i that I develop insights into its complexities and contradictions and contribute uniquely to both knowledge production and social change.
This thesis is dedicated to West Kauaʻi

Pioneer DuPont fields upwind from Waimea town and river, West Kauaʻi.
Photo credit: Sol Kahn.
Acknowledgments

This thesis is rooted in political movements and my greatest debt is to my comrades. The wisdom, friendship, and fortitude of co-activists, too many to name, motivates and informs these pages.

I am deeply grateful to my supervisor, Campbell Jones, who first encouraged me to embark on a PhD. Campbell has been an extraordinary mentor in having an uncompromising commitment to intellectual and political work, and refusing to separate the two. Uniquely, he fully supported my creativity and decisions that often went against the grain. His confidence in me, especially when it felt undeserved, helped to pull me through some challenging moments.

Manuel Vallée gave far beyond the duties of a “secondary” supervisor. His thorough but empathetic supervision significantly assisted me in completing the journey without sacrificing my wellbeing. He and his family, Alise and Julien, opened their home to me, sustaining me in the last months with shelter, meals, laughter, and kindness.

The University of Auckland has provided a rich intellectual community. I am especially grateful to the circle of rebellious graduate students that has convened and conspired over the past years, and for everything each of you does to make the university a space of learning, dissent, and new possibilities.

Tremendous thanks to Nathalie Jaques for her meticulous reading of this entire thesis and for acting like it was fun.

I could not have made it to Aotearoa without the generous support of Rotary International, which funded my first year of study. The University of Auckland Scholarship carried me through. For funding in a time of cuts to education, I am deeply privileged and appreciative.

Thank you to the Marrows and Drummonds for understanding how important it was for me to have ‘ohana nearby and for stepping into that role. My life in Aotearoa has been much enhanced by everything my te reo whānau has taught me about this place.

My family — Rob, Laurel, Luc, Mallory, and Mong — is my anchor and joy. My parents are an inexhaustible reservoir of love, and responsible for everything I do right. My brother is my constant reminder of the boundless generosity and goodness of the human spirit.
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Abbreviations

ADC — Agribusiness Development Corporation
CTAHR — College of Tropical Agriculture and Human Resources (University of Hawaii)
DOH — Hawai‘i State Department of Health
EPA — U.S. Environmental Protection Agency
GE — Genetically engineered
GMO — Genetically modified organism
HDOA — Hawai‘i State Department of Agriculture
HSPA — Hawaii Sugar Planters Association
IAASTD — International Assessment on Agricultural Knowledge Science and Technology for Development
IPR — Intellectual Property Right
JFFG — Joint Fact Finding Group
NIH — National Institute of Health
R&D — Research and development
RUP — Restricted-use pesticide
TINA — There is no alternative
TRIPs — Trade-Related Intellectual Property Rights
USDA — United States Department of Agriculture
WTO — World Trade Organization
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## Glossary of Hawaiian Words

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<td>Land sections extending from the mountains to the sea that clarified land use and political administration prior to the Kingdom government</td>
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<td>ʻĀina</td>
<td>Land, or “that which feeds”</td>
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<td>Ali'i</td>
<td>The ruling class in indigenous Hawai'i</td>
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<tr>
<td>Haole</td>
<td>White person</td>
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<tr>
<td>Kanaka Maoli</td>
<td>Indigenous people inhabiting Hawai'i prior to 1778. Translated as “true people” or “real people,” the term has been adopted in recent years in relation to Hawaiian indigeneity</td>
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<td>Kānaka</td>
<td>Plural of Kanaka</td>
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<td>Konohiki</td>
<td>Heads of ahupua'a land divisions</td>
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<tr>
<td>Kuleana</td>
<td>Responsibility, privilege, a relationship of obligation</td>
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<tr>
<td>Maka'āinana</td>
<td>Hawaiian commoners, or “the people living on the land”</td>
</tr>
<tr>
<td>Mālama</td>
<td>To care for, keep, nurture, pay heed to</td>
</tr>
<tr>
<td>Mōʻī</td>
<td>Highest chief, King, Queen</td>
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<tr>
<td>ʻOhana</td>
<td>Extended family units</td>
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Hawaiian words are not italicized throughout because Hawaiian is the original language of the place from which this thesis is written.
PART I — LAYING
THE SOIL
CHAPTER ONE: INTRODUCTION — A DETERMINING MOMENT

Another world is possible, indeed immanent, but appears terribly distant. By many indicators, we are living in the best of times for a few and the worst of times for many, with prospects looking increasingly dim as the Earth’s life support systems signal crisis. As Alain Badiou claims, we are already into barbarism but may rapidly sink further into it (2012, 14). Never in human history have social and ecological catastrophes threatened at such global scales simultaneously. It is an apocalyptic moment and for some it has always been (Jensen 2013). Capitalism’s capacity to seize the moment, profiting from and in the midst of cascading ecological degradation and unprecedented inequality, cannot be underestimated (Foster 2002). The logics of capital do not falter when faced with the destruction of the planet and the limits of disparity are not inbuilt. Rather than collapse due to environmental danger or social devastation, “disaster capitalism” has already provided new opportunities for capital to accumulate through catastrophe (Harvey 2014, 142; Klein 2007). The only utopian idea today, as Slavoj Žižek puts it, is that things can go on the way they are with only some “small changes here and there” (2011, n.p.).

The problem that haunts and motivates this PhD journey is how we seem stuck in this bleak present, confined in a logic of the impossible, of only “small changes here and there.” Though capital proclaims expansive possibility in techno-utopian futures and individuals are instructed that they can have anything they desire merely through self-belief, horizons of possibility in regards to the social order appear constricted and immutable. We create and recreate the world everyday but it has become unrealistic in dominant collective thought to believe we might actually create a world structured by logics of egalitarianism, mutual aid, democracy, and ecological regeneration. A social order of remarkable hierarchy, inequality, and human suffering is continually reproduced in ways that give the appearance of inevitability, of “no alternative,” despite abundant evidence of our collective human capacity for something better.

On the horizon are both deeply troubling and hopeful signs. Considerations of what is possible in the social order are beginning to be expanded, with indications that capitalism is at least back up for conversation in the years following the global financial crisis, Occupy, and uprisings around the world (Fisher 2011). In 2015 and 2016 revolts across Europe are turning the dogma of austerity on its head, the largest environmental protests in history are being recorded, a rising
tide of social movements are articulating intersectionality of struggle and demanding systemic change, left-wing candidates are being brought to power by such movements, there is a resurgence in popularity of radical public intellectuals, and criticism of capitalism and the “idolatry of money” is coming from some surprising places (Pope Francis 2015). From within a wave of successive leftist protests that are charting new cross-sectoral solidarities, U.S. millennials at the core of capitalist imperialism are polling increasingly in favor of reconsidering the political economic system (Ekins and Pullmann 2016). Self-described “socialist” (or more recently redefined, “democratic socialist”) candidate for U.S. president Bernie Sanders drew astonishing popular support and 80-90 percent of the under-thirty vote, despite desperate attempts to erase the campaign’s “political revolution” and militant edge. Third Way neoliberal orthodoxy is increasingly giving way to new political formations. It has become all the more critical, then, to examine the realisms, justifications, alibis, and excuses that erupt back against any questioning of capitalism. Moreover, as it tends to, right wing populism has arrived with renewed vigor alongside its leftist relative. The politics of racism, xenophobia, fear, exclusion, and authoritarianism are also galvanizing masses. If one thing is clear, it is that a lot is up for grabs and it is upon us to think big.

Critique that exposes omissions in what is presented as natural or inevitable is vital to the possibility of something other. In particular, this historical moment demands research and analysis that exposes how incredible private wealth is amassed in a time of unprecedented inequality and human deprivation through enclosure and expropriation of what is common. Contemporary capitalist enclosure and ordering of the world unfolds through long trajectories of capitalist and imperial violence. The brutally hierarchical arranging of human life is made upon differentiation of bodies along constructions of class, race, gender, ethnicity, nationality, sexuality, ability, etc. Dismantling the naturalization of such arrangements is an imperative task of emancipatory politics and research. Moreover, because such a world is incessantly posited as the only realistic option, detailed probing of the politics of the possible from within sites of resistance is necessary to reconstructing the possible.

A broad concern around how capital operates over land and people and the logic of the possible underpins this thesis’ interrogation of a particular site of injustice, dispossession, resistance, and battle over the future. With a long history in plantation agriculture and oligarchic rule, today Hawai‘i is an epicenter of Monsanto, DuPont, Syngenta, Dow, and BASF’s global chains of production. Dubbed “GMO Ground Zero” by activists, the most isolated islands in the world host more experimental field tests of genetically engineered (GE) crops than any other state in the U.S. and virtually all GE corn seed touches Hawai‘i in its development. These activities are
almost entirely the domain of the “Big Six” agrochemical-seed-biotechnology corporations, which function as a global oligopoly. Their operations in Hawai‘i are pesticide intensive and occupy and pollute prime public resources dispossessed from Kānaka Māoli (Native Hawaiians). Some call the agrochemical-seed-biotech industry the islands’ new agricultural barons (Voosen 2011). Though their power is immense, resistance is fertile. Three of four counties — encompassing six of seven inhabited islands of Ni‘ihau, Kaua‘i, Moloka‘i, Lāna‘i, Maui and the island of Hawai‘i (Big Island) — have passed bold regulations against the industry. While all are blocked in court, the movement continues to grow and build solidarity across multiple issues.

Two primary questions guide this thesis. First, what are the social, political, and historical conditions and dynamics that give rise to a global agrochemical-seed-biotechnology oligopoly and its local occupation of Hawai‘i? This thesis contributes a unique, previously absent critical analysis that details why Hawai‘i is “ground zero” for development of herbicide-tolerant seeds by a global oligopoly. Second, this thesis asks how the existing order is reproduced and challenged. Specifically, what does the conflict around agrochemical plantations indicate about dominant logics of social possibility today? Exploring what I call the “contest over the possible,” I interrogate how capitalist, post-political, and anti-political ideology bear upon conflict around agrochemical operations, including the challenges and potentials of the GMO Ground Zero Movement.

Examination of this empirical case contributes to more generalizable knowledge of how capital operates over land and people, simultaneously dismantling neoliberal common sense that this is all that is possible. It demonstrates the role of the state and particular capitals in structuring arrangements of the political economy, and especially contributes to understanding of what has emerged in the past decades of hyper-capitalist logic. Moreover, it provides a detailed account of ideological and material forces that serve to depoliticize and foreclose alternative arrangements. Finally, it provides a clarion example of how resistance itself is constricted by, and why it must dismantle, narrow collective imagination of the possible.

Part I of this thesis provides an introductory overview and lays methodological and theoretical groundwork. Part II situates the agrochemical industry’s occupation of Hawai‘i theoretically, empirically, and historically. It weaves together the particular and the universal, focusing attention on matters of capital, the commons, imperialism, the state, concentrated power, racialization, and the distribution of benefits and burdens from particular social arrangements. This section of the thesis begins by tracing Hawai‘i’s long colonial-capitalist history in plantation
agriculture. It then turns to the global and contemporary contexts to examine the emergence of the agrochemical-seed-biotechnology oligopoly, before returning to investigate its placement in the islands. Contra dominant narratives, I argue that it is more than sunshine that makes Hawai‘i’s soils ideal for growing patented seeds engineered to withstand pesticides, and interrogate ideas of naturalness and inevitability for what they elide and sustain. To dismantle constructions of inevitability is to decipher the negated fact of other possibilities.

The critical analysis of Part II provides the context for interrogating the contest over the possible in Part III. As a site that has recently erupted in conflict, the situation in Hawai‘i serves as a looking glass into material and ideological forces that push back against change and confine collective imagination of the possible. Part III details depoliticization and ideas that serve to lock-in and defend injustice, scrutinizing both the actions of the powerful and the wider socio-ideological landscape. As significant, it investigates resistance, including tensions and contradictions within social movements themselves to remake the possible.

While I spend much time tracing themes of inevitability and constricted imagination of the possible, my intention is not to reify them. Quite the opposite; my aim is to reveal what is malleable within situations that appear or are presented as immutable. What runs through this thesis is a constant attention to how things could be different and the very adaptable ideas that sustain current arrangements. I argue that Hawai‘i’s struggle indicates critical fissures in capital’s (im)possible, and conclude that recoding the possible — recovering possibility from the terror of impossibility — is a most pressing task of politics today.

**Research Significance**

There is much that makes the situation in Hawai‘i a productive and important site of research for sociological, agrifood, and social movement scholarship. However, to date there has been no critical analysis of the agrochemical-seed-biotech industry’s occupation of Hawai‘i. No research has systematically detailed the place of Hawai‘i in the food-feed-fuel agro-industrial-complex’s corn production, or more importantly, how and why Hawai‘i has come to play this role. Local impacts of the industry are well-articulated by activists but remain absent in scholarship. Only a limited literature from within the movement has begun to document resistance (Black 2012; Currie 2006; see also Gupta 2015). While these contributions are important, they are deserving of expansion.

Analysis that dismantles assumptions underlying the idea that Hawai‘i is naturally suited to agrochemical plantations is critical to the future of the islands. Moreover, addressing these gaps
in the literature contributes to knowledge about the functioning of the global capitalist agrifood system. Detailing the role of specific sites of production in the monopoly-finance-capitalist food system is important to understanding that system, its nodes of exploitation, and how they are made and sustained. The significance of Hawai‘i’s powerful GMO Ground Zero Movement is similarly of great interest to agrifood scholars and activists. As will be demonstrated, Hawai‘i matters considerably to the agrochemical oligopoly, and the conflicts that have erupted around its operations have consequences far beyond the islands’ shores. At a very material level, what happens in Hawai‘i reverberates globally.

More generally, the specific case is a rich site to investigate matters of capitalism and the logic of the possible. As a site of conflict at a node of powerful transnational capitalist exploit, much surfaces in regards to the ideological and material operations that function to continually reproduce the existing social order. While agrifood scholarship has taken to critique of today’s “politics of the possible” (Guthman 2008a), few studies accomplish detailed probing of the battle over the possible, depoliticization, and anti-politics from within particular conflict and resistance. In turn, wider theoretical insights into depoliticization, anti-politics, neoliberal logic, and possibility have not been applied to the struggle in Hawai‘i. Such analysis illuminates ideological currents that must be upended to make way for wider possibility. Hawai‘i is an especially interesting case study in this regard, as many pressing matters converge around this site. Here, questions around the dynamics of transnationalized capital, the environment, labor, resource conflict, indigenous rights, racialized injustice, democracy, new frontiers of capitalist enclosure, and U.S. imperialism manifest and coincide. Struggles in Hawai‘i reflect this convergence, including contradictions and challenges that arise.

Key to this convergence are matters of agrifood production, which sit at the very center of intersecting crises of democracy, inequality, and ecological destruction. Agriculture, and the dispossession of people from their means to produce food and sustenance, was and continues to be central to the birth and expansion of capitalism (Wood 2003). Global battles unfolding around food and agriculture play a pivotal role in the future of the political economy. Hawai‘i’s bold confrontation with some of the most powerful agribusiness capitals, as well as its colonial position and social location that is somewhat between global North and global South, makes it particularly interesting in relation to expanding agrifood struggles. Of further interest in Hawai‘i and elsewhere, agrifood mobilizations frequently draw together systemic struggle and more seemingly proximate and practical concerns, often also bringing radical and more mainstream progressive politics into the same pot.
The resistance against agrochemical industry operations in Hawai‘i is similar to many other struggles today in that it is a localized struggle against a global corporation’s particular socio-environmental impacts. As capitalism’s environmental contradictions become more pronounced, these types of localized struggles have emerged as primary sites of intervention, especially in regards to food and agriculture, fossil fuels and climate, mining and other extractive industries (Klein 2014). While Hawai‘i’s movement is a local environmental justice struggle for pesticide protections, it is at the same time a confrontation with powerful capital that interrupts its global chains of production. Moreover, it is an affirmative movement asserting alternative visions for livelihoods and resource use, as well as democracy “reclaimed” from its influence by capital, especially transnational corporations. Similar observations could be made of many local environmental and resource struggles today. While largely localized, such struggles are also components of a “constant circulation of ideas, strategies, and experiences occurring across ever-increasing geographic areas” (Shukaitis and Graeber 2007, 30). I will not here make a judgement about these scales and modes of contemporary struggle, which also defy overgeneralization, except to say that they are important spaces of investigation given their prominence in the terrain of social movement activity today and what they reveal about battles over logic of the possible. It is critical to situate these particular struggles in wider context, as well as to investigate how they come up against power and ideology and what is emergent in resistance. While I do not aim to offer overarching conclusions with respect to these sites of struggle, this research contributes much that will be of general interest to social movement scholars and those concerned with social change and the politics of the possible.

A Project of Activism and Scholarship

This thesis is a project of critique, of filling in silences (Harrison 2013), as well as actively augmenting resistance. My research approach is one of inhabiting a site of struggle, and thinking from within it. I locate my work in the diverse orientation of activist ethnography, referring to its foundation of immersion in social struggle as a participant, researcher, and theorist. Different from much activist ethnography, this thesis is not primarily about social movements, although that is a part. Rather, it is my location within assemblages of social resistance, the ways in which that participation informs my research, and my explicit purpose to influence political change, that align my methods with what is variously described as “political activist ethnography” (Smith 1990; Frampton et al. 2006), “militant investigation” (Shukaitis and Graeber 2007), “militant ethnography” (Juris 2007), and activist scholarship (Campbell 2006). From within environmental and agrifood justice movements in Hawai‘i, I develop research relevant to both that immediate context and to wider resistance, aiming to affect both politics and knowledge production.
Stevphen Shukaitis and David Graeber define as “militant investigation” research that intensifies and deepens the political (2007, 9). From within and as part of “multiple and overlapping cycles and circuits of struggle,” these are “forms of investigation and social research that expand possibilities for political action, proliferating tactics of resistance through the constituent power of the imagination” (ibid, 11). What I present in this thesis of militant investigation is concomitantly critique, theoretical analysis, history, empirical documentation of a situation, and an open process of “collective wondering and wandering” within social struggle and with co-activists (ibid, 11). As I elaborate below, I use a fair degree of “methodological pluralism,” incorporating a variety of research strategies and methods in order to engage critical analysis and action consistent with my ethical-political aims (Bisaillon 2012, 616; Taber 2010). While ethnography and participant observation, interviews, critical discourse analysis, examination of texts, and data analysis are all aspect of my methodology, it is the orientation to affect justice through knowledge that guides methodological choice and informs interpretation.

Like other forms of ethnography and sociological research, the investigations of an activist ethnographer “explore how social problems are organized, explicate the social relations coordinating these problems, and uncover what consequences these arrangements have on people” (Bisaillon 2012, 608). Political activist ethnography adds an explicit stance, as well as a commitment to “using knowledge derived from empirically informed research” to inform, expand, enliven, and convoke political struggle and imagination (ibid, 617; Haiven and Khasnabish 2014). Rather than merely describe, the aim is to effect.

Such orientation runs counter to the purported apolitical stance of much academic research today. The stance of neutrality is a declaration of consent to the way things are now; an alibi for inaction and a fantasy of absolving oneself from the ways of the world. Taking a lesson from the great Howard Zinn, “events are already moving in certain deadly directions, and to be neutral means to accept that” (2002, 8). Or from the late anthropologist Eleanor Leacock, whose anti-racist and feminist work was consistent with the approach of activist ethnography, “To attempt neutrality … means to align oneself, by default, with the institutional structures that discriminate against and exploit” (Leacock 1987, 323). While many researchers no doubt intend neutrality, there is an inevitable stance taken in a researcher’s selections and emphases (Zinn 1980). Against positivist assumptions about research, activist ethnography makes “no pretence of objectivity” (Graeber 2009, 33). For the activist scholar, it is both impossible and undesirable to be neutral in the conflicts of the world (Bisaillon 2012; Zinn 1990).
What I am describing here is a research approach that is similar to and builds from traditions of Action Research (Freire 1970; Reason and Bradbury 2001 and 2008; McIntyre 2008), feminist scholarship (Harrison 2007; Craven and Davis 2013), critical indigenous research and methodologies (Smith 1999; Meyer 2008; Denzin, Lincoln and Smith 2008), political environmental theory (De-Shalit 2000), and other longstanding contributions of “radical pedagogues and philosophers” (see Gordon 2008, 8). Feminist scholarship, for example, has been most insistent that the “rationale for the links… [made] among theory, pragmatic research strategies, evidence, and the empirical world” are at once philosophical and political, and feminist knowledge production has from its inception been rooted in social struggle (Harrison 2007, 25; Harrison 2013). Also tied to feminist and other radical traditions, Participatory Action Research (PAR) aims to contribute to social justice agendas and be “liberating, transformative” (Reid and Frisby 2007, 102), particularly by using information gathering to build movements and empower those most directly affected by issues (Incite! n.d., 79). Avner De-Shalit has similarly argued for an approach to environmental political theory that “starts with activists and their dilemmas” (2000, 29).

Much recent work on activist and militant ethnography comes from anarchist oriented literatures (Juris 2007 and 2008; Shukaitis and Graeber 2007; Graeber 2009; Gordon 2008). Marxist social movement scholars have also begun to more robustly locate their work within activism (Barker et al. 2013; Cox and Nilsen 2014). While Marxism’s very origins are from and for social movements, in the pioneering volume *Marxism and Social Movements*, Barker and colleagues argue explicitly for Marxism as “an engaged practice that itself develops and learns alongside those with whom it participates in the effort to change the world” (2013, 15). They assert that, “Marxism is only of value as a contribution to the processes of argumentations and transformation within those movements” (ibid, 15).

All of the aforementioned research orientations share “overtly engaged methods” grounded in an “emancipatory ethos” (Gordon 2008, 8). However, there are also approaches within each that do not figure into my own methodology. Activist ethnography and related methods tend to put emphasis on documenting people’s practices and lived experiences (Craven and Davis 2013; Bisaillon 2012). While this is an important approach for some purposes and circumstances, it is less my focus here. Similarly, my aim is not primarily to be an “enabler or facilitator” of activist “participant” conversations or theory (Gordon 2008, 7; Incite! n.d.; Haiven and Khasnabish 2014), although at times such a role organically emerges. Somewhat related, there is criticism that “listening to activist analyses and then simply parroting these lessons to an academic community” is of little benefit to social movements themselves (Gillan and Pickerill 2012, 138).
Associated with this critique is concern that “activist-centered approaches have tended to downplay discussions of political economy” (Taylor 2015, 67). This is not a leaning that I replicate, and much of the research I carry out from within the movement (including critique of the movement) is firmly grounded in structural critique. In these regards, Barker and colleagues argue that Marxism has an ability to “connect the critique of structure with a strategic analysis of social movements both as they are and as they could be” (2013, 15). While I am less inclined to instruct movements as to how “they could be,” the connection between working within movements and contributing structural critique is fundamental to my project.

This is also not a project of romanticizing and celebrating all “knowledge from the streets” (Maddison and Scalmer 2006, 6), or privileging the perspectives of those within movements over structural analysis as charged by some critics. However, it is a project of collaborative co-theorizing with co-activists, and is set against the idea and practice of activist researcher as expert observer of movements (Gordon 2008, 7). Social struggle is collective, and movement thought is a highly collaborative unfolding as is all human thought. To participate as an activist researcher is to embed oneself in a “particular liberatory milieu towards which s/he remains responsive” (Gordon 2008, 280). In this, one recognizes most especially that “the university does not have any kind of monopoly over insight or theoretical sophistication” (Shukaitis and Graeber 2007, 23). Movements themselves are always engaging in rigorous, theoretical, political, strategic, and organizational research, both of more formal and more organic types (Haiven and Khasnabish 2014; Smith 1999). As Gary Kinsman describes, “Activists are thinking, talking about, researching and theorizing about what is going on, what they are going to do next and how to analyze the situations they face, whether in relation to attending a demonstration, a meeting, a confrontation with institutional forces or planning the next action or campaign” (2006, 134). In their production of knowledge, social movements are spaces of intellectual practice, incubators of new ideas, and primary sites of imaginative possibility (Choudry 2013, Shukaitis and Graeber 2007; Kelley 2002). Recognizing activists as co-theorists and movements as centers of knowledge production challenges dominant assumptions and vocabularies that categorize research outside of universities as “anything but ‘research’” (Smith 1999, 17; emphasis added).

Being embedded in a movement and its complicated and contradictory knowledge production does not mean being incapable of critique (Gillan and Pickerill 2012, 137). As Barker and Cox contend, activist theorizing “is always contested and in process of formation”; it is always knowledge-in-struggle (quoted in Choudry 2013, 133). Rather, to understand and care for something from the inside can give way to the sharpest of critique. As Uri Gordon points out, the
desire to contribute something meaningful to fellow activists and affecting a situation, “provides a strong incentive not to gloss over difficulties or sweep tense issues under the carpet” (2008, 9). While resulting tensions can be met with frustration and even hostility, Wendy Brown offers a helpful affirmation for such moments when she reminds: “critique is not equivalent to rejection or denunciation, the call to rethink is not inherently treasonous but can actually be a way of caring for and even renewing the object in question” (2005, x).

Moreover, deep engagement in an issue can enhance the rigor and validity of research (Harrison 2013; Leacock 1987), especially of complex, contradictory, and sticky moments that are not well understood from the outside. It can be all too easy to draw conclusions about political struggle from the comfortable vantage point of an observer, without fully digging into the real difficulties and dilemmas faced by political actors. I agree with Juris’ suggestion that the tendency of academic researchers to “position oneself at a distance and treat social life as an object to decode, rather than entering into the flow and rhythm of ongoing social interaction, hinders our ability to understand social practice” (2007, 165). Though I do not claim a more “authentic knowledge” as a situated activist researcher (Gillan and Pickerill 2012, 138), I do suggest that it can offer otherwise inaccessible insights, as well as a strong commitment to care and accuracy (Leacock 1987).

A particular advantage of the ‘Political Activist as Ethnographer,’ as suggested by George Smith in his pioneering essay, is the use of “political confrontation as an ethnographic resource” (1990, 629). In their review of Smith, Frampton et al. describe, “by being located outside of and yet constantly in interaction and struggle with ruling regimes, activists can explore the social organization of power as it is revealed through moments of confrontation” (2006, 35). Smith’s hypothesis is most appreciable in Chapter Eight of this thesis, where the experience of disrupting power yields extensive data concerning both institutional and ideological responses. In a Marxist perspective, Laurence Cox and Alf Gunvald Nilsen understand history as shaped by “encounters between dominant and subaltern social groups,” and it is upon activist scholars to also study “social movement from above” (2014, 57-59). As they argue, it is the most powerful in society who “are most capable of producing collective agency in a sustained and effective manner,” including both defensive strategies responding to challenge, and offensive strategies that push back at previous struggles (ibid, 64). Interrogating “resistance from above” (Daellenbach 2015, 251) can be an important contribution of activist scholarship to resistance from below.
The activist ethnographer must make careful and critical choices about where to focus their time and energy, their published writing and critique. Throughout this thesis project, I have made deliberate choices about what research to develop based on the aim of furthering justice. I have also made decisions about what to leave out. For ethical and political reasons, I do not include anything that might compromise co-activists or other individuals, or details about the inner workings of the movement or its tactics. Where activists’ strategies and ponderings are discussed, these are already a part of open conversations, not something I reveal. Especially in the context of an ongoing political battle, there is a need to be careful that our projects do not offer up knowledge to hostile forces (Haiven and Khasnabish 2014, 53). While there are many publishable journal articles that could be written about movement strategy and tactics for example, I have not selected this path given how such information might be used by the agrochemical industry.

Where I do write about the movement itself, I embrace critiques of traditional social movement scholarship as being produced almost entirely for academic audiences, with little relevance to the practical or political concerns of activists themselves (Bevington and Dixon 2005; Frampton et al. 2006; Barker and Cox 2002). At worst, researchers swoop in, collect some data, apply their analytical lens, and “generate new grist for the academic mill,” largely in jargon and journals that are inaccessible to those they write about (Haiven and Khasnabis 2014, 13). My own orientation is not only to put my privilege and power within the university to the service of social movements directly, but also to make my research accessible to wider publics.

Related to critiques of irrelevance, theorists of social movements have often been accused of making movements into “mere abstractions, pieces of data to be categorized, analyzed, and fixed” (Shukaitis and Graeber 2007, 11). Most conventional attempts to make sense of social movements are “akin to taking snapshots. While they capture something of the phenomenon, they frame it, freeze it and separate it from the dynamic, living context in which it lives” (Haiven and Khasnabish 2014, 239). Successes and failures are measured along linear and highly reductionist lines, most typically in terms of institutional impact. I join with Haiven and Khasnabish in asserting that “we need to pay closer attention to the dissonance and the noise, the confusion and the contradiction, the joys and sorrows of the mess” (2014, 239). The militant investigation that I employ here engages movements as living spaces of possibility, always contradictory, and constantly in flux. What is emerging is never entirely knowable and certainly not determinable through reductionist outside observation. Thus, “walking, we ask questions,” committed to actively augmenting emancipatory potentialities as we admit that moving forward is “always uncertain, difficult, and never resolved in easy answers that are eternally
correct” (Shukaitis and Graeber 2007, 11). It is from connectedness and struggle together that one gains the ability to say something meaningful to co-activists (Gordon 2007).

As alluded in these critiques, the term “social movements” is itself problematic, suggesting something that can be easily identified and encapsulated. I find more exact, less reductive and homogenizing, Haiven and Khasnabish’s “diverse assemblages of individuals, organizations and tendencies” (2014, 69), or Shukaitis and Graeber’s “multiple and overlapping cycles and circuits of struggle” (2007, 11). In my own description, resistance around agrochemical operations in Hawai‘i is composed of entangled networks and actions of collectives, with contradictory participants and ideas at play. The concept of “activist” also lends itself to a dubious categorization, and I contend that activism cannot be limited to those who identify as such (Haiven and Khasnabish 2014).

**Methods**

As someone oriented towards activist scholarship, and concerned with making my research mean something to changing the world, it might be said that this project called me to participate and I responded. I was already part way into my PhD research on capitalism, the food system, social change, and possibility, when the situation with the agrochemical industry in Hawai‘i became my primary focal point. The best way to summarize my decision to work within and center my research on Hawai‘i’s agrochemical occupation and resistance is the word kuleana. Translating Hawaiian concepts into English words is an unavoidably flawed task, and involves reducing complex meanings into somewhat incompatible language. Kuleana is most typically translated as responsibility, but it at the same time means privilege (Pukui and Elbert 1986). Rather than a mere obligation, one’s duties to others and the world are also an honor and something to express gratitude for.

As a U.S. citizen and someone who is advantaged in many ways by racialized capitalist class order and global hierarchies, I have kuleana to challenge the forces that undergird that order. My interventions here are not aimed at steering a course for those more marginalized, who have plenty of agency of their own. Instead, I work from my positionality as a white, educated, middle-class, U.S. passport-holding woman to confront that which grants me much more than others. I account for these matters not as a “politics of apology,” but in order to situate this work, my social location, and my kuleana (Haiven and Khasnabish 2014, 23).

Being from Hawai‘i, I also have a particular kuleana to that place, to the soils and communities that give me life. As a first generation white settler born and raised on the island of Kaua‘i, I
have kuleana to the decolonial struggles of Kānaka Maoli, the original peoples of the islands. Of course, our responsibilities to one another are not confined to the proximate, and my work in Hawai‘i is embedded in wider, universal struggle. It is the intersection of my kuleana to affect global change through my research and activism around the imperial-capitalist food system, and my kuleana to my home, that clearly presented a responsibility to participate in challenging agrochemical occupation and environmental injustice in Hawai‘i. I use activist ethnography as a political tool to challenge not only capital, but the movement itself in order to encourage more emancipatory directions.

My activist ethnographic fieldwork for this thesis took place primarily on the island of Kaua‘i and revolved especially around the introduction and passage of Kaua‘i County Bill 2491 during the period of June 2013-January 2014. Bill 2491 mandates agrochemical companies to disclose all pesticide use and establish pesticide buffer-zones around living areas and shorelines. It also initiates a county-led health and environmental study on the impacts of the industry. The Bill is currently blocked in court by an industry lawsuit. While my activist work related to the issue has continued, the period of the Bill’s passage is the time during which I was most wholly immersed and located on Kaua‘i. After this period, I traveled back to the islands in August 2014, December/January 2014-2015, and May 2015, continuing to participate extensively with co-activists while in Hawai‘i as well as when away. At this point, I visited and communicated with activists throughout the islands. While the island of Kaua‘i provides the primary ethnographic data for my research, my research is also informed by statewide activity in the two years following 2013.

Activist ethnography requires deep and intensive fieldwork. For conceptual, empirical, and personal reasons, the island of Kaua‘i during the passage of Bill 2491 was ideal for this fieldwork. Kaua‘i has the highest number of acres occupied by the chemical companies of the Hawaiian islands. It is where political conflict initially erupted most visibly and influenced other islands. In 2013 it was widely called the hotbed of protest against the agrochemical-seed-biotech industry in the United States. It was the first island to introduce local legislation regulating the agrochemical industry, which was then followed by other islands. Related, because of its resistance it is the center of the industry’s counter-movement. The first industry affiliated bloggers and astroturf groups emerged on Kaua‘i and it continues to be the island where the most personal attacks on activists occur. Moreover, due to activists’ Freedom of Information requests, lawsuits, other probing and citizen science, there is the most documentation of impacts. Finally, because I was born and raised on the island and have a history of political work there, I have established relationships and access to communities that
otherwise would not be available. While this research would have benefitted from additional ethnographic fieldwork on other islands, it was outside of the timeframe and scope of a single thesis. However, my participation on Kaua'i was the foundation through which I also established more statewide participation and research that did also inform my findings.

Ethnography is a qualitative research approach with origins in anthropology and sociology (Burawoy et al. 2000; Melhuus, Mitchell and Wulff 2010). It usually involves extended observations in which the researcher immerses herself in the subject of study (Bisaillon 2012, 612). Experience is fundamental; for Deveau, “Experience is a door through which the ethnographer goes to explicate the institutional processes that shape [people’s] experience” (2008, 14). During the most intensive seven months of my fieldwork I spent an average of 30-60 hours weekly as a full time activist organizing around Bill 2491 on the island of Kaua‘i. I was part of a collective of activists that were most intimately involved in drafting the bill and organizing between its introduction and passage (though I myself was not a part of its original drafting). We communicated daily, met 1-3 times each week, and were immersed in every turn of events related to the bill or the agrochemical companies generally. I spent hundreds of hours in meetings with co-activists, over one hundred hours at public hearings, and hundreds of hours researching and writing movement communications.

The types of tasks I was involved with included participating in strategic debates and collective brainstorming, generating media and communications, researching, analyzing a variety of data, facilitating meetings, organizing street actions, lobbying, outreach to and working with a variety of groups and individuals, public speaking, putting on events, designing political art, cooking and other movement reproductive work, and literally getting hands into the soil. To further detail an example of my experience, I was part of a team that functioned within a broad coalition to generate frequent press releases related to Bill 2491. This included extensive communication with and negotiation between coalition members and other activists, research, analysis of media texts, strategic framing and formulating of political positions, co-writing, and media outreach. In addition to these tasks, activist initiatives that I was involved with included not only efforts to pass Bill 2491, but longer-term strategizing, educational and media projects, campaign development, organization building, citizen science, electoral initiatives, and solidarity work.

Ethnography frequently includes formal and informal interviews, which I used to a lesser extent in order to glean more detailed data and insights that might not otherwise emerge in public settings. While interviews were useful, they were only supplemental and secondary to my
primary ethnographic method of daily participation and interaction. My fieldwork included hundreds of conversations, dozens of informal interviews, and around 20 semi-structured interviews. Over the course of the 7-months and then in the two years following I spoke with hundreds of people in Hawai‘i about the issue, including people who were directly impacted, involved in the struggle, had information to share, or just held opinions about the issue. Because my research aim included understanding how public opinion and discourse was being shaped, speaking with a diverse range of residents (as well as people watching the situation from the outside) was key.

In addition to these conversations, I conducted both structured and informal interviews with activists, policy-makers, health care professionals, environmental scientists, farmers, beekeepers, hunters, surfers, Farm Bureau members, residents who believe they are being impacted by agrochemical operations, and Kaua‘i residents who watched but did not participate in Bill 2491. I did not come up with a list of people to interview ahead of time, but rather, this emerged organically as I became deeply immersed in the struggle, built relationships, and was directed to people with important information, experience, insights, or influence. On the informal side, I carried out dozens of casual interviews. Typically these emerged spontaneously at places like meetings, public hearings, at the hospital, or even at unrelated social gatherings. Different from conversations, in these I was the one dominantly asking a series of questions and taking notes, and it was understood that I was doing my doctoral research on the subject. In addition, I arranged around 20 more formal semi-structured interviews that were recorded in written form with consent. Some quotes in this thesis come from these interviews, though most are from media, social media, public testimony, or other public texts. I primarily quote from public texts so as not to compromise people’s privacy or movement strategy. To protect confidentiality and anonymity, when a direct source of data is from an interviewee I have provided a generalized description of the person, unless confirmed that it is acceptable to do otherwise. I have carefully avoided including sensitive material that might compromise another’s privacy, relationships, safety, or otherwise.

The biggest shortcoming of my ethnographic and interview-based research approach was my lack of access to certain communities and individuals. As a highly visible activist I was not able to conduct any longer formal interviews with industry. Most problematically, I was not able to speak at length with current workers, though I did speak with family members of workers and communicated with a couple of past workers. While I had access to some people within the most impacted communities, I am not from these communities and so am always in some ways an outsider.
In addition to and interwoven with ethnographic methods, much of the data that informs this thesis is based on extensive examination of government, legislative, legal, industry, media, and public testimony texts. I collected newspaper articles, opinion pieces, blog posts, social media snippets, online commentary, and press releases around the conflict on a daily basis during 2491 and in the year that followed. I also searched for and through media, state, and industry texts since the 1980’s, when sugar was exiting the islands and biotech was entering, as well as movement texts that started to be generated more significantly since 2006.

My ethnographic field notes, interviews, and collecting of texts produced thousands of pages of raw data. I narrowed what I actually filed by selecting significant highlights and saving these in larger master documents coded and grouped into themes based on threads of my research questions. My system of organizing the data evolved as I developed more coherent ways of categorizing and coding it and new insights through my ongoing theoretical and historical research. I kept extensive notes within all of the data and master documents of the most important overall findings.

Particularly in examining media texts and public testimonies around agrochemical industry conflict, I used analytical tools from critical discourse analysis (Wodak and Meyer 2001; Fairclough 1995). Like activist ethnography, critical discourse analysis is a “dissident research” aimed at understanding, exposing, and resisting social inequality (Van Dijk 2001, 352). With roots in critical linguistics and critical theory, primary tenets of critical discourse analysis include its attention to the ideological work that discourse does and the role of discourse in constituting society and culture (Fairclough and Wodak 1997). I use critical discourse analysis primarily for narrative inquiry, documenting “patterns, themes, and regularities as well as contrasts, paradoxes, and irregularities” (Coffey and Atkinson 1996, 47). Consistent with a critical discourse analysis “mode” (Van Dijk 2001, 352), my examination of texts pays attention both to what is said and what is absent, denaturalizing implicit assumptions and the broader ideas and values that are being promoted (Machin and Mayr 2012, 5).

As myself a co-generator of movement narratives and a responder to industry’s, state’s, and various counter-narratives, my deep immersion in the narratives of the conflict and their background context, production, and actors gave me insight into nuances that could not have been captured in a mere scanning of public texts. I also got feedback on my narrative analysis work from co-activists, which strengthened its accuracy and contributed to our work on the
ground. While a multiplicity of perspectives are always present, what I aimed to identify, analyze, and present out of the data was text that reflected common, well-developed themes.

In rounding off this overview of methods, it is worth briefly extending my “ethnographic narrative” (Plows 2008, 1523) beyond the specificity of activism around agrochemical industry operations in Hawai‘i from 2013 to the present. Rather than an exhaustive account of my involvement in political work, this is a summary of engagements relevant to this thesis. While an “ethical consumer,” charity volunteer, and political protestor in my teens, my political organizing began in my last years at the University of California Santa Cruz in 2005 and 2006, including work with fair trade campaigns, the Immokalee farmworkers, and against the Central American Free Trade Agreement (CAFTA). Following university, I returned home to Hawai‘i, where I was employed by Malama Kaua‘i, “a community-based, 501(c)3 nonprofit organization that focuses on advocating, educating, and driving action towards a sustainable Kaua‘i,” with focus on “‘aina (land), community, and culture” (Malama Kaua‘i 2016). For four years, I developed and ran programs ranging from legislative campaigns around land use, to bi-weekly radio shows, to development of community and school gardens. Much of this work was rooted in the local food movement, and in my last year at the organization I published an extensive study on Diversified, Localized, and Sustainable Agriculture on Kaua‘i: Assessing Opportunities and Addressing Barriers (Brower 2010). Based on interviews, a large community conference, and collaborations with other activists, the report included lengthy suggestions for local action. While I am admittedly critical of much of this earlier work, it has offered an invaluable and evolving perspective. In recent years, my activism has shifted to global social justice, trade, and capitalism, with 2013 marking the beginning of my involvement with campaigns to regulate the agrochemical industry in Hawai‘i. My engagements with global activist networks, in local political conflict, and in community work, all bear on the perspective I bring to this specific activist ethnographic project.

As touched upon, a primary tenet of activist ethnography is to produce knowledge that is meaningfully useful to political struggle (Bisaillon 2012, 608). This, of course, is done constantly in the everyday collaborative work of being an activist and generating movement analysis, ideas, communications, and strategies. However, there is an additional element of responsibility that comes with being a scholar activist, and especially in one’s privileged relationship to academic institutions. While I have used this positionality to contribute substantial research work to co-activists and the movement more internally, I also employ frequent public writing. As Catherine Kingfisher (2011) notes of her own experience, it requires combinations of strategies to make research meaningful to those with whom you struggle, policy audiences, the wider public, and goals of social change generally. An element of making my own research meaningful
and accessible has been to publish across a range of more mainstream and progressive media, including the Huffington Post, Common Dreams, YES! Magazine, Civil Beat, and The Hawai’i Independent (see page 5). Many of the ideas and much of the research found throughout this thesis is also in more accessible form at these sites, as well as on radio and podcast interviews. The reactions and receptions to this writing and public speaking have also figured into my ethnographic experience. I have also published some of the work contained within this thesis in Food, Culture & Society (forthcoming), Capitalism Nature Socialism (2016), and New Zealand Sociology (2013), all aiming to contribute to activist scholarship.

As the kind of scholarship which I partake is uncommon, my thesis also contributes to discussions about the nature of academia and the potentials of activist scholarship, demonstrates an innovative activist ethnographic methodology, and is an argument for a more engaged social science.

**Thesis Overview**

Following the theoretical groundwork laid in Chapter Two, this thesis is divided into two remaining parts. Part II does the work of denaturalizing the agrochemical industry’s occupation of Hawai’i, situating it both historically and currently in dynamics of capital, dispossession, imperialism, power, class and social inequality. This critical sociological analysis provides the context for Part III’s interrogation of the contest over the possible from within a site of injustice, conflict, and resistance.

This thesis begins with the commons, the material and social foundation of humans’ shared being. The power of capital is the power not only to expropriate, fence-off, and feed from the common, but to obscure these processes that order gross inequality. Denaturalizing the situation requires exposing the fantasy and the omissions (Jones and Murtola 2012b, 133), stating the fact of the commons and their enclosure. Chapter Two also examines the role of the state, the transnationalization of capital, and imperial capital today. Drawing on a wide range of literatures, the arguments of this chapter provide theoretical groundwork for the rest of the thesis, destabilizing dominant assumptions about capital, the state, and inevitability. This chapter also serves the purpose of making my biases explicit, implicitly rooting this thesis in the possibility of life beyond capital.

Chapter Three starts the work of situating Hawai’i’s long occupation by capitalist agribusiness. The intention here is not to narrate a complex and contested colonial-capitalist history; for that I
refer to others, and especially to work by Kānaka Maoli scholars to recover some of what has until recently been omitted from official historical narrative (Silva 2004; Osorio 2002; Kame'eleihiwa 1992; Andrade 2008; McGregor 2007). Rather, what is captured here are critical moments of imperial injection of capitalist ideology and compulsion into the islands, especially as related to enclosure of the commons and the emergence of an oligopolistic political economy. This chapter is informed by Hawaiian understanding of the importance of history, reflected in the saying “I ka wā ma mua, ka wā ma hope” — “the future is in the past.” Reading the conditions that facilitated sugar’s dominance in Hawai‘i provides insight for interrogating today’s plantations. Structural arrangements from a plantation past remain largely intact, underpinned by ideology that continues, albeit in variant form, to colonize the social imagination. These legacies are returned to in Chapter Five.

Moving from the local to the global, Chapter Four situates the emergence of the agrochemical-seed-biotechnology oligopoly within dynamics of late capitalism and specifically imperial capital. The chapter proceeds systematically through conditions that facilitate the oligopoly, and examines its current contours. It details processes of enclosure of the commons upon which the private wealth of the oligopoly is amassed, the intensification of capitalist logic in the global food system, capital’s influence over and harnessing of science and technology, and regulatory regimes that shape and are shaped by the oligopoly. Rather than “deregulation” as giving rise to the current situation, the state plays a critical role in enforcing the power of capital and especially specific capitals that have inordinate influence over the state. The policies of neoliberalism, contra being a springboard for efficiency, innovation, competition, market freedoms, and less government, have instead been the breeding ground for oligopolistic corporations that increasingly function transnationally by way of state support.

Returning to the islands, Chapter Five investigates the agrochemical-seed-biotechnology industry’s occupation of Hawai‘i, including racialized and classed health and environmental impacts of intensive pesticide use. In media, state and industry reports, it is simply stated that Hawai‘i’s year-round growing season is its “natural competitive advantage” for hosting agrochemical operations. A more critical and complex reading dismantles this dominant narrative for what it elides and rejects underlying notions of naturalness and inevitability. This chapter examines the centrality of the U.S. state, and why the industry chooses to operate within its regulatory regimes. It then turns to local conditions that facilitate the industry, moving through a short history of original decisions and invitations to establish in the islands. It analyzes public supports, including land, water, tax and direct subsidies, the university, and “externalized” costs. It shows how the industry found in Hawai‘i a socio-physical landscape and power.
structures still partially remaining from plantation days, including communities only recently abandoned by sugar and pineapple. Much of sugar’s infrastructures, institutions, and ideas have been directly inherited by the agrochemical industry, which similarly functions locally by way of consolidated resource control and power, undergirded by U.S. imperial interests.

Chapter Six marks the start of Part III, which turns from the situation to its contestation, investigating depoliticization, the delimiting of social possibility, and emergent challenges. Chapter Six sets the scene, describing Hawai’i’s GMO Ground Zero Movement. The focus is on the eruption of politics leading up to, during, and following Bill 2491 on Kaua’i. This sketch provides the background context for the next chapters’ analysis of the battle over the possible.

Understanding the contest over the possible within localized debates and more broadly requires interrogating the wider ideological-material landscape. Chapter Seven brings together critical literatures on interlinked matters of the inevitability of capital, disavowal of the structural, the post-political, anti-politics, individualism, and structural lock-in. This chapter indicates the terrain that makes intelligible ideas that work to eradicate politics, defend injustice and the power of capital.

Building on themes from the preceding chapter, Chapter Eight traces ideological-material constructions of narrowed horizons of the possible from within the site of the agrochemical-seed-biotech industry’s occupation of Hawai’i. Empirical data contributes to understanding of how depoliticization and the narrowing of possibility unfolds from within local conflict. This chapter shows how ideas about post-political consensus, voluntarism, and science are intertwined with anti-political tendencies and the pervasive notion that capital’s logics and processes are all that is on the horizon. Extensive industry apparatuses of idea production and dissemination are at play, including widespread tactics of obfuscation and activist marginalization. However, it is the deeper matter of what makes the industry’s narratives work in the first place that is of greatest concern in this thesis.

People are, of course, constantly disrupting injustice and dominant logics about social possibility. Chapter Nine analyzes in more critical detail Hawai’i’s GMO Ground Zero Movement, including some of its more significant challenges and potentials. Hawai’i’s movement indicates both a bold interruption of corporate domination and power, as well as the pressing need to claim possibilities beyond capital and engage wider systemic struggle. Following from the preceding chapter, much of this analysis is informed by a concern over false choices and divisions when capitalist logic is the only alternative and structural change is lacking in
consideration. Intertwined with these dynamics is the need to center racial, class, and decolonial struggle in order to build the movement in more emancipatory directions.

In these critiques, I attend to important nuance and openings, aiming to cultivate, rather than to reject, seeds of hopeful futures where they are attempting to bud. Hawai‘i’s GMO Ground Zero Movement is an element of expanding solidarities, politicization, progressive organizing, and decolonial struggle in the islands, as well as a most critical intervention in environmental injustices related to pesticide use. Moreover, I suggest that, while not a “radical” struggle, capitalist common sense is in fact being challenged by logics that emerge around Hawai‘i’s movement. Aspirations and mobilizations for a more just Hawai‘i, food system, and world can be amplified, pushing the boundaries of collective thought towards wider horizons of possibility.

The final chapter of this thesis builds from conclusions of past chapters, arguing that social struggle today must involve reorientation of common sense towards wider horizons of the possible. Emergent democratic and egalitarian political visions indicate critical openings that can be expanded. Recognizing and politicizing the fact that social possibilities are far beyond what is normally imagined is not to resort to utopian fantasy, but to claim what is already immanent within what exists.

Final Notes
It is worth briefly stating for readers what this thesis is not. While written from within struggles around the agrochemical industry in Hawai‘i, it is not a thorough overview or interrogation of that diverse resistance. It is also not a complete history of plantations in Hawai‘i. Though plantations and resistance are central topics, this thesis does not aim to tell a comprehensive story of either.

Further, while this thesis centers on “GMO Ground Zero,” it is not about agricultural biotechnology per se, though it is a necessary part of my investigations. At times, I wished I could leave the entire “GMO question” completely out of the thesis. However, it is intimately bound to much of what I discuss, and ends up necessarily occupying some of these pages. In this, I am not aiming to detail all concerns or debates around the technology, or to draw conclusions “for” or “against” agricultural biotechnology broadly speaking. I have sought to deal with matters of genetic engineering in a way that moves beyond some of the most problematic and reductionist lines of argumentation. As per the concerns of this thesis, my eye is turned towards questions of capital, the commons, power, ownership, control, contested knowledge, and what these things mean for democracy, ecological health, egalitarianism and justice.
To clarify my use of terminology, I use “GE” throughout to abbreviate for "genetically engineered." However, rather than “GEO” (genetically engineered organism), I opt for “GMO” (genetically modified organism) because it is the language used in Hawai‘i. Though the terms are not entirely compatible, and while there is no consensus definition of agricultural biotechnology, I use all consistent with the common meaning of manipulating an organism’s genetic material through insertion of new pieces of DNA or by modification of base unit letters of the genetic code.

Finally, in my focus on capital I do not intend to reduce all social oppression and injustice to its structures, or to consider horizons of social possibility only by way of the political economy. Clearly, white supremacy, patriarchy, imperialism, despotism, and incredible oppression and violence exist outside of and before, while also as part of, capitalism. Moreover, capitalism itself is racialized, gendered, and otherwise differentiates in its exploitations of particular bodies; some have argued that capitalism itself should be understood as “racial capitalism” given its development through constructions of race (Robinson 1983). The centrality of capital to my analysis reflects its most fundamental role in ordering our world, and in driving unprecedented inequality and ecological catastrophe; an ordering of the world that is deeply racialized, ethnicized, gendered, sexualized, and regionalized. As Wendy Brown (2005) summarizes well, capital is clearly not the only significant social power afoot in these matters. Yet, acknowledgement of other social power does not diminish “capital’s awesome power to shape both human history and agentic possibility” (ibid, 69). Indeed, part of what I aim to show is that without confronting the logics and compulsions of capital, much justice remains unachievable.
CHAPTER TWO: THE COMMONS AND CAPITAL

This thesis begins with the affirmation (Badiou 2011) — the truth of the commons, which is at the same time the truth of equality and possibility. It then turns to the essence of capital, the expropriation of commons. Finally, this chapter considers the role of the state, and especially examines imperial capital, transnationalization of capital, intensification of capitalist logic, and the concentration of power and wealth. The arguments of this chapter lay theoretical groundwork for interrogating the agrochemical oligopoly’s occupation of Hawai‘i. The chapter exposes the fact that there is nothing natural nor inevitable about capital’s logics of expropriation, exclusion, and radical inequality, thus signifying the possibility that the world could be ordered by very different arrangements. My own commitments lie in non-enclosed futures that democratize the commons.

The Commons

As “the shared substance of our social being” (Žižek 2010, 213), the commons are the foundation of human solidarity (Linebaugh 2014). Any unitary perspective of how to define the commons is, by definition, oxymoronic (Bollier and Helfrich 2012). As David Bollier and Silke Helfrich write in their introduction to the voluminous The Wealth of the Commons: “the commons can be seen as an intellectual framework and political philosophy; it can be seen as a set of social attitudes and commitments; it can be seen as an experiential way of being and even a spiritual disposition; it can be seen as an overarching worldview” (2012, 3).

As substance, form, thought, activity, and practice, the commons is all that we (re)produce and that (re)produces us. For purposes of analysis, Michael Hardt (2010) distinguishes between two types of commons, the “natural” and the “artificial.” The natural common (Hardt uses the singular rather than the plural) refers to the earth and the entirety of the non-social world, while the artificial common is the result of human labor and creativity, such as ideas, language, affects and so forth. The artificial common is never individualized and always a social production. Swiss author P.M. makes a similar distinction in the essay ‘It’s all about potatoes and computers,’ arguing that, “the future commons really boils down to two elements: access to land (i.e. food, fuels) = bites; and access to knowledge (the capacity to use and improve all means of production, material or immaterial) = bytes” (2009, 17). Žižek (2010) prefers to label these the commons of nature and culture, and then make a further distinction between commons of internal and external nature, thus drawing attention to new biogenetic technologies in particular. In all of these conceptualizations, the natural commons include not only tangible elements (land,
seed, water, etc.) but also the Earth’s very processes, or in anthropocentric utilitarian language, “environmental services.” Žižek also adds a third (or fourth, if one separates the biogenetic from nature) commons of “that universal space of humanity from which no one should be excluded” (2013, 21).

Preferring not to make analytic divisions between types of commons, Peter Linebaugh points out that it is labor that creates something as a resource, and “it is by resources that the collectivity of labor comes to pass” (2014, 13). Linebaugh talks about the act of “commoning” as the (re)production of the commons, turning a noun into a verb in order to emphasize that the commons are made by the incessant activities of commoning (De Angelis 2006). Linebaugh’s conceptualization assists in avoiding reference to the commons as a mere thing; rather, commons are a relationship. Drawing attention to five pages in the Oxford English Dictionary on the word “common,” Linebaugh (2014, 17) notes the opening definition of “belonging equally to more than one,” and etymological roots in com (together) + munis (some kind of obligation).

While Linebaugh’s contributions are helpful to theorizing the inseparability of human-nature, caution is required around anthropocentrism in seeing all commons as related to human-labor commoning. A view of commons as also “belonging” to and being part of non-human lives and their reproduction is necessary. As many indigenous epistemologies teach, a biocentric worldview that recognizes the reciprocity between humans and the rest of the planet also requires respecting and honoring other beings’ sentience (Kimmerer 2013). The view is of a relationship of mutuality and co-regeneration between humans and the rest of the earth, as opposed to one of things or “resources” to be “sustained” for human use and interests.

The cultural, intellectual commons of human labor are expansive, as Thomas Jefferson recognized:

He who receives an idea from me, receives instruction himself without lessening mine; as he who lights his taper at mine, receives light without darkening me. That ideas should freely spread from one to another over the globe, for the moral and mutual instruction of man, and improvement of his condition, seems to have been peculiarly and benevolently designed by nature when she made them, like fire, expansible over all space, without lessening their density in any point. (1813, n.p.)

Human thought itself cannot blossom and prosper void the “intercourse” of the commons (Linebaugh 2014, 15). Hardt writes, “In order to realise their maximum productivity, ideas,
images and affects must be common and shared” (2011, n.p.). Autonomists have argued that production under late capitalism is increasingly production in common: “Our communication, collaboration, and cooperation are not only based on the common, but they in turn produce the common in an expanding spiral relationship” (Hardt and Negri 2004, xv). Campbell Jones and Anna-Maria Murtola elaborate the three ways in which this takes place:

First, production draws on the common, the general intellect, all previously acquired knowledges, sciences and analytic capacities. Second, production is in common, in the sense that work today immediately involves vast networks of cooperative relationships, direct and indirect. Third, production is production of the common, that is, of forms of life, shared experiences and ways of being together. In short, production today is production from the common, in common, of the common (2012a, 641, emphases in original).

While social (re)production is always of the common and in common, the argument made by autonomists and others is that “immaterial or biopolitical production” is emerging in a dominant position to industrial production, which was hegemonic since the mid-nineteenth century (Hardt and Negri 2009; Gorz 2010). Biopolitical production concerns “the production of ideas, information, images, knowledges, code, languages, social relationships, affects and the like” (Hardt 2010, 134−135). The dominance of immaterial production is linked to the rise of “post-Fordism” in the 1970s and changes in both the technical composition of capitalism and conceptualizations of work as production is increasingly socialized.

As with any categorical sweep, a spectrum of thought exists around the commons, ranging from revolutionary, to reformist, and through to coopting (McDermott 2014). Capitalist logics of property and resources are too often the starting point for conversation around the possibilities of the commons today. Scholarship on “common pool resources” and “common property regimes” has contributed immensely to exposing, as both empirically inaccurate and ideologically reactionary, capitalist justifications of inescapably “tragic” human self-interest destroying the commons (Hardin 1968). However, such investigations have been both narrow in focus, and inadequate as a larger critique of capitalist property. The concept “resource,” often tied to the word “common” in struggles ranging from climate justice to anti water privatization, presents its own problematic relationship to capitalist logic; it is the very act of making something into a resource that often dissolves it as a commons (Esteva 2014).

This is partly what decolonial theorist Walter Mignolo (2009) highlights when he asserts that there is a need to attend to differences between the commons in European thought and history, and understandings of “the communal” in ayllus / markas of Aymara and Quechua nations.
Mignolo draws on the work of Patzi Paco to define the communal, referring to collective rights to use and manage natural resources, as well as the rights to share in the benefits of what is collectively produced. A key difference that Mignolo traces rests on the idea of property: “the notion of ‘property’ is meaningless in a vision of society in which the goal is working to live and not living to work” (2009, 31). While such an approach to social organization is found also in European thought and is often central to struggles for the commons, Mignolo's argument is that the idea of “the communal” in many indigenous nations that existed prior to capitalism cannot be subsumed under, and instead needs to be put into conversation with, ideas that were born in Europe as a response to capitalism. For Mignolo, the problem is not just capitalism, but also Occidentalism. Rather than assimilating, notions of the “commons” should invite plural engagement in historical exploration of different social forms in different places and periods (Esteva 2014).

Relatedly, it should be stated that while much of the literature relied on here is Euro-American, a diversity of indigenous epistemology also informs and inspires my sense of, and commitment to, the commons (Kimmerer 2013; Graham 1999). Indeed, these are the philosophies that animated the world prior to the spread of anti-commons capitalist logic that now so thoroughly saturates the imagination. While not intending to appropriate or borrow without reference, much indigenous thought is not contained within English literatures of the western academy. In over-referencing of Euro-American literatures, it is perhaps helpful to note that it is dominant western thought that has been the enemy of the commons, and dismantling those logics from within their place of origin is part of the project of this thesis. Much of what is argued here in regards to a notion of the commons as shared substance of being, not belonging to any one but part of and for all (including generations to come), would simply be “native common sense” (Meyer 2013); such common sense precludes the question “What would it mean to regard ourselves and our world not as property?” (Hardt 2011, n.p.).

Returning to the matter of divergent current uses of the language of the commons, Massimo De Angelis laments, “increasingly, the idea of the commons seems to function less as an alternative to capitalist social relations, and more like their saviour” (2009, 32). Given predictable cooptation, it is worth clarifying that a politics of the commons is understood here as that which resists capitalist enclosure and coding of social life, versus that which enables it. At the same time, the commons are not the mere antithesis of a particular social system (capitalism), but always in excess of it. They are the foundation of all social life and human existence. They exist prior to, after, and in the spaces around and between all capitalist social relations, and should not be reduced in thought wholly to capital’s other.
Enclosures

The history of capital is the history of expropriation of commons. For Marx, the enclosure of common lands across England marked the condition of possibility for capitalism, a process that he referred to as “primitive accumulation,” or the “original” accumulation that had to take place prior to continuous capital accumulation. Thus, he wrote:

The process, therefore, which creates the capital relation can be nothing other than the process which divorces the worker from the ownership of the conditions of his own labour; it is a process which operates two transformations, whereby the social means of subsistence are turned into capital, and the immediate producers are turned into wage labourers. So called primitive accumulation, therefore, is nothing else than the historical process of divorcing the producer from the means of production. (1992, 874-875)

This “divorcing” of people from common lands, forests, and other means of (re)production across England, especially following the 15th century, created a dispossessed mass forced to sell its labor for a wage. The compulsion to participate in the market remains the essential feature of capitalism: “it is only in capitalism that you have a system in which people are obliged, are compelled, to enter the market simply to guarantee their own existence and their own self-reproduction” (Wood and Lilley 2011, 27). Said differently, in a capitalist system there must be not only property, but the propertyless (Wood 2003). Thus, as an historical transition in England, primitive accumulation was an “ensemble of processes” that included separation of people from their means of subsistence, conversion of various forms of property (common, yeoman, etc.) into private property, deepening of socialization of production, and the state’s use of violence and law to support such processes (McCarthy 2004, 336; Harvey 2003).

While the English enclosure movement is perhaps the most thoroughly examined march of commons thievery, enclosures remain a continuous characteristic and strategy of capitalist accumulation. Departing from Marx’s idea of primitive accumulation as a foundational process marked by temporal specificity, Silvia Federici argues, “A return of the most violent aspects of primitive accumulation has accompanied every phase of capitalist globalization” (2004, 12). Continuing expropriation and violence are “necessary conditions for the existence of capitalism at all times” (ibid, 13). Through the 20th century, Rosa Luxemburg (1951), Vladimir Lenin (1999) and others remarked on the necessary relationship between European colonialism and the expansion of capital to new places of exploit, while later contributors argued that mechanisms of
primitive accumulation remain a principal feature of the relationship between capitalist centers and peripheries (Amin 1974; Wallerstein 1979).

More recent scholarship has attended to processes of enclosure that are pervasive, and not contained to peripheral spaces of capitalism. David Harvey (2003) speaks of “accumulation by dispossession” (see also Swyngedouw 2005), some prefer to maintain Marx’s “primitive accumulation” (McCarthy 2004), and various other descriptions like “accumulation by extra-economic means” are used (Glassman 2006; Prudham 2007). While capitalism is a heterogenous set of processes and there are always risks of gathering too much under headings like “enclosure” or “accumulation by dispossession,” the hegemony of capital’s logics and dynamics also demands a political and intellectual thinking “across multiple sites and processes” (Jeffrey, McFarlane and Vasudevan 2012, 1248).

Generally, three important points are made in recent scholarship about accumulation by dispossession: it is a continuous process that is vital to capital, it assumes a wide variety of forms, and in the twenty-first century it has become more extensive and intensive, affecting a broad range of spatio-social activity (Peekhaus 2009; De Angelis 2001). While noted that recent neoliberal accumulation by dispossession is “but the most recent embodiment of a well-established cycle of movement and reconfiguration, investment and production, and scouring, destruction and abandonment” (Heynen and Robbins 2005, 5), there is simultaneously a “systemic deepening” of enclosure processes (Sassen 2010, 25). Modern enclosures have extended the “operational space for advanced capitalism” by commodifying new realms and creating market dependencies on things that were previously outside of the market even in predominantly capitalist economies (ibid, 25).

Shimshon Bichler and Jonathan Nitzan’s (2012) theory of capital as a mode of power departs somewhat from most Marxist perspectives, but draws similar conclusions about accumulation and enclosure. They note that the word “private” comes from the Latin *privatus*, which means “restricted,” and that in this sense, “private ownership is wholly and only an institution of exclusion, and institutional exclusion is a matter of organized power” (Bichler and Nitzan 2012, n.p.). The right and ability to exclude are the foundations of capital accumulation, and thus, capital is nothing but organized power.

Capitalism can be understood then, as socialists and anarchists have long argued, as a “parasite” that feeds off the common (Luxemburg 1951; Graeber 2009; Stuart 2002), and is in constant dynamic motion locating new spaces and places of expropriation. Expropriation is a
systemic compulsion, compelled anarchically by capitalist market imperatives of competition, accumulation, and profit-maximization. While driven by identifiable systemic compulsion, capitalist enclosures across the globe operate in different and divisive ways, and with highly racialized, gendered, nationalized, and regionalized contours. In this regard, it is critical not to gloss over class, race, gender, or other contradictions, or the radical inequalities created between the “99 percent” by processes of enclosure.

The distinction between Hardt’s natural and artificial common, or Žižek’s culture and nature, is useful for enumerating analysis of commons enclosures. Much work has been done on recent enclosures of natural commons; for example, on the latest waves of global land and water “grabs,” including the ways in which they dispossess people of their means of reproduction as capitalist market dependencies are intensified (Zoomers 2010; Cotula 2011; Borras et al. 2010 and 2011). Enclosures of natural commons have also extended deeper and wider than these replicating processes, with recent decades marked by entirely new conceptualizations of the non-human world. Accompanied by “revolutions” in law, policy, markets, and ideology (Heynen and Robbins 2005, 5), capitalist enclosures have encroached life-essential and previously noncommodifiable commons, extending the logic of the market into everything from pollination to the atmosphere, and drilling-down to the basic building-blocks of life (Swyngedouw 2005; Thornes and Randalls 2007; Fairhead, Leach and Scoones 2012).

Attending to the significance also of cultural commons, Jeffrey, McFarlane and Vasudevan write:

enclosure is not predicated on displacement and land grab alone, nor on class exploitation, but on the appropriation of wealth produced in common, from affective ties and cooperative care that characterise so-called ‘knowledge’ or ‘creative’ industries, to the focus on communication, collectivity and inclusion in forms of marketing, advertising and intellectual labour (2012, 1249).

Many, including those drawing from autonomist thought in particular, have argued that cultural commons are increasingly the main source of wealth production: “Science, information, knowledge in general, cooperation, these present themselves as the key support system of production—these, rather than labor time” (Virno 2004, 101). Capital feeds off of the “innovative energies that emerge” from vast networks of knowledge production (Hardt and Negri 2009, 297-298). The cultural commons are produced cooperatively, and thus it is argued that a rising contradiction is taking place in capital’s compulsion to capture “autonomously produced common wealth” (ibid, 141). The contradiction between the social nature of capitalist production and private accumulation has long been noted, but autonomists argue that in today’s
“biopolitical production” this contradiction is dramatically intensified. Whether one accepts the
degrees of quantitative and qualitative shifts in capitalism suggested by autonomists, what is
important here is the measurable proliferation of mechanisms for expropriating cultural
commons as a basis for generation of private capitalist wealth.

Capitalist expropriation of cultural commons predominantly takes place through the generation
of rent based on the ownership of material or immaterial property, acquired by various means
(Jones and Murola 2012a; Gorz 2010; Hardt 2010). A rent is not merely an imposed fee for
some item, but a return on a good that can be harnessed because an owner controls the supply
(Adair 2010, 252). Where free access and dissemination might have been possible and
available, exclusion is established through the creation of artificial restriction. André Gorz writes,
“It is possible, through the privatization of routes of access, to transform natural riches and
common goods into quasi-commodities that will earn a rent for the sellers of the access
rights” (2010, 38–39). Intellectual property right (IPR) mechanisms in forms such as patents,
copyrights, and trade secrets are key to establishing artificial scarcity, and go with practices of
branding, licensing, and contracts, which include monopolistic means of “reinventing” and
enclosing the knowledge of others (Rullani 2000, 90, cited in Jones and Murola 2012a, 642).
The accumulation of capital through rent is based primarily on “a political apparatus that creates
scarcity and exlusivity,” and prices reflect the political apparatus more than market conditions
(Adair 2010, 256).

Significantly, intellectual property is now the largest export from the United States, with an
increasing international push for more restrictive property laws, as will be discussed in later
chapters. Stephen Adair, along with others, argues that “Collecting rents on commodities that
can be reproduced with little or no labor constitutes a new mode of accumulation that has been
instrumental in the growing concentration of wealth” (2010, 253). Indeed, some suggest that the
rise of the “information society” has contributed in significant ways to increasing inequality (Adair
2010; Perelman 1998).

Strategies of expropriation of “cultural” commons are somewhat less theorized than those of
“natural commons,” partly because they are more complex and contradictory, and often take
less obvious forms. It has been argued that part of this complexity stems from the fact that the
more these commons are subject to property relation, the less productive they become (Hardt
and Negri 2009). Moreover, ideas, images, knowledges, codes, languages, and affects are
more difficult to police when subjected to enclosure, and are “under constant pressure to
escape boundaries of property” that inhibit their flourishing (Hardt 2011, n.p.). Yet capital
requires private accumulation and increasingly depends on information commons for its
production processes. Hardt summarizes, “Here is an emerging contradiction internal to capital: the more the common is corralled as property, the more its productivity is reduced; and yet expansion of the common undermines the relations of property” (2011, n.p.).

Entwined with these observations of expropriation of the cultural commons, in today’s post-Fordism, capitalism is ever-more dependent on “the total mobilization” of workers’ mental and affective abilities (Gorz 2010, 16). While beyond the scope of detailed exploration here, autonomists and others identify the ways in which skills, emotions, relationships, and after-work life have become central to work: “what is ‘productive’ is the whole of the social relation” (Lazzarato 1996, 146). The abilities and experience acquired outside of the workplace, in “life,” become central to work itself (Jones and Murtola 2012a, 638). Workers are “expected to become ‘active subjects’ in the coordination of the various functions of production, instead of being subjected to it as simple command,” and with their very soul becoming “part of the factory” (Lazzarato 1996, 134). While feminists have long pointed to capitalism’s reliance on labor outside of its formal production processes (Federici 2004), the suggestion again is that this has intensified and taken additional form in late capitalism.

The things that capital uses, takes, and relies upon — but does not pay for — are extensive, and go beyond concerted strategies of privatization, structural adjustment, IPRs, etc. Enclosure also emerges as a ramification of particular accumulation processes (De Angelis 2007; Harvey 2003). In one of the first manifestos on “the new enclosures,” the Midnight Notes Collective writes:

> The highly advertised disappearance of the rain forest, the much commented on hole in the ozone layer, the widely lamented pollution of air, sea and beach along with the obvious shrinking of our living spaces are all a part of the destruction of the earthly commons (1990, 4).

Capitalist economists might refer to such phenomenon as “negative externalities,” or those costs associated with production that are born by external actors. Like accumulation by dispossession, degradation of the commons can also have the effect of separating producers from their means of production — for instance, factory runoff may disable a downstream farmer’s ability to grow food. Such “negative externalities” are also not contained to their typical examples of environmental and human health consequence, but also impact affective commons of experience and emotion.
Harvey (2003, 2005) and others have argued that the reversal of rights to state pensions, welfare, education, healthcare, and other common property rights won through decades of class struggle should also be understood as a form of accumulation by dispossession. Harvey clarifies that these are processes of not only or even primarily wealth production, but redistribution of existing wealth that is significant to the consolidation of class power. Also contributing to an analysis of recent enclosure processes, James McCarthy suggests that a “primitive accumulation of the conditions of production” is taking place through mechanisms such as trade agreement “investor protection” provisions that expand legal definitions of property expropriation, granting compensation if a given firm’s conditions of production change (2004, 337). Property is being claimed not only as tangible assets but as projected future revenue, with the end result of moving assets and resources from the common and into the private realm through legal maneuverings and class power.

While a full analysis of the ways in which capital expropriates the commons is not intended here, the process that is being illuminated is the capture of commons and acts of commoning that extracts private profit for few. Compelled by the drives of a capitalist economic system, enclosure is also the very foundation of that system. Spanning a variety of forms and mechanisms, dispossession “lies at the heart of what capital is all about” (Harvey 2014, 54). Capital begins from the premise of inequality and exclusion, of some rightfully possessing and others being deprived.

The commons, then, is also the negated truth of equality that precedes capital’s structuring of the world. Humans live in common and from the common; prior to capitalist ordering, the commons equally “belong” to all. The power of capital is the power not only to expropriate, privatize, and feed from the common, but to obscure these processes that arrange gross inequalities. When capitalist enclosure is invisibilized, hierarchy, scarcity, and deprivation are presented as the natural state of affairs. Against this, the truth of the common is also the truth of radical equality.

The State and Imperial Capital

The final section of this chapter turns to consider the state’s role in capitalist enclosure and in late capitalism more generally, including relations of imperialism. It briefly reviews dynamics of capital’s transnationalization, and the expansion and deepening of capitalist logics and powers. Examinations here inform following chapters on capitalist plantation development in Hawai‘i (Chapter Three), the global agrochemical-seed-biotechnology oligopoly (Chapter Four), and conditions that facilitate current agrochemical plantations in the islands (Chapter Five).
The state has always been, and remains, vital to securing capitalist expropriation and maintaining the capitalist economic system. With its monopoly on violence and the authority to define legality, the state manages a system of property, markets, social order, and ideological reproduction, including backing processes of accumulation by dispossession (Harvey 2005; Wood 2003). More than any other social form, capitalism is dependent on legal, political, and administrative order to guarantee regularity and predictability (Wood 2003). The state supplies “an elaborate legal and institutional framework, backed up by coercive force, to sustain the property relations of capitalism, its complex contractual apparatuses and its intricate financial transactions” (Wood 2003, 17). Though states and markets are ideologically presented as opposing forces, the capitalist state most fundamentally responds to, sponsors, and facilitates markets; there is no part of the capitalist accumulation process that is not reliant upon the state (Gindin et al. 2011). At the same time, states themselves are constrained by the coercive laws of capital and especially their imperial impositions.

The state, of course, also redistributes wealth and regulates capital, and is a most important site of struggle over expansion and contraction of the commons and democracy. Or in the formulation of Jacques Rancière, “Every state is oligarchic…But oligarchy can give democracy more or less room; it is encroached upon by democratic activity to a greater or lesser extent” (2006, 72). What follows should not suggest a deterministic, monolithic, or homogenizing view of the role of the state, itself a “malleable product of human interactions” (Gilbert 2013, 10) and a space where divergent actors interact. The state can be theorized as “neither identical with nor a simple instrument of capitalism but complexly entwined with it” (Brown 2007, n.p.).

Since the Cold War especially, the competition that compels capitalist firms is increasingly structured around global markets, while capital has a growing “global menu” of capitalist-states from which to choose (McCarthy 2004, 339). Transnational corporations shop around for the best tax benefits, the highest subsidies, the lowest environmental and labor standards, and the strongest property rights, with circuits of production, accumulation, and finance largely transnationalized and decentralized. William Robinson describes, “These circuits are global in character, in that accumulation is embedded in global markets, involves global enterprise organisation and sets of global capital-labour relations, especially deregulated and casualised labour pools worldwide” (2007, 77). Moreover, transnational capitals often act in international legal-economic regimes as players with equivalent or greater power than some states.
For all of the globalizing tendencies of capitalism, what is today called “globalization” has also rendered states and their capacities more, not less, relevant. Ellen Meiksins Wood writes:

The nation state has been an indispensable instrument in the process of spreading capitalist imperatives, not only in the sense that the military power of European nation states has carried the dominating force of capital to every corner of the world, but also in the sense that nation states have been the conduits of capitalism at the receiving end too. (2003, 22)

As the most reliable insurer of the conditions necessary for capitalist accumulation, the state is more essential than ever to capital and remains a “vital point of concentration of capitalist power” (ibid, 14). Moreover, some argue that today there is an “unprecedented intimacy between capital (especially finance capital) and states” (Brown and Shenk 2015, n.p.), and that neoliberal capitalism has in particular increased the need for a “well-armoured” state (Carroll and Ratner 2005, 12). Clearly, state regulation of social life and intervention into the life of the individual is not retreating alongside “freer” markets; “the hefty administrative apparatus amassed under the welfare state is simply deployed differently” (Azmanova 2015, 11). Like “globalization,” “neoliberalism” is not opposed to the state, but utterly reliant on its power to subject ever more facets of life to market relations and responsibilize the life of the individual (Panitch and Gindin 2013, 195). Rather than being opposed to government, neoliberal ideology might be more accurately described as opposed to democratic government (Hudson 2015). Or, contrary to the purity of laissez faire ideology, actually existing neoliberalism has been characterized by a “consistently interventionist approach” (Gilbert 2013, 9; see also Castree 2005; Peck 2004; Jessop 2002), much of which was well-understood and strongly advocated by its original ideologues (Brown 2015; Mirowski 2013).

The economic power of capital cannot permeate unless the “laws” of a capitalist economy have been extended, which often requires “extra-economic help, both in domestic class relations and in imperial domination” (Wood 2003, 20). In Empire of Capital (2003), Wood argues that a new imperial order took shape following World War II, and that, uniquely, the imposition of capitalist market imperatives on ostensibly independent states has been the strategy of rule. As what she calls the first “truly capitalist empire,” the United States exercises domination through economic imperatives, “making subordinate powers subject to economic compulsions emanating from the United States and from American capital” (Wood and Lilley 2011, 28). Further, Wood argues, the reach of imperial domination by way of operations of the market has been extended far beyond the capacities of direct colonial occupations (2003, 21). While global hierarchy is ultimately
enforced by the U.S. military, the main feature of today’s capitalist imperialism is that it operates as much as possible via economic imperatives. Debt, the rules of trade, foreign aid, and the entirety of the financial system are tools of manipulation for insuring that other economies serve the interests of the dominant global economic powers (ibid, 134). Modern-day U.S. imperialism is not a distinct break from its past, but a later phase of a process that has continued from its original founding as an “infant empire,” as described by George Washington (Chomsky 2008).

There are limitations to Wood’s analysis and especially its overemphasis on U.S. capital to the neglect of the transnationalization of capital itself (Robinson 2007). Usefully, Sam Gindin argues that, “The crucial point about American empire is that unlike national empires of the past, which actually carved up the world, this empire is trying to create a global capitalism and is acting on behalf of global capital and penetrating through capitalist institutions” (Gindin et al. 2011, 109). It is not only the U.S. or its elite that are the benefactors of Wood’s “new imperialism.” The dominant classes, especially of Japan and Europe, are also critical players and contributors in this “greatest empire in world history” (Panitch, Henwood and Lilley 2011, 82). Similarly, Harvey (2003) has argued that it is nearly always an alliance between “U.S. forces” (including international institutions and other dominant states) that puts neoliberalizing pressures on poorer countries, which are most typically seized on by elites inside of those countries. Imperial orders are never entirely tight, monolithic, unidirectional, or without contradiction. Moreover, there are important features of U.S. imperialism and military dominance that cannot be reduced to capital (Chomsky 2008).

Against Wood, Robinson (2007) argues strongly that speaking in terms of a “U.S. imperialism” that favors U.S. capital is largely inaccurate, and that focus should instead be on transnational capitalist exploitation. For example, the International Monetary Fund intervenes in poor countries in ways that open them to capitalists from any corner of the world. He and others contribute a focus on the “new transnational capitalist class” that is unbound from national territories and identities, and that has a set of class interests often distinct from national capitals that create new forms of cross-border alliances and class cleavages (Robinson and Harris 2000; Robinson 2001 and 2007).

While fraught with contradiction, complexity, and competitions between and within different capitals and nation-states, the past decades have certainly witnessed simultaneous imperial manipulation of subordinate states through capitalist institutions and imperatives, alongside the extension and intensification of global capital by way of imperial state power. Post World War II, the economic hegemony of the U.S. and its (shifting) allies was asserted through the Bretton
Woods system, the International Monetary Fund (IMF) and World Bank, and later through the General Agreement on Tariffs and Trade (GATT). Bretton Woods was replaced in the early 1970s with the “Washington Consensus” and neoliberal “structural adjustment” as mediated through the likes of the International Monetary Fund and World Bank. Such adjustments made subordinate states more vulnerable to the pressures of global capital by liberalizing economies, privatizing public services, changing regulations on finance, and gutting social protections and supports.

Also important to this period, in 1994 the World Trade Organization (WTO) was created out of the GATT and became a vehicle vital for increasing the flexibility and profitability of capital. The WTO has legislative and judicial powers that enable states to challenge other states’ laws in the interests of “free trade.” Free trade in practice includes the deepening of capitalist norms and powers, the erosion of regulation unfavorable to capital, and the careful control of trading conditions to benefit dominant capitals and states.

In recent years, following failures of the World Trade Organization to entrench capitalist doctrine to the extent sought, multilateral and bilateral trade and investment treaties have emerged as central instruments of state-capital imperialism, neoliberal restructuring, and establishment of new forms of private property. Such agreements have worked to free capital of regulatory regimes that restrict profit maximization, while extending the regulatory forms that support markets and property. They should be understood not as deregulation, but regulation in a particular form. These forms enable capitalist firms to escape national constraints, while accessing different pools of labor, resources, and markets. While ideologically committed to homogenization and benefitting from certain forms of legal “harmonization” that diminish capitalist regulation, free trade and neoliberal globalization have actually increased differentiation of costs and conditions of production. This differentiation is vital to capital’s maximization of profit (Brenner 1998; Wood 2003). Liberation of capital in free trade policy has been central to increasing the dominance of transnational corporations and international oligopoly groups (Cowling 1982; Foster, McChesney and Jonna 2011).

Of particular import in trade treaties is the advent of “investor protections,” which expand the doctrine of “regulatory taking” that gained ideological currency in the 1980s and 1990s. Under investor protection provisions firms are granted the right to demand compensation for government actions that they claim reduce the maximum conceivable value of their investments (McCarthy 2004, 331). What is being claimed as property is “not only tangible corporate assets (e.g., a factory and equipment), but also extremely optimistic projections of future
revenues” (ibid, 337). Disputes are brought before international tribunals, bypassing domestic courts and elevating individual investors’ standing to that of foreign governments. Corporations are empowered to challenge national laws outside of national courts and unbounded from the legal procedures or norms of any particular country, including the right to outside appeal (Kelsey and Wallach 2012; McCarthy 2004; Harten et al. 2010). Such privileges apply only to investors, and similar suits cannot be initiated against them by states or citizens.

The number of investor-state disputes is increasing exponentially. Before 2000, only 50 cases had been initiated; this number was exceeded in one year alone in 2012, and at least 500 cases have been launched in total (Public Citizen 2016). Cases have been brought against a broad range of national and regional government policies, including for example, denial of a mining permit, public health warning labels on cigarettes, pollution cleanup requirements, medicine patent law, and banning of carcinogenic chemicals. Public Citizen (2016) estimates that under U.S. trade agreements alone, more than USD $34 billion remains pending in corporate claims against governments.

While the state remains the locus of enforcement of capitalist legal, political, and socio-cultural order, international regulatory systems are increasingly important mechanisms of environmental, intellectual property, and other governance. Transnational institutional structures also play a prominent role in coordinating and imposing global capitalism, with complex and shifting relations to nation-states (Robinson 2007, 83).

With increasingly transnationalized capital, the question of how and which capitals are served by various states remains complex, with much empirical contradiction. The U.S. and other states play key roles both expanding capitalist logic and processes globally, while contradictorily attending to the interests of particular capitals. While the capture of states by particular capitals has always been a feature of capitalism, much public discourse circulates today around “crony capitalism,” or the idea that the largest capitalist firms have captured the state in “corporate capitalism.” Foster, McChesney and Jonna (2011) argue that it is critical today to reconsider the question of monopoly power, including as it relates to politics, governance, and imperialism. In speaking of “global monopoly-finance capital” as it has emerged since the late 1970s, they write of “the reality of ever more concentrated political and economic power held by a plutocracy that owns and controls the giant monopolistic corporations” (2011, n.p.). While concentration of wealth increasingly takes place at global scales and through transnationalized circulation of capital, the influence of this wealth bears upon local, national, and international institutions, frequently in ways that have nothing to do with the original location of particular capitals.
Also useful for interrogating privileged state-capital relations, Albena Azmanova (2015) argues that since the turn of the century, redistribution of wealth to specific businesses or sectors of the economy typically takes place within a policy agenda driven by the dogma of achieving increased national competitiveness in the global economy. Though not entirely new, there is a heightened discourse around global competitiveness that shapes state investment and supports in the “new economy,” the “knowledge economy,” and high-tech enterprise. Particular sectors and firms are regarded as “having high strategic importance to the success of the economy as a whole,” and thus able to project their interests as critical to the benefit of society in general (Newell and Glover 2003, 11). Contrary to myths that technological change and innovation are driven primarily by the private sector, states actively drive particular industries, technologies, and markets forward in their massive investments (Polanyi 1944). This has been the case in biotechnology, as well as “most of the radical, revolutionary innovations that have fueled the dynamics of capitalism—from railroads to the Internet, to modern-day nanotechnology and pharmaceuticals” (Mazzucato 2013, 3). In the U.S., recent decades have involved increasing, not diminishing, government “immersion in its own business economy through its technology policies,” with technology firms heavily dependent on publicly provided resources to innovate (Block 2008, 198).

The state, imperial capital, and the past decades’ intensification of capitalist logic and resulting global monopoly-finance capitalism, underlie the emergence of the agrochemical-seed-biotechnology oligopoly. The oligopoly’s starting point is multi-layered expropriation of natural and cultural commons. Likewise, the agrochemical industry’s current operations in Hawai‘i are facilitated by arrangements that begin with capitalist-colonial compulsions and enclosure of the commons. With this attention to fundamental matters of the commons, capital, the state and concentrated power, this thesis turns to the matter at hand: Hawai‘i’s occupation by Monsanto, Dow, DuPont, Syngenta, and BASF.
PART II — MORE THAN SUNSHINE: HAWAIʻI FROM SUGAR TO MONSANTO
For the “West,” and the Rest (Amin 2009a), capitalism was not a foregone conclusion simply waiting to emerge when unshackled by history. Just as its development in the English countryside evolved out of very particular conditions and required the large-scale systematic dispossession of peasants from the commons (Wood 2002; Marx 1992), so too did its imperial spread involve constant and violent expropriations and impositions. As Charles Post (2012) contends, historicizing the origins of capital is critical to thinking the possibility of alternatives. Capitalism has not always been with us, it requires particular arrangements and forms of violence to establish, and it is not an inevitability. To problematize the development of capitalism is to denaturalize it.

While marked by general systemic drives, the development of capitalism in every society is also specific and unique (Post 2012). Attending to particular beginnings is necessary to understanding a place’s present and potential alternative futures. This chapter traces the unfolding of Hawai’i’s sugar plantation economy, with a central focus on enclosure of the commons, the role of the state, capitalism’s coercive and power concentrating dynamics, and imperialism and its deeply racialized expressions. Hawai’i’s loss of political independence was wholly linked to American capitalist agribusiness, and U.S. military and commercial hegemony in the islands remain inseparable. The dominant sense of no alternative to the plantation oligarchy and monoeconomy developed through active displacement of alternatives, the binding of the entire economy to the successes of sugar, the cultivation of worker dependencies, and industry strategies of control, coercion, and paternalism. While sugar production moved to cheaper locations of exploit beginning in the 1970s, its legacies persist, reflected in Hawai’i’s corporate tourism monoeconomy, racialized class structure, concentrated power and resource control, and socio-physical geography. This chapter’s historical details are essential to situating the agrochemical-seed-biotechnology industry’s occupation of the islands today.

What follows is not a comprehensive history of colonialism and its contestations in Hawai’i. It is also not a thorough analysis of the moment at which Hawai’i could be defined as a capitalist society, as historians like Ellen Meiksins Wood (2002) and Charles Post (2012) aim to do in other places. The contributions here are more limited to capturing critical moments of colonial injection of capitalist ideology and structure into the islands, and tracing the emergence of an oligopolistic plantation economy and political order. This is guided especially by the Hawaiian philosophy that a clear understanding of the present is informed by the past — “I ka wā ma
mua, ka wā ma hope: the future is in the past.” Lilikala Kame'elehiwa explains: “It is interesting to note that in Hawaiian, the past is referred to as ka wa mamua, ‘the time in front or before,’ … It is as if the Hawaiian stands firmly in the present, with his back to the future, and his eyes fixed upon the past, seeking historical answers for present-day dilemmas” (1992, 22-23). In order to know where we might go, we need to perceive where we have been.

**Contact**

Hawaiian society prior to contact with Euro-American powers was a product of waves of immigration and changing social structures. Without romanticizing or freezing in time “precontact” Hawai‘i, it is possible to contrast some of its foundational logics to those of the imperial capitalist societies that rooted themselves in the islands at the end of the eighteenth century. Spirituality and sacredness structured peoples’ relationships with one another and the ‘āina. The word ‘āina, translated most commonly today as “land,” more literally means “that which feeds or nourishes” and signifies the relationship between people, spirit, and environment. Carlos Andrade explains: “The dual aspects of spirit and mind remain inseparable from Native understandings of ‘āina, which nourish Hawaiian identity, and mystically and genealogically connect the people to the islands and to generations of ancestors who came before them” (2008, 76). This relationship implies responsibility of stewardship, a concept that structured Kānaka Maoli systems of living. “The ‘āina (land) is the eldest sibling, and therefore responsible for protecting and feeding the younger ones. As younger siblings, Hawaiian people inherit a kuleana (responsibility) to mālama (care for, keep, obey, pay heed to) ‘āina and kalo (taro plant)” (ibid, 25). Mālama ‘āina was fundamental to maintaining pono, or balance between maka‘āinana (“the people living on the land” or commoners), ali`i (chiefs or ruling class), kahuna (priests and experts), deities, and ‘āina. Pono meant that all was in harmony and carried with it an understanding that such balance was dependent upon all being fed, taken care of, and healthy (Silva 2004). A high degree of mutual obligation and concern was implicit in such understandings. Lilikala Kame’elehiwa writes, “Because the ‘Āina is both the Ali‘i Nui and the maka‘āinana, as well as the elder and the younger siblings, Mālama ‘Āina, in traditional times, was truly to care for and serve one another” (1992, 32).

Structured by relationships of reciprocity, production was organized cooperatively around ‘ohana, or extended family units. Commoners freely accessed their means of production, with the commons managed and deliberated amongst maka‘āinana and konohiki (heads of land divisions) (Andrade 2008). Maka‘āinana were able to move between ahupua‘a (land units) and extensive kinship networks allowed them to relocate if they were unprosperous or at odds with konohiki. If famine or other imbalances arose ali`i would be held accountable and deposed, with
the most oppressive ali'i sometimes killed (Kame'eleihiwa 1992). Hawaiian society at the eve of western colonialism was not free from conflict, violence, hierarchy, or class structure. However, it was also defined by structures of communalism and self-determination, mutual aid and reciprocity, redistribution of social wealth, careful stewardship and sacred reverence for the earth. It was a society in which competitive individualism, private ownership and wealth accumulation, unabated exploitation of land for personal gain, and systemic deprivation amongst material abundance would have been structurally impossible and culturally unintelligible.

When contact with non-Polynesian and especially imperially oriented nations expanded in the late eighteenth century, Hawaiian society was undergoing significant change in the warring, conquering, and eventual uniting of the islands under Mōʻī (paramount chief, King / Queen) Kamehameha I. At the same moment, contact with colonists, whalers and other foreigners brought disease that decimated the population and left existing social structures in disarray. Conservative estimates indicate a 70 percent decline in population in the first 50 years of increasing contact, and a 90-95 percent decline by the end of the nineteenth century (Stannard 2000). Historian Samuel Kamakau vividly depicted in the 1800s:

To a people living happily in a pleasant land with purple mountains, sea-girt beaches, cool breezes, life long and natural, even to extreme old age, with the coming of strangers, there came contagious diseases which destroyed the native sons of the land…the land has become empty; the old villages lie silent in a tangle of bushes and vines, haunted by ghosts and horned owls, frequented by goats and bats. (1992, 416)

As the land was increasingly emptied of its people, global commerce and new populations established, bringing not only microbes, guns and novel gadgets, but ideas and compulsions of law and capital.

Hawai‘i’s introduction to global trade was as a provisioning station for fur traders, signifying what Noel Kent describes as a pattern that was to last for the next two centuries: “Hawai‘i as a resource base for the dominant economic-political interests in the Pacific, repeatedly shifting its economic role in reaction to much greater economic transformations originating in the world’s economic centers” (1993, 14). As the market in fur closed, traders turned their attention to extraction of the fragrant ‘ililahi, or sandalwood, which increasingly enabled Hawaiian acquisition of foreign goods through trade. While the resource extraction economy of sandalwood could only be sustained temporarily, a booming pacific whaling industry gave rise to populous port
towns and lasting demand for goods and services. By the mid-1840s, nearly 500 whaling vessels passed through Hawai‘i’s ports annually and the foreign population had grown from under one hundred in 1823, to 1,500 by 1850, boosting demand for local products and increasing the circulation of money in the islands (MacLennan 2014).

During the first decades of global commerce, commoners who previously labored within a structure of reciprocity and for their own ‘ohana were increasingly called on by ali‘i to contribute to harvesting sandalwood or cultivating fields for commercial crops. In increasing numbers, Hawaiians also chose to move to developing towns to work in trades or on ships. While some Hawaiian ali‘i found new luxuries and privileges in their contact with foreign trade, and some commoners sought adventures overseas, it was traders who were “growing rich rapidly” in the new frontier (Kent 1993, 24). As a visitor to Hawai‘i noted, mercantile business was “almost entirely in the hands of the foreigners” (ibid, 24).

Debts incurred to foreign merchants by ali‘i in the sandalwood trade incited the arrival of U.S. warships in 1826 and 1829 to command payment, a harbinger of things to come. Marion Kelly summarizes:

The very earliest experiences of the Hawaiian Nation with the sandalwood trade reveal a direct relationship between foreign investment and local indebtedness. The value of the goods received by the Hawaiian chiefs had been paid for, perhaps several times over. With sandalwood resources exhausted, recovery from debt within any foreseeable future was impossible. (1994, 16)

The submission of a list of claims and demand of payment from a U.S. gunboat captain in 1826, backed by threat of violent enforcement, marked the first treaty between the Hawaiian Kingdom and the United States. In these “negotiations,” the accused debts of the ali‘i and Mō‘ī became the national debt of the people (ibid, 16).

**Enclosure of the Commons**

For many decades after the arrival of foreign commerce to the islands, Hawaiian systems of production and distribution remained dominant and operated mostly outside of the global commercial economy. However, imperialism and global capital compelled rapid and radical transformations. The nineteenth century was one of competitive Euro-American imperialism throughout the Pacific — an “orgy of national enslavement” as Tom Coffman (1998, 63) puts it. Frequent military incursions onto Hawai‘i's shores by Britain, Russia, France, and America
served as a reminder that independence was always tentative at best. Moreover, debt had ensnared Hawai‘i in the imperial-commercial economy before it was even formally recognized as a sovereign nation. Militarily imposed agreements for repayment of debt set in place “a cascade of commercial pressures” (MacLennan 2014, 58), forcing the Mō‘ī to manage the new requirements of generating capital. Concurrently, Hawaiian social structures and belief systems were disrupted by epidemic disease and “death everywhere” (Osorio 2002, 12). In this context of extreme upheaval, new religion and new socio-economic principles promised salvation, life, sovereignty, and ultimately the survival and well-being of the nation.

Missionaries arrived to the islands in the 1820s, bringing with them the bibles of both Christianity and Capitalism, and inserted themselves into critical roles as simultaneous religious converters and “translators of international trade and western law” (MacLennan 2014, 53). While the early mission proclaimed capitalism to be at odds with its values, missionaries’ teachings and subsequent institutional designs were capitalist in form, revolving around private property, possessive individualism, and competitive wealth accumulation. For their part, the missionaries saw their task as the “civilizing” of the nation and “saving” of the people, based largely in the mandates of capital.

From within their limited cultural lens — and assuming their cultural, racial, and religious superiority — missionaries and other Euro-American foreigners could only make sense of Hawaiian society within the framework of feudalism. American naval officer Henry Wise chastised:

> Without an incentive to greater efforts, the country languishes under the same species of feudal tyranny and extortion as in the days of their cannibal forefathers! The islands are rich and fertile; sugar, coffee, and tobacco flourish luxuriantly; and under any other system than the present, there could be no bounds placed upon the advantages and wealth that would follow. (1849, 336)

Liberating commoners from “despotic lords” was simultaneously viewed as a project of unshackling innate human drive to competitive and possessive individualism (Lee 1850, 32). Only these drives could compel man to labor in such a way that would reverse population decline and progress society: “Idleness, poverty and destitution of the means of advantageous labor…shortens the lives of the people” (Bishop 1838, 55). Contemptuous of play and incapable of seeing sophistication in systems of production that did not incentivize competitive accumulation, missionaries feared for the survival of a people “averse to exertion”: “Their
pleasures consist in idleness and the low indulgence of sensual gratification. No enlightened mind needs to be informed that such a people cannot continue long to increase in numbers when they come in contact with the vices of those who visit them from civilized countries” (ibid, 55-57).

Of the Hawaiian land tenure system, missionaries probed, “what inducement can there be for the common people to make any effort to arise and shake off their degradation and poverty?” (Bishop 1838, 57). When Kamehameha III and other ali‘i turned to foreign advisors for counsel in western law and economy they were given instruction in the purist of capitalist economic doctrine from the likes of Francis Wayland:

> God has designed men to labor, yet he has not designed them to labor without reward…as it is unnatural to labor without receiving benefit from labor, men will not labor continuously nor productively, unless they receive such benefit….In order that every man may enjoy…the advantages of his labor, it is necessary…That he be allowed to gain all that he can; and 2. That, having gained all he can, he be allowed to use it as he will…This will require 1. That property be divided. (Wayland 1837, 108-109)

In contrast, Wayland’s writings preached that free access to the commons could lead only to indolence, and a society that would perish:

> The forest of an Indian tribe is held in common, and a few hundred families barely subsisted upon a territory which, were it divided and tilled, would support a million of civilized men. His bow and arrows, his wigwam, and his clothing are acknowledged to be, in the fullest sense, his own. Were these to be held, like his land, in common, the whole race would very soon perish, from want of the necessaries of life. (Wayland 1837, 109-110)

Much conversation revolved around agriculture and the missionary zeal to introduce intertwined ideologies and technologies to the fields of the Hawaiians. Early foreigners to the islands marveled at the sophistication, skill, and ingenuity of Hawaiian farming (Campbell 1825; Ellis 1825; Wyllie 1850, 37). However, death by disease and the diversion of labor into the sandalwood trade had profound implications on agricultural systems by the 1820s. Missionaries and other white settlers mid-century developed a “dim view” (Banner 2005, 280) of Hawaiian farming, disparaging methods like the o‘o (digging stick) and cultivation of food for non-commercial purposes. Farming for profit was proclaimed morally superior and necessary to the
good of society as a whole, with particular attention to land “improvement” through increased productivity and western technologies. Missionary J.S. Emerson wrote:

I think two things are requisite to make the people industrious and provident. First, the feeling that the land they cultivate is their own, for themselves and their prosperity. Second, the feeling that the land is of real value, and capable of being improved in value, and that all improvements are private gain. (in Osorio 2002, 32)

The logic and language of improvement came directly from England’s enclosure movement, during which philosophers like John Locke argued that peasant evictions and the commercialization of agriculture were necessary to the process of turning “waste” into “improved” lands (Ross 1998; Wood 2002 and 2012). To “improve” literally meant to do something for monetary profit. “Improvers” were said to be the ultimate source of wealth in the community, thus adding more to the “common stock” than they took away in expulsion of peasants (Wood 2002, 115). Centuries after Locke, Hawai‘i colonists’ ideas of land improvement as rooted in exchange-value remained dogma.

In particular, to improve Hawaiian agriculture would be to develop it as a profitable export commodity so that the nation could gain the “conveniences and luxuries” that “have now become necessities” (Wyllie 1850, 37). Minister of Foreign Affairs Robert Wyllie advocated that in order to gain woolens, linens, silks, cottons, hardware, and furniture, the nation must specialize in “articles for which the soil of the Islands is well adapted” (ibid, 38):

No intelligent Hawaiian, then, can fail to perceive, that it is the interest of his countrymen to obtain as many of the good things of other nations as they can; and it must be equally clear to him, that in order to get them, it is his interest to be able to offer, in exchange, as many of the good things of his own Islands, as possible. (ibid, 38)

It was not simply the charisma of missionary and other colonists’ ideas or ideals that compelled accommodation of capitalist ideology. Henry Wise observed that King Kamehameha and other ali‘i:

Are much too shrewd not to perceive, with prophetic vision, that the very moment the lands are thrown open to foreign enterprise and competition, a preponderating influence will be acquired by the wealth and intelligence of foreigners themselves, [and] the lands will slip like water through the hands of the chiefs. (1849, 336)
Rather than a “passive acquiescence,” it was a strategic incorporation of foreign ideas and legal structures in the face of colonization that prompted Hawaiian rulers themselves to privatize land (Banner 2005, 309). Pressures for changes in land tenure came early from European and American traders, wanting ownership of house lots, wharves, and warehouses. Temporary grants of land to foreigners whetted desires for more land and secure private titles. These pressures were made impossible to ignore by the presence of foreign warships, including those demanding repayments of sandalwood debts. On two occasions, the British and U.S. governments tried to secure fee simple land ownership by treaty, but Kamehameha III refused, explaining: “[w]e indeed wish to give Foreigners lands the same as natives and so they were granted, but to the natives they are revertable and the foreigners would insist that they have them for ever” (in Banner 2005, 285). Banner (2005) argues that in the 1840s Hawaiian rulers had reason to believe that foreign takeover was imminent, and that they strategically sought to institute legal forms that would be recognized by colonial powers. Noenoe Silva writes, “Creating a nation in a form familiar to Europe and the United States was a necessary strategy of resistance to colonization because there was a chance that the nineteenth-century Mana Nui, or ‘Great Powers’ might recognize national sovereignty” (2004, 9).

Entangled in global trade, with debt, military, and looming occupation pressures, while also negotiating increasing numbers of foreigners in the islands, the Hawaiian governing class began instituting novel forms of western-style law. Designed with the advice of foreigners, the Mōʻī issued in 1839 a Declaration of Rights that implicitly recognized property rights and guaranteed protection to “all people, together with their lands, their building lots and all their property.” A constitutional monarchy was codified in western legal terms in the first constitution of 1840, which also declared land as belonging to the chiefs and the people, and customary land tenure as “in common.” Despite contrary intentions, these initial codifications of property and the state gave way to the privatization process, which began with an 1845 law establishing the Board of Land Commissioners to investigate and determine land ownership. Following two years of debate, Kamehameha then accepted a plan to fully institute a private property regime. The 1848 Māhele divided lands between king and aliʻi, while the Kuleana Act of 1850 gave makaʻāinana the right to claim parcels of land that they lived on and farmed. In 1850, foreigners were granted the right to purchase and own land (Osorio 2002; Kameʻeleihiwa 1992).

While imagined and preached in the language of freedom and sovereignty, national wealth and prosperity, the codification in western-style law of private property in the Māhele abolished freedoms that had previously been institutionalized in communal modes of production based on
equitable distribution, reciprocity, and open sharing of the commons. Relatively few maka‘āinana even submitted claims for land, as ownership was a foreign concept. Andrade (2008) argues that Hawaiians would not have anticipated sudden eviction from lands they had lived on for centuries. Only two years were granted to register claims, which required survey fees that many outside of the cash economy did not have. Further, some historians have argued that it is plausible that commoners believed that if they did not act to change anything, the traditional ahupua‘a system would remain intact, and thus did not see it favorable to attempt to claim a small, exclusive plot of land (Andrade 2008).

Summarizing the significance of the immediate change in social structure, Osorio explains that commoners could now be divested of their lands through sale and “other less scrupulous means without the weight of tradition, custom, konohiki, or Mō‘ī to intercede on their behalf” (2002, 43). Whether a “huge political fiasco or devious theft” (ibid, 46), the Māhele resulted in the dispossession of the vast majority of Kānaka — 80,000 commoners securing 28,000 of 4.2 million acres, or less than one percent — and a massive transfer of resource control, wealth, and power to haole (whites). By 1862, it was estimated that three-quarters of Oahu’s land was under control of foreigners (Hasager and Kelly 2001, 195).

Osorio calls the transformation of ‘āina into private property that took place between 1845 and 1850, “the single most critical dismemberment of Hawaiian society” (2002, 44). While Kānaka Maoli faced confusing and largely insurmountable rules and obstacles in attempting to secure private land titles, more fundamental was the complete reorganization of social relations and systems of production and distribution predicated on the commons (Kame‘eleihiwa 1993). The commoner’s right to a small plot of land with private title was incompatible with ahupua‘a-based production, which functioned by universal access to essential fishing grounds, mountain resources, and water, as well as periods of kapu that limited access to particular resources in order to maintain ecological regeneration. In the interruption of communally oriented ahupua‘a social reproduction and relationship, Kānaka were forced to accommodate a capitalist conceptualization of the individual self, instructed to survive as “competitors rather than as caretakers of the ‘āina” (Osorio 2002, 55). Reciprocal obligations between konohiki and maka‘āinana made less and less sense in a world increasingly defined by written laws and boundary maps located in distant government offices, and resource use systems premised on exclusion (ibid, 56).

Kānaka resisted dispossession but were largely forced to turn to unintelligible and colonial apparatuses of law and courts. Letters and petitions signed by thousands were submitted to the
government and Hawaiian newspapers, asking for redress against oppressive konohiki or the loss of access rights, demanding an end of land sales to foreigners, and calling for the dissolution of foreigners’ influence and positions in government. As haole came to dominate the legislature these pleas were increasingly ignored (Osorio 2002).

**Rise of the Plantation, Loss of the Nation**

The privatization of land was never separate from visions of a capitalist economy and large-scale export agriculture in particular, but after 1850 the rhetoric of plantation agricultural wealth and the overall health of the Hawaiian nation and people became inextricably linked (MacLennan 2014, 62). At the opening meeting of the Royal Hawaiian Agricultural Society, established by King Kamehameha III in 1850, this logic was clearly articulated by William Lee, a primary architect of the land privatization laws:

The importance of agriculture and the necessity for its encouragement as a means of national prosperity must be obvious to all. The culture of the soil lies at the bottom of all culture, mental, moral and physical…It is an axiom of history too plain to admit the question, that until the savage abandons his roaming, hunting, and fishing, and laying aside his vagrant habits, confines himself to some fixed abode and improves the soil, he can never become a civilized being. (1850, 30)

For Lee and fellow advisors, it was not any agriculture, but profit-producing agriculture for export that needed to be encouraged for people to rise above the “immediate wants of their subsistence” (ibid, 32).

Turning increasingly towards capitalist mechanisms to survive under expansive capitalism and imperialism, the Mōʻī actively pursued commercial export agriculture as a strategy for maintaining independence, reducing foreign debt, and developing a prosperous modern nation. Along with the sale of lands to foreigners, loans were given to planters, and the Royal Hawaiian Agricultural Society (populated almost solely by haole) was founded to share experience and research. Different crops were experimented with for their commodity potential, but it was sugar that rapidly became the single dominant industry and transformed the physical and social landscape of the islands.

Commercial sugar plantations were already scattered around the islands in the 1840s, including three ventures owned by the King. Without planter rights to land ownership or the labor of Hawaiians, these stayed small in scale and played an insignificant role in the first decades of
global commercial trade in Hawai‘i. Besides a small number of Chinese producers, who brought their field and milling technologies from China and provided milled sugar to Chinese merchants, most other planters were inexperienced and early ventures were largely failures (MacLennan 2014). Through this “trial-and-error period,” American planters repeatedly drew on the financial support of the government’s treasury and their own mercantile community, beginning “a lengthy practice that mingled the interests of the sugar plantations with government policy and induced regular cooperation among would-be competitors” (ibid, 115). Missionaries and other foreigners with close ties to the Mō‘ī and his advisers had the easiest time buying land and increasingly developed personal economic interests in commercial agriculture, though it was their children who leveraged this historical colonial advantage to reap huge profits (Kame‘eleihiwa 1993).

The American Civil War in the 1860s created a sugar market boom, bringing an influx of capital investment from Honolulu and San Francisco merchants, and leading to the development of the first larger steam-powered mills. The limited liability corporation was created as a means to organize capital, protect investors against long periods without profits, acquire land, and secure a workforce (MacLennan 2014). Many of these plantations were owned and financed by ex-missionaries or their children, and often located on lands purchased in the 1850s immediately following the Māhele, when the government sold large parcels of land to raise revenues. They were the first to divert large amounts of water for irrigation, and most typically cooperated to a high degree within districts to secure resources. These plantations created the wage, discipline, worker debt, and racial segregation policies that would continue to define plantation labor in the islands, including strategies to foster worker dependence for food and shelter. As regions became intensively devoted to sugar production, surrounding resources were sucked into the rhythm of the factory-field, displacing Hawaiian communities and production systems (ibid). Landscapes were transformed from diverse agroecosystems to monocrop fields, tall smokestacks, forests emptied of wood and cleared for pasture, and miles of wooden flumes delivering water to fields.

As MacLennan explains (2014), to be competitive in the world sugar market in the nineteenth century a district had to meet the requirements of abundant capital, the most productive technologies, land use and labor policies favorable to plantation agriculture, and the political power to secure a market in a distant nation. This last criteria was proven insecure at the end of the American Civil War, and planters who were unable to gain financial support from outside capitalists or the government went out of business. However, the small boom had whetted planters’ appetites for the sweet profits of sugar and more deeply tied the Kingdom’s treasury to its successes, triggering renewed efforts for a reciprocity trade agreement with the United
States. Debates about reciprocity revolved largely around the independence of the islands (Osorio 2002). After repeated failures, planters pressured the government to offer Pearl Harbor to the Americans, provoking fierce upset and resistance amongst Hawaiians to the cessation of any territory. Secret conversations continued between haole government ministers and the U.S. military, including a 2-month scoping trip by General Schofield and Alexander that recommended securing Pearl Harbor.

Tensions around reciprocity, independence, and foreigners’ influence were at a climactic point during the most contested election in the Kingdom’s history between Queen Emma and King Kalākaua. Kānaka dedicated to maintaining the sovereignty of the nation mobilized in large numbers, alarming sugar capitalists to the potential loss of the stability they enjoyed. Reflecting a widely held sentiment, Queen Emma declared, “The natives are all awake now to the American intention of taking possession of these Islands for themselves, and they oppose them to their faces….It has taken the Hawaiian Nation nearly 20 years to learn their Dissenting Missionaries’ true character” (in Osorio 2002, 152). Kalākaua, though considered by the haole elite to be somewhat unpredictable and not entirely cooperative, was clearly favorable to Emma, who vocally opposed reciprocity as a clever “lie” (ibid, 167). Though both candidates attracted Hawaiian crowds in the thousands, it was through the haole elite’s “bribery, threats, and cajoling” (Kent 1993, 45) that the electoral votes were secured for Kalākaua. Riots broke out following his unpopular election, enjoining the participation of the Royal Hawaiian Police themselves. On the request of Charles Bishop (banker, plantation owner, and Minister of Foreign Affairs), U.S. and British troops stationed in Honolulu Harbor occupied the streets and arrested demonstrators.

King Kalākaua’s popularity amongst Hawaiians remained unsettled as he traveled across the U.S. working to secure a reciprocity treaty. Haole, however, remained virtually unified in their advocacy that in order for the nation to thrive, capitalist agriculture must thrive. In 1876, against the opposition of the majority of Hawai‘i’s people, planters were finally able to secure a seven-year treaty with the United States. While Kalākaua was successful in keeping cessation of Pearl Harbor out of the treaty, its temporary tenure kept conversations about closer political ties to the U.S. alive amongst planters.

Investment in sugar plantations ballooned immediately following the treaty signing, with 42 new plantations appearing in the first four years alone (MacLennan 2014). One newspaper described efforts to increase sugar production following the treaty as a "veritable mania" (Beechert 1985, 80). Famously, within days of the treaty's signing, San Franciscan capitalist Claus Spreckles
boarded a ship to Hawai’i and secured nearly half of the crop for that year to send to his California refinery. Upon arrival to the islands he bought land, water rights, and started the largest and most technologically advanced plantation in the islands, as well as an irrigation company and steamship line. While Spreckles himself would not stay in the islands, he left a lasting legacy in his model of vertical integration that would soon be taken to a new level by the “Big Five” oligopoly sugar corporations.

By 1890, ten times as much sugar was being harvested and exported to the U.S. as in 1876, when the treaty was signed (Kent 1993). Reciprocity had encouraged dependence on an export sugar plantation economy, and subordination of all alternatives: “In such an encompassing monoculture economy, ‘economic diversification’ meant at most the production of a few agricultural export crops, like coffee and rice, for the same markets to which sugar was sent” (ibid, 46). Osorio argues that the treaty had the most significant effect on Hawaiian government and society since the Māhele, benefiting a small class of haole capitalists and promoting the “plantation economy over the still viable subsistence of the Kānaka” (2002, 166). Looking back at how the treaty locked Hawai’i in to both an economic path and dependence on the U.S. — as well as how it brought tremendous wealth and power to those who would then bring the government further under their control — Kanaka politician Nawahi’s words at the time, “the first step of annexation later on” are prescient (ibid, 168).

By the time the Reciprocity Treaty was up for renegotiation, sugar was synonymous with the island’s economy, exclusively dependent on the U.S. market. Hawaiian rulers through the nineteenth century had sought to develop a legal system that would be recognized by other nations and to create the conditions for foreign commerce that it believed would ensure national economic independence (Banner 2005; Osorio 2002). However, as a foreign capitalist elite rose out of those conditions — which they had advised the creation of — and gained wealth and power in the islands, they increasingly found their interests incompatible with those of the Hawaiian monarchy and national sovereignty. Much of the business elite regarded Kalākaua and his privileged haole advisors as increasingly acting outside of their control, viewing the King’s relationship with recently arriving competitors as undermining their carefully carved spaces of political power. Further, the King’s cultural revival, amongst calls of “Hawai’i for Hawaiians,” put him in direct confrontation with missionaries and stirred sentiment amongst Kānaka that the haole minority perceived as threatening political stability and their power in the islands (Silva 2004; Osorio 2002).
In 1887 a small group of haole, the majority born in the islands and descended from missionaries, founded the Hawaiian League to organize around a new constitution. Under the threat of violence, the King was forced to sign the Bayonet Constitution, terminating nearly all executive power and royal authority and expanding the political privileges of foreigners. Businessmen entered the legislature in large numbers while Hawaiians’ and Asians’ suffrage and political rights were severely limited or exterminated by property qualifications and race discrimination (Osorio 2002). Sugar interests were now firmly placed to be “the final arbiters of the kingdom’s spending and taxation” (ibid, 249). The same year of Bayonet, the Reciprocity Treaty was renewed with the granting of further military and other strategic control to the U.S., including the cession of Pearl Harbor.

Within only a few short years, sugar interests were again shaken by changes in U.S. policy that eliminated their preferential treatment, triggering new and more widespread support amongst the capitalist and foreign elite for complete annexation. Prior to the Bayonet Constitution, a majority of the business elite in the islands opposed annexation, for fear that “any attempt to take over the Islands or to foment insurrection among the foreign residents would destroy what was, in many ways, a very manageable relationship” (Osorio 2002, 131). However, conditions changed as the capitalist elite was emboldened post-Bayonet and the U.S. indicated that it would require increasing political and military power over the islands in exchange for economic relations favorable to sugar. As King Kalākaua’s sister and successor Queen Liliuokalani fought to restore the 1864 Constitution and the power of Kānaka, a small group of haole calling themselves the “Committee of Safety” plotted and orchestrated the American military-backed overthrow of the Hawaiian Kingdom in 1893. While the blow-by-blow deposing of the Hawaiian monarchy was carried out mostly by missionary-descendent American elite, and matters of annexation to the U.S. provoked considerable disagreement among a small faction of sugar interests, ultimately the new regime was catered to sugar. As Edward Beechert writes, “the question of sovereignty and the welfare of the sugar industry were never separate issues in the political maneuvering of the nineteenth century” (1985, 61).

Hawaiians continued to fight for lāhui (the nation / the people), battling within the courts and legislature, attempting a coup to reinstate the pre-Bayonet constitution, and mobilizing some 95 percent of the Native population to sign a petition against annexation (Silva 2004). Ultimately, however, the imperial and capitalist ambitions of the U.S. reinforced the interests of the local American elite. “Eighteen men representing nobody” was a popular comment in regards to the overthrow of the queen (Kent 1993), but those men were in fact represented by the presence of
U.S. warships in Hawaiian harbors, as they often had been through the period of colonial-capitalist development.

For several years, annexation was stalled by vehement racist debates within the U.S. about acquiring a territory of “leprous Kānakas” and “mongrel senators” (Kent 1993, 65). Responding with their own racism, the white minority in Hawai‘i declared that their propertied interests were threatened by the Hawaiian-Asian majority and that they required United States support. Sugar lobbyists traveled to the U.S. to warn Congress that if it did not act decisively, the islands would be taken by another “foreign people” in the “white race against the yellow” (Hawaiian Star 1897, 4). The Pacific Commercial Advertiser appealed to Americans: “There are hardly 2000 of us ‘able bodied’ men who are trying to hold the fort of white civilization here against 80,000 or more, who oppose us. We need to make our frontage solid as granite” (1898, 4). However, the pleas of white capitalists in Hawai‘i remained in contest with other American racists fearing incorporation of a non-white nation, sugar beet manufacturers, and Kānaka and their populist U.S. supporters.

War tipped the scale. In the first explosions of the 1898 Spanish-American War, America’s “Manifest Destiny” in the Pacific was given new vigor, and the strategic importance of Hawai‘i to imperial ambitions finally raised the American flag over the islands (Coffman 2003). Military and commercial hegemony would remain unseparated and inseparable. As the San Francisco Evening Bulletin editorialized, Hawai‘i was: “the center point of the North Pacific. It is in or near to the direct track of commerce from all Atlantic ports…It is the key to the whole system. In the possession of the United States, it will give us command of the Pacific” (in Kent 1993, 66). Thus, the islands were forcefully integrated into the nation that has since 1776 (and even prior to its founding), been the bastion of white supremacy and capitalism.

The Capitalist State

While capitalism as a system is relentless in its dynamics of growth, enclosure, and commodification, there is nothing pre-determined about its injection into new frontiers or how it shapes them. For capitalist plantation agriculture to become established and thrive in Hawai‘i, it required both imperial nations enforcing their commercial demands on the islands and the backing of a local state, which was often accomplished through “ruthless political maneuvering” (Coffman 2003, 42). From privatization of land in the mid-nineteenth century to an American territorial government virtually negotiated within the control of a small oligopoly, the Hawaiian state was increasingly a capitalist one, working to secure the interests of a capitalist order and particular capitals above all else. Contestation over the role of the state and
resistance to its capture by sugar capitalists was always present and was sometimes itself codified into law. At the same time, a dominant trajectory took shape through the interactions of particular business interests and the state. Without favorable land, water, forest, labor, infrastructure, tax, and trade policies, sugar could not have been profitable on the global market and a sugar elite could not have amassed such wealth and power.

To survive in the nineteenth century global sugar market, a producing region had to be expansive. New mills were large and required extensive acreage to feed their boilers, while rapid adoption of new technologies demanded significant amounts of capital and thus large and consolidated enterprises (MacLennan 2014; Mintz 1985). In Hawai‘i, delivering large tracts of land into cane production required government policy to both access vast acreage, as well as water diversion rights to facilitate higher productivity and expansion onto dryer lands.

During the first sugar boom in 1867 there were 10,000 acres in production; by 1898 there were 125,000 acres and by 1920, 236,000 acres were devoted to the monocrop — a massive and rapid acquisition of land by the industry. MacLennan (2014) estimates that within only a few decades following the Māhele almost all of the most usable agricultural lands were in the hands of plantations and ranches, either held privately or through long-term low-rent government leases. Early acquisition of fee simple property by missionary families and other foreigners in the islands, including through marriage to Hawaiian women, enabled some of the first commercial plantations and contributed to the lasting legacy of consolidated land ownership. In the fifteen years following the Māhele land sales were rapid, fueled by speculation about the promises of agriculture and future land values. By the mid-1860s most of the best government lands had been purchased and the government shifted its policy to leasing rather than selling its lands (ibid).

The 1887 Bayonet Constitution coup that robbed the Mō‘ī of its power and disenfranchised Hawaiians led directly to planters’ increasing success in gaining large long-term leases. Several years later, the overthrow of the Queen and establishment of a temporary Republic provided planters with a window for developing policy that continued to serve their control over land. Proposed as a way to open public lands for small farmers, the 1895 Public Land Act combined crown lands into government lands, which could then be leased or sold (Van Dyke 2008). Three appointed commissioners made all decisions about these lands, which in essence were alienated from the Hawaiian Kingdom and Kānaka. Plantation and ranch acquisitions happened quickly, nearly doubling in acreage to 1.4 million leased government acres from 1890-1898,
while homesteads taken up in the same period totaled only about 10,000 acres (MacLennan 2014, 262).

Following annexation, a debate ensued concerning who would manage public lands, with some complaints from the U.S. military that lands it sought control over were already tied up in sugar leases. While ultimately the laws of the Republic were kept mostly intact, anti-monopoly concerns in Congress did reduce the lengths of leases and sizes of land parcels that could be sold. However, the industry successfully lobbied around ideas of “unrealistic” laws to insure their renewal of large leases (MacLennan 2014). Further, despite rhetoric in Congress about limiting sugar’s land monopoly, land acquisitions actually grew during the two decades following annexation, with regular evasion of federal law. Acquired at rates like 2 cents an acre per year, and sizes like Hawaiian Agricultural Co.’s 190,405 acres or Waiakea Mil Co.’s 95,000 acres, it is estimated that over half of all land in sugar production was leased “public” lands (Kent 1993). The significance of this exceptional government subsidy to the lucrative profits of the industry cannot be overstated. On the occasions that the U.S government expressed concern about concentration of land ownership in Hawai‘i and sought to limit leases of government land, the industry turned to lobbying, territorial government-enforced law-breaking, and other mechanisms to evade restrictions (MacLennan 2014).

Pre-contact Kānaka agricultural systems used sophisticated ‘auwai (ditch) technology to divert streams and irrigate their fields, and utilized elaborate methods of timed water diversion to ensure equitable access. Water was understood to be the source of all life, and was revered as a physical manifestation of Kane (one of four major Gods). Misuse would result in forms of sanction by the community through the konohiki. After the Māhele, the law — largely inaccessible to the commoner — became the arbitrator of water rights. Early Hawaiian Kingdom law regarded water as a common-use resource and validated the ancient water rights of Hawaiian users. This principle gradually changed as government licenses were granted to companies to divert large quantities of water from distant watersheds.

In the 1870s, Maui’s Haiku Sugar Company acquired licenses to take water from government lands and build extensive infrastructure across these lands. The case set precedent and was followed by laws allowing eminent domain over land and water for agricultural development; it also set the model of thirty-year water leases (Sproat 2011). De facto control of surface and groundwater by the plantations became the government-sanctioned norm. Court decisions through the twentieth century failed to protect Hawaiian customary water rights, and it was not
until the case of McBryde Sugar Co. v. Robinson in 1973 that the courts began to reaffirm the intentions of early water law to protect the commons (ibid; Chapter Two).

Without the ability to divert and control massive amounts of water, to the exclusion and expense of other users, sugar in the islands would have dried up and been unable to expand to leeward lands. The first comprehensive irrigation statistics in 1914 show 95 percent of cane lands on Kaua’i and O’ahu were irrigated, as were 90 percent of Maui lands; irrigated acreage was reported to be twice as productive (MacLennan 2014). Expansion of sugar production following annexation was accompanied by ambitious and dangerous irrigation projects, blasting tunnels through mountains and transporting concrete deep into islands’ forested interiors to line ditches. Rights to these interior mountain ranges were now provided by the U.S. government; while sometimes scrutinized, no projects were denied and major plantations maintained their water licenses until they closed. The extensive irrigation projects of the early twentieth century opened up the development of land for ranching, rice, and pineapple, “in the shadow of sugar to serve and augment its industrial complex” (MacLennan 2014, 158).

The ceaseless compulsion to increase yields sucked water from streams and the ground in massive quantities. An estimated 1.5 tons of water were required for each pound of raw sugar (Kahane and Mardfin 1987). The Ewa Plantation recorded in 1926 that it drew up to 103 million gallons from its pumps per day, as compared to domestic and industrial water consumption in the city of San Francisco of 80 million gallons per day (MacLennan 2014). Sugar’s thirst — or more accurately, the unquenchable thirst of capital to increase the monocrop productivity of the land — pumped aquifers until they were brackish, and left entire stream ecosystems dry. Landscapes were remade and human communities displaced as private capital accumulation came to replace Hawaiian systems based on the principle “ola i ka wai ola, ola e kua’aina, life through the life-giving waters brings life to the people of the land” (Sproat 2011, 537).

Planters’ access to the forested interior of islands was not limited to water. Early plantations relied on both government and private forest lands for fuel, firewood, and timber, and by 1880 Hawaii’s forests showed significant destruction above plantation districts (MacLennan 2014). Wild cattle and goats introduced by Europeans in the late eighteenth century had already decimated much forest land, and planters recognized that forest decline was causing drought and would need to be managed in order to secure sugar’s success. Their efforts resulted in the establishment of a forest reserve system in 1904, which they relied on to do the work of protecting mountain watersheds through the designation and fencing off of reserves, extensive
tree planting, pest research, and experimentation with new species. Within ten years, nearly a quarter of Hawai‘i’s land area was in forest reserve (ibid).

From the beginning of experimentation with sugar as a commercial export crop, labor was a problem for which planters sought Mō‘ī and government assistance. At one of the earliest pre-Māhele plantations in Koloa, American writer James Jackson Jarves remarked that the greatest obstacle “lay in overcoming the repugnance of the natives to regular and protracted labor, and their utter ignorance of tools” (Jarves 1843, 97). Hawaiians’ resistance to pick up the tools of colonizers and sell their labor to produce a crop that was not for their ‘ohana continued, as did the planters’ blaming of their “indolence” for “retard[ing]…the execution of their plans” (Jarves 1838, 70). Early planters complained about the “extortionate” wage demands of the Natives, who would strike for higher wages and typically preferred to maintain the freedom of subsistence while it was still available, incorporating capitalist markets and wage-labor only selectively (MacLennan 2014). In the haole-owned media, Hawaiians unwilling to labor within the capitalist economy were said to be the cause of the nation’s economic troubles, and it was advised that “vagrants” should be forced to work (Osorio 2002, 120).

By 1850 the Hawaiian Kingdom enacted a contract labor system that continued until annexation, giving legal authority and state-backed force to planters to control the lives of workers. Initially, Hawaiians that chose to labor for the plantations opted for short contracts or formed work gangs for day-tasks. However, as they were increasingly dispossessed of the commons and their livelihoods, they also faced new government taxes that had to be paid in cash. Concurrently, other wage earning possibilities in whaling and export vegetable crops all but disappeared. Through the 1860s, increasing numbers of Kānaka were proletarianized, forced to turn to contract-labor and brought into its cycles of debt and dependency. In essence, the new legal system was creating the extra-economic coercion that defines capitalism (Wood 2002) by limiting alternative ways of living while establishing compulsory participation through taxes, debt, and vagrancy law. Yet, even with the expanding coercions of market and state, Hawaiians’ numbers and cooperation remained inadequate to the wants of the growing sugar industry (Beechert 1985).

The problem of a sufficient, controllable, and cheap workforce was discussed as a problem of (re)population of the nation. Foreigners in the 1850s advised that the Hawaiian race might soon perish completely by disease and that loss of sovereignty would be imminent. In 1855, Foreign Minister Robert Wyllie sent urgent pleas abroad seeking laborers, with the first groups of Chinese and Japanese contract workers arriving in the 50s and 60s. Contracts were strictly
enforced by the government, with sheriff pursuits and heavy fines for those leaving the plantations. Without fear of reprisal, managers used and advocated bloodshed of workers. As a Haiku sugar manager justified shooting a worker in the leg in 1865: “It must be done by every plantation before they [the Chinese] can be of any service” (quoted in MacLennan 2014, 135). The courts were largely inaccessible to workers with grievances (Beechert 1985).

Recruiting new laborers from abroad was a cost also largely assumed by government. When the sugar boom of the 1860s left planters without workers a new government Immigration Bureau was formed, explicitly tying the needs of planters to immigration policy in the constitution. As MacLennan summarizes: “Without government enforcement of contracts through its police and court offices and a companion immigration policy geared toward labor recruitment, the early sugar companies would never have survived” (2014, 121).

Government promotion and subsidization of sugar in the nineteenth century went beyond facilitating resource use and labor. Following the Māhele, the Mō‘ī and government financed sugar’s expansion and dominance to an extent that the interests of the state and capitalists were “almost inseparable” (Osorio 2002, 140). Tax revenues extracted from commoners were spent on the roads, bridges, harbors, and other infrastructure essential to the industry. Customs revenues were sacrificed in order to secure sugar export to the United States. The public treasury was used to start the islands’ first private Bishop Bank, and then keep it going when it failed. The growth of government corresponded directly to the growth of the capitalist economy. While the government took in USD $76,000 and spent $78,000 in 1846, four decades later it took in and spent upwards of $4.7 million (ibid).

Among other “subsidies” granted to plantation agriculture was its state sanctioned impact on the islands’ fragile ecology. Monocropped sugar rapidly depletes nutrients from tropical soils. Guano and then nitrogen fertilizers were essential to maximizing yields and profits; later more synthetic chemical inputs were added to deal with the imbalances created by large monocrops. Soil erosion, especially on extensive acreage left fallow, was significant. While the sugar industry took actions on reforestation and erosion control in order to secure short-term productivity, the wider and longer-view destruction of marine ecosystem, soil microbes, native species, forests, and water systems could not be accounted for within the limitations of the need to maximize yields per acre. This is to say nothing of invisiblized distant environments and people — the islands from where guano was mined, towns that produced synthetic pesticides, the atmosphere absorbing nitrous oxide, and other unaccounted “externalities.”
Consolidation of Capital: The Big Five

As land, water, labor, and government treasury were singularly devoted to sugar or its off-spin industries, a plantation monoeconomy developed. Hawai‘i’s pathway to a monocrop export economy was also its pathway to remarkably concentrated wealth and a political oligarchy. The tale of Hawai‘i’s sugar oligarchy is not a straightforward one of a united capitalist front or lack of resistance from those dispossessed. At the same time, capital’s march towards concentration was steady.

In the late nineteenth century, sugar production globally was industrializing, and to be competitive a sugar region required heavy capital investment in technology along with the labor and resource conditions for cheap production (MacLennan 2014). From the first sugar boom in the 1860s, smaller growers started to be eliminated by those with access to the large capital required for the latest technologies, milling, irrigation, and transportation. By the 1880s, to remain competitive a plantation would have to be outfitted with newly developed and expensive technologies including steam power, vertical iron rollers, vacuum pans, and centrifugals, thus obliging them to grow in size to pay off debts. Plantations with access to capital gained more resources and further access to capital, while others were absorbed. An 1898 Hawaiian Commission report to the U.S. Congress summarized:

> The large profits resulting from the cultivation and manufacture of sugar, where inexpensive Asiatic labor was to be obtained, produced the legitimate result of aggregating capital in large amounts for the purchase or leasing of sugar lands…grants, concessions, and leases of government lands were availed of by speculative favorites and others, and large plantations by wealthy planters, instead of small holding by industrious heads of families, became the rule upon the islands. (in Kuykendall 1967, 52-53)

Honolulu agents originally devoted to securing supplies and organizing shipping for plantations developed into bankers, providing loans to planters. As credit dependency and indebtedness became systemic, agents increasingly inserted themselves into operation decisions on plantations, gradually becoming owners or shareholders and centralizing authority and ownership of the industry. Contrasting Hawai‘i’s plantations to Southern U.S. cotton plantations that were “owned by individuals or the families who lived upon them,” observer Ray Stannard Baker remarked in 1911, “the men who really control the plantations live in Honolulu and employ salaried managers to operate the land” (29). Rather than “agricultural and local,” these
corporate owners were “urban and absentee” — the Hawai‘i “aristocrat is a financier rather than a farmer,” described Baker (1911, 29).

In 1889, the four predecessor companies to what would become the sugar oligopoly controlled 56 percent of the sugar crop; by 1920 the “Big Five” controlled 94 percent of the crop (MacLennan 2014). Baker estimated that from six to ten men “practically dictate the policies of the island sugar industry” (1911, 30). The five companies that successfully consolidated family wealth into a powerful vertically integrated corporate system — Alexander & Baldwin, American Factors, C. Brewer, Castle & Cooke, and Theo. H. Davies — were descended from four missionary families. Though the formal mission closed in 1862, many missionaries and their families stayed in the islands with increasing commercial interests. Many factors played a role in the oligopoly’s descent from original missionary families: family and kinship alliances, generational permanent residency in the islands, the pooling of wealth and influence into vertically organized institutions, early acquisition of fee simple property, the organization of property into corporations and trusts, and the sugar agency credit system (MacLennan 2014).

In her detailed examination of the capitalist class in Hawai‘i, MacLennan (2014) shows that the consolidation of political and economic power involved fiery competition. Missionaries-turned-capitalists competed with newer capitalists like San Franciscan Claud Spreckles, who in the 1870s built the largest mill in the islands equipped with the first railroad and major diversion irrigation system. Other planters feared Spreckles’ “tyrannizing monopoly” and especially his influence with the King. Missionary children with close family bonds were in conflict with capitalists like Spreckles over the final political revolts against the Hawaiian monarchy. For his part, Spreckles advocated against annexation because it would mean an end to the contract labor system.

By the end of World War I, resource control and political competition between capitalists largely harmonized under the domination of the Big Five interlocking corporate complex. Following the war, the British Theo H. Davies was partly acquired by the American missionary-descended corporations, and assets of a German sugar company — which had up until then controlled the largest portion of plantation wealth — were seized and redistributed to American companies (MacLennan 2014).

In “Big Five Territory” (Kent 1993, 69), plantations, utilities, shipping companies, railroads, banks, and the main agricultural support industries were either held directly by one of the major companies or were part of an interlocking network of boards of directors, as well as
“stockholdings, landholdings, and cooperative arrangements among the managers and owners” (MacLennan 2014, 83). Their vertical integration with all major island enterprises — and whole ownership of the California and Hawaiian Sugar Refinery (C&H) that dominated the Western U.S. sugar market — was remarkable even by comparison to other highly centralized sugar producing regions of the world (ibid). By the 1930s, over 90 percent of small retail stores purchased their supplies through the sugar factors (Kelly 1994).

The Big Five exerted their economic power in order to extend it, especially by monopolizing key industries. Kent (1993) tells what he calls a familiar tale of pushing out independent sugar producers with practices like reneging on agreements in order to force indebtedness, and then refusing to give credit from the loan and financial institutions that the Big Five also controlled. In one example, elite-outsider James Dole, who began pineapple cultivation in the islands, saw his source of credit evaporate immediately after he changed from shipping with Big Five owned Matson to an overseas company. Castle & Cooke promptly took over the company, then proceeded to monopolize trade globally. Kent calls the Big Five transportation monopoly the “lucrative trump card” that also gave them control over “virtually the entire cargo of freight and passengers moving between the continent and Hawaii” (1993, 81).

In sugar, the corporate oligarchy worked collaboratively on marketing, technology development and scientific experimentation, labor control, and political lobbying. From the very beginning of sugar in the islands, competition for markets was almost nonexistent and planters worked together to secure the interests of the industry as a whole. Early planter groups organized around specific issues like labor and immigration policy, and the first lasting industry-wide group was formed in 1882. The Planters’ Labor & Supply Company (PL&S Co.) brought together plantation owners, shareholders, and all of the nine Honolulu agencies to deal with the looming problem of an expiring reciprocity treaty. A permanent organizational structure was set up, which developed into a two-tier system of business executive trustees dealing mostly with market and labor policy issues in Honolulu and Washington, and general members and committees working on scientific and plantation matters. The matter of annexation provoked considerable disagreement amongst sugar capitalists, but post-annexation the industry became unified in its political lobbying under the Hawaii Sugar Planters Association.

The Hawaii Sugar Planters Association (HSPA), successor to the PL&S, maintained its two-tiered structure and established committees to deal with everything from wages to pests to government trade policy. The HSPA recruited workers from abroad; centralized labor management on all plantations, including wages, housing and social welfare policies; designed
labor, anti-union and immigration policies locally and nationally; and marketed a favorable public face to the world to counteract criticism of Hawai‘i’s labor system (Baker 1911; MacLennan 2014). They provided remarkable unity to deal with a growing labor movement, using the courts and violence to suppress organizing and coordinating importation of new immigrant groups to replace those proving troublesome (Beechert 1985; Kent 1993). The HSPA also coordinated the research and development that made production in the islands some of the most technologically advanced in the world.

Economic and political dominance worked in a feedback loop that the elite carefully sought to maintain. Famously, Attorney General of Hawai‘i Edward Dole remarked in 1903: “There is a government in this Territory which is centralized to an extent unknown in the United States, and probably almost as much centralized as it was in France under Louis XIV” (U.S. Congress 1903, 10). Territorial governors were either part of the sugar elite or obedient to it. In 1911, Baker wrote of the HSPA, “[it] is more powerful far [sic] than the territorial government; it has well been called the Hawaiian House of Lords” (29). While workers, Kānaka, and other non-elites were not docile to the injustices of Hawai‘i’s oligarchical society, the institutionalized power of the Big Five largely shaped the lives of Hawai‘i’s people and the landscape of political possibility. As Baker declared, “Fully three-quarters of the population of Hawaii have no more to say about the government under which they are living than the old slaves” (1911, 32). Hawai‘i sugar production was able to compete on the global stage precisely because the anti-democratic state secured its anti-common interests, maintained extreme class and racial inequalities, and delivered it the land, water, and laborers that it demanded.

**MonoEconomy Dependence and No Alternative**

Critical to the maintenance of any radically unequal capitalist order is the sense of no viable, realistic, or better alternative, or of being stuck in a particular trajectory that is impossible to change. As sugar became “King” (as it was popularly called for decades), it displaced and sidelined other capitalist and non-capitalist livelihood possibilities, and created perceived and actual dependence as “the economy” was tied to plantation exports. When problems or challenges to the industry arose, there was often a manufactured sense of no alternatives to whatever was best for industry. As ex-missionary, sugar investor and politician, Samuel Castle remarked in debate about the contract labor system being too close to forced labor: “he who tries of throw odium on our system…strikes a serious blow at every interest in the country, not the planting interests alone, but the coasting, the mercantile and every other one” (1869, 3; emphasis in original). Opportunities for Hawai‘i’s people were both materially and discursively
reduced to fitting within the plantation agriculture economy, and of course there was no incentive for those who controlled and benefitted from the monoculture economy to “diversify” it.

A brief survey of the agricultural landscape in the islands indicates how other production was folded into the plantation complex. Over one million acres of ranch-land, spread mostly at elevations above the cane belt, were either owned by plantations or by large ranching families heavily intertwined with the Big Five. Ranches provided an important food source for plantations (MacLennan 2014).

Pineapple was originally encouraged as a homesteading crop to attract white Americans to the islands, but in short time became a corporate industry dominated mostly by the capital of the Big Five. The entire island of Lāna‘i was purchased to establish a pineapple plantation, eventually owned by Castle & Cook; Hawaiian pineapple dominated the global supply for decades (Kent 1993).

Another scheme to populate the islands with white immigrants was developed around small-scale coffee production on Hawai‘i Island. The project failed, though small independent coffee farms cultivated mostly by Japanese in Kona were somewhat successful.

Rice production fed Chinese and Japanese cane workers and was the second largest industry in Hawai‘i for a short time. However, in the first decades of the twentieth century sugar became too lucrative to dedicate land to rice, and California’s commercial rice industry applied industrial harvesting technologies that made competition with import prices unviable (MacLennan 2014).

Taro, the most important staple crop of the Hawaiians, fed an estimated 300,000 people on 10,000 acres in the early nineteenth century. Though communal ahupua‘a-based “subsistence” production was displaced with the enclosure of the commons and colonization of the landscape by sugar (with many wetlands changing from taro to rice paddies to feed workers), some cultivation for local consumption continued. At the end of the nineteenth century, 80 percent of poi (processed taro) was being milled by Chinese, and more intensive and fertilizer-dependent methods were widely used (MacLennan 2014).

At times, the devotion of island resources to single export specialization presented food scarcities and vulnerabilities. In the decade following the Māhele, food shortages became a problem in districts where plantation diversions robbed taro fields of water and Hawaiians were compelled to leave their own fields for those of the plantations. In the 1860s, plantation
managers on Maui reported: “There is a great scarcity of food on the Island, and unless we can devise a means of getting it from Molokai, we shall soon be obliged to stop. We have 3 weeks food engaged for Haiku, but the Hamakuapoko people have had little or none for three weeks…” (quoted in MacLennan 2014, 137). New commodities like salted salmon were imported from vast distances to the isolated Pacific islands. Such irony did not go without notice by capitalists: “With fish abundant in some localities around our island shores, with fish cheap, and in some places to be had for the gathering, why cannot a full supply of this article…be salted and packed and used, instead of the imported salmon, and at a cheaper price?” (Pacific Commercial Advertiser 1867, 3). Dependence on food imports grew alongside the export crop economy. Contrasting the 1940s height of the plantation era to what had preceded it by only decades, MacLennan describes, “An industrial society, with 85 percent of its people from Asia, North America, and Europe, Hawai‘i was largely dependent on income from plantation agriculture to purchase its goods from places far away to feed its peoples” (2014, 219).

From the founding moments of plantation agriculture, utopian visions of Kānaka and the working class being raised up by capitalist agriculture relations were recurrent. Imaginaries of a thriving nation of yeomen farmers foregrounded the Māhele: “There must grow up a middle class, who shall be farmers, tillers of the soil, or there is no salvation for this nation” (Chief Justice William Lee in 1848, quoted in Banner 2005, 296). Sugar reciprocity was sold publicly partly on the premise that it would help small Native farmers to export rice to the U.S. Philanthro-capitalists designed programs to “save” Hawaiians by making them into sharecroppers (MacLennan 2014). In fact, actually implementing a “yeomen farmer” vision would have required diverting resources from the plantation; behind rhetoric, the common prevailing logic amongst the powerful was that the wealth of Hawai‘i lay in the consolidated dominion of the plantation.

In later years, various homesteading projects were implemented in attempts to attract white settlers, disperse congressional criticism of monopolistic sugar landholding, and assuage growing pressures from within the islands’ landless majority. Even the most promising of these failed, lacking the necessary government support, relegated to marginal lands, or full of loopholes thereby producing speculation bubbles. After homesteading policies were passed into law at the turn of the century, the amount of land actually homesteaded declined as sugar acres and concentration of control over resources increased (Horwitz et al. 1969). Further, as Arthur Nagasawa argues, homesteading policy was in the first place immigration policy designed to Americanize and whiten Hawai‘i, not to distribute land more equitably to Hawaiians or to any non-white (cited in MacLennan 2014).
Pressure from within the islands for land reform grew through the early twentieth century. Against change, Governor Pinkham (1913-1918) declared any departure from plantation agriculture to be “absolutely un-American” (Kent 1993, 79), and the workingman’s salvation to be in large-scale mechanization, not the “man with the hoe” (MacLennan 2014, 267). Pinkham gave voice to the logic that underlay the entire project of plantation agriculture in the islands — that social progress could only be realized through labor’s subservience to accumulated capital and its technologies.

Pressure for land redistribution was substantially dissipated in the 1920 Hawaiian Homes Commission Act. While the act by U.S. Congress distributed 200,000 acres of public land to Hawaiians, the sugar industry’s influence proved too significant for liberating agriculturally useful acres to the landless. A vast majority of the designated lands could not be farmed without extensive investment, and while some valuable sugarcane land was included in the acreage, it was all leased back to plantations in order to generate revenue (Van Dyke 2008). Racist island oligarchs contended that only marginal lands should be included in the program, so as to “rehabilitate” the natives:

Those who contend that Hawaiians ought to have first choice of the highly cultivated lands completely misunderstood the purpose of rehabilitations. We don’t want to make the Hawaiians rich we want to make them work. Give these same squatters rich cane land and they would sit on the lanai and strum a guitar or tickle a ukulele while some Japanese did the hoehana in the fields. That isn’t what we want, that isn’t rehabilitation. (Governor McCarthy, in Hasager and Kelly 2001, 203)

Characteristic of territorial era policy, the Hawaiian Homes Act concurrently removed prior restrictions on the size of government parcels that could be sold or leased. The island of Lānaʻi was purchased shortly thereafter for plantation agribusiness.

The industry’s control over land and resources, and binding of the entire Hawaiian economy to its own success, was accompanied by strategic cultivation of workers’ dependence on plantations. From early-on, planters recognized that more than coercive contracts and the whip were necessary to maintaining an adequate and obedient workforce. In the 1860s managers experimented and fine-tuned systems of housing, control of food rations, health care, and debt at plantation stores to ensure compliance with rules and renewal of contracts (Beechert 1985). With plantations often located far from trading towns, the plantation store evolved into a mechanism to “keep them [workers] in debt” (Haiku Sugar Co. plantation manager in 1867,
quoted in MacLennan 2014, 139). Food rations were kept low so that workers would be forced to supplement their diet from the store, and for many, the plantation was a “cashless economy that greatly restricted their freedom in a world that increasingly demanded money” (MacLennan 2014, 139). Records as early as the 1860s also indicate surrounding Hawaiian communities pulled into this orbit of plantation store debt as reliance on the capitalist economy increased.

When the contract labor system was abolished with annexation to the United States, planters’ were deeply concerned by the loss of their most coercive forms of labor control and workers’ increasing rebellion. In addition to coordinated use of violence and anti-labor legislation, industry leaders collaborated to design new methods of wage control and mechanisms for insuring a steady workforce. They improved sanitation and housing conditions to discourage government regulation following disease outbreaks and upon recognizing that improved living conditions made workers less willing to strike and was thus “good economic strategy” (MacLennan 2014, 187). Recognizing the need to “settle workers more permanently into plantation work and protect their health” (ibid, 190), in 1919 the HSPA organized the Industrial Service Bureau, tasked with establishing a group of “contented people working in the best interests of the plantations” (quoted in Beechert 1985, 180). Following major strikes in 1920, the Bureau worked urgently to offer families various housing, recreational, and educational programs.

Many of the Bureau’s programs focused on “Americanizing” the increasing number of children living on plantations, including discouraging Japanese language schools and loyalty to Japanese culture. Laws were passed requiring foreign language school administrators and teachers to demonstrate that they “‘possessed’ the ‘ideals of democracy, knowledge of American history and institutions’” (Tamura 1994, 147). These policies were also designed to offset American fears of “colored” islands, and to project an image of docile and Americanized workers that did not threaten the whiteness of the nation. It was advocated that working-class people should not receive an education beyond what they would need for employment on plantations. In 1933 a bill was passed requiring high school tuition as a means to deter plantations workers’ children from attending. Plantation paternalism was accompanied by a thriving charity industry. As Baker commented, “I have rarely visited a place where there was as much charity and little democracy as in Hawaii” (1911, 30).

The industry’s strategies of control, coercion, and paternalism were always racialized, and institutionalized separation between racial groupings on the plantations also influenced division of labor off the plantations. In what Andrew Lind (1968) called a “race-making experience,” differentiation and separation permeated what work people did, what wages they received,
where they lived, sports teams, and school classrooms. Reinforced by language and cultural
differences, the institutionalized dividing of workers was one of many tools used to suppress
labor organizing, manage hierarchies, and maintain the existing order.

The New MonoEconomy

It was an anti-democratic, oligopolistic system — involving a high amount of cooperation
amongst the local elite and with their allies in the imperial and capitalist core of the U.S. — that
kept sugar production so profitable in the islands for nearly a century. However, changes in the
dynamics of global capital, as well as pressures from within, compelled a transformation in how
profit accumulation functioned in the islands. Following World War II, U.S. capitalist and
imperialist interests gained international dominance. Backed by the state, American
corporations increasingly multinationalized, with capital moving to both access new markets and
secure cheaper locations of production. This was also an era of rising and lasting militarization
and commodification of much of the Pacific, including establishment of Hawai‘i as both a “Pacific
Playground” and center of U.S. military operations.

The cost of sugar production in Hawai‘i began to grow mid-century due in large part to militant
workers’ movements (Horne 2011). Worker resistance to capitalist exploitation was marked from
the very introduction of wage-labor in the islands; Hawaiians refused plantation work, broke
repressive contracts, and organized strikes around things like equal pay for women. With the
coercive indentured labor system and importing of more structurally exploitable workers from
overseas, resistance tended to take the form of impromptu disputes with bosses (Beechert
1985). Following the end of penal contract law with annexation to the U.S. in 1898, worker
organizing reached a new scale, with twenty strikes recorded in the first year alone. Long-lasting
strikes organized within racial groups in the 1920s were met with harsh response from a
remarkably unified capitalist-class, including forcing thousands of families out of their homes,
and the death of twenty people in the 1924 Hanapepe massacre (ibid). Despite violence,
criminalization of leaders, and some crushing defeats, workers continued to strike and organize
(Jung 2010).

Planters’ strategy of separating and pitting racial groups against one another was challenged by
radical International Longshoremen’s and Warehousemen’s Union (ILWU) organizing, which
was informed by a Marxist class-based analysis of inequality, capitalism, and racial and class
solidarity (Horne 2011). By 1945, the ILWU succeeded in organizing workers in every strategic
Hawaiian industry, paralleling the structure of Big Five power. Two great workers’ successes in
the 1940s — the first involving the closure of 33 of 34 plantations, and the second immobilizing
the Big Five sugar refinery in California — left the unionized workers in Hawai‘i in a strong position to negotiate wages, benefits, and working conditions with the capitalist class. Along with the Sugar Acts’ threat to a tariff-free U.S. market, competition from sugar beets, and a glut of cane in the global market, labor’s ability to command more of capitals’ surplus changed conditions of low production cost and high commodity value.

As the dynamics of capital changed globally following World War II, so too did opportunities to profit from Hawai‘i. Capitalists many times wealthier than the local sugar elite started investing in Hawai‘i as a tourism destination in the 50s and 60s, challenging Big Five economic and political dominance. Though Big Five elite lamented in 1960 that they had “missed the boat in land development” because they were “so busy trying to keep the sugar industry in a profitable position” (Lowell Dillingham, in Kent 1993, 119), they caught on to the business of tourism and development quickly. Most typically this involved deals between “land-rich but capital-poor” Hawai‘i corporations, and “capital-rich but Hawaii-land-poor” overseas corporations that could both finance development projects and provide management expertise (Kent 1993, 121).

Development boomed and land prices skyrocketed as the numbers of tourists arriving to Hawai‘i went from 429,000 to 2.6 million in the decade beginning in 1963, and up to a high of 8 million today. The market in land drove prices to a point that agricultural production was, for capitalists, competitively nonsensical, with periods of “mind-boggling frenzy of buying and selling of real estate” (Kim 1994, 45). While some elite expressed sentimentality about maintaining plantation agriculture in the islands, Hawai‘i’s corporations were not immune to capital’s coercive laws of competition. As Castle & Cooke stated to the press following the planned closure of Kohala Sugar Company in 1971, sugar was simply no longer profitable (MacLennan 2014, 276).

As they phased-out plantation agriculture in the islands and laid off workers by the thousands, the Big Five began to untangle themselves locally. Like other U.S. corporations, they multinationalized, spreading to new places and new industries. Corporations like Castle & Cooke used their historical land wealth to become primarily residential and resort developers in the islands, while they also expanded their agricultural enterprises to countries with lower labor and environmental regulations. This spelled the end of Hawaii-based control of most of these large and growing corporations. As Kent documents in his review of the transformation of each of the Big Five, “Inevitably drawn to major overseas capital markets to finance their expansion, kama‘āina executives soon found overseas financial institutions exercising crucial leverage over corporate policies” (1993, 114).
Hawai‘i today is often contrasted to the backwardness of its Big Five past — a purported break from a white oligarchy to a multicultural capitalism of opportunity. In particular, the Democratic Party “Revolution” of the 1950s, in which haole elites were challenged especially by territory-born Asians, is celebrated as the end of a particular epoch. Prior to 1954, 80-90 percent of territorial elections were won by Republicans associated with the Big Five; since then, around 80-90 percent of elections have been won by Democrats (Stauffer 2001, 63). In the 1960s and 70s, some of the most progressive legislation in the U.S. was passed in Hawai‘i (Witeck 2001, 38). However, as George Cooper and Gavan Daws document extensively in their book *Land and Power in Hawai‘i* (1990), the electoral “revolutionaries” themselves became increasingly invested in Hawai‘i’s golden-day of land-development capitalism. Though gaining power by promising land reforms that would benefit the working class, the Democrats ultimately promoted land development and real estate deals benefiting those who came to comprise the local political power structure (Fujikane and Okimura 2008). Turning especially to outside capitalists, the new political power elite (which continued to accommodate the old elite as well), became the facilitator of Hawai‘i’s place in the projects of empire and global capital. Contrasting them to their contemporaries within the ILWU, Kent argues that:

> The postwar Asian political elite, despite its working-class background and the sufferings of the prewar years, never questioned the morality or viability of capitalism, especially a capitalism that had sufficient resiliency to provide them with the kind of wealth and position they could not have even imagined achieving during their younger, leaner days. (1993, 131)

While the conditions for the Democratic Revolution were made by radical anti-racist labor struggle, radicalism increasingly gave way to what Kent calls the era of consensus: “There was a growing tone of complacency (amounting to smugness), a feeling that the labor movement had accomplished its essential objectives, that the great struggles were now history” (1993, 137). Even amongst the most populist “euphoric” period of calls for redistribution of land, party leadership was already counseling compromise (ibid, 131). A chilling anti-communist crusade through the 1940’s and 1950’s crushed the vestiges of radicalism as the ILWU transferred its allegiance to the Democratic Party. The union turned to tourism as a source of membership, and soon became one of its strongest proponents.

Underlying structures of the oligarchical economy were left largely intact, and concentration of land ownership actually grew. By the 1960s, 75 landholders (including the state and federal governments) controlled over 95 percent of Hawai‘i’s land (Kelly 1994). Most of the sugar elite
held on to their land or developed leased lands, with some leases reverting back to the state or the powerful Bishop or Campbell Estates (MacLennan 2014). Large land-owners continued to command control of water rights, often in contravention of the law (Sproat 2011). Bianca Isaki argues that, without discounting the significance of worker and anti-racist insurrections, it must be understood that “overcoming” subordination to a white planter oligopoly happened “in a breach opened when Hawai‘i’s agricultural economy was transitioning towards other kinds of capital” (2008, 175). Thus, she proposes that these events indicate “a historical instance of capitalism’s capacity to fund social transgression,” and one that occurred in “the updating of U.S. hegemony in alignment with neoliberal global capital” (ibid, 12).

Isaki also writes, “As much as anti-racist resistance, we see a process in which racialized class-mobility partners with capitalism under the auspices of multicultural liberalism” (ibid, 175). The “multicultural settler state” of Hawai‘i (Fujikane and Okamura 2008), while permeated in a mythology of racial harmony and equality, remains highly stratified by an ethnicized class structure (Okamura 2008). Haole, Japanese, and Chinese Americans occupy dominant political and class status relative to Hawaiians, Filipino, Samoans, Micronesians, other Pacific Islanders and newer immigrants, in ways that Jonathan Okamura argues reproduce the plantation hierarchy (2008, 19).

Through the latter half of the twentieth century, Hawai‘i’s economy passed into the hands of transnational, mostly U.S. and Japanese-based corporations. Today, Hawai‘i is entirely dependent on a vertically integrated corporate tourism economy, providing cheap labor, natural resources, infrastructure, and other government support in exchange for low-wage jobs and an inflated cost of living. A change in form, but not in function, from plantation days of past. Rather than to a local oligarchy, profit accumulated from the islands and islanders flows into the coffers of a global elite (Aoudé 2001). The new monoeconomy demands even greater public financial support than did the plantations, including “airports, roads, sewage facilities, new beaches, promotional activities, and a rationalized governmental bureaucracy capable of implementing all of these” (Kent 1993, 122). Tourists are largely drawn to the islands by constructions of a paradise populated by welcoming natives; what scholar and activist Haunani-Kay Trask (1999, 136) calls the “prostitution of Hawaiian culture.” Unceasing growth imperatives generate ever-more buildings, but increasingly drive workers out of their homes or the islands altogether; tents lining beaches have come to symbolize Hawai‘i’s “state of emergency” homelessness crisis (Declaration of Governor Ige, October 2015). As recognized by the Honolulu Advertiser in 1993, it is an economy in which “inflation outstrips incomes” (Kelly 1994, 34), and the wide disparity between wages and the cost of living has in recent years reached unprecedented proportions.
(Pape 2015a, 2015b, 2015c). Like sugar, alternatives to tourism-development are made infeasible by the intertwined compulsions of the capitalist market (especially in regards to land values), and unidirectional state-facilitated devotion of land, water, infrastructural, and public treasury supports.

Second to tourism, the military forms the other hegemonic economic bloc in the islands. Hawai‘i is one of the most heavily militarized places in the world. The military is even more of a flow-through economy than tourism. Its self-contained bases are managed by companies outside of Hawai‘i, while military personnel are highly isolated from the local economy (Ramones 2014). Controlling nearly 6 percent of Hawai‘i’s total land area and over 22 percent of land on the main island of O‘ahu, it pays little to nothing for the resources that it monopolizes. It is perhaps the most environmentally destructive enterprise in the islands — and the world — and its operations have resulted in widespread highly toxic chemical contamination (Ramones 2014; Hynes 2014). This is to say nothing of the violence, horror, and devastation that it reaps globally, largely from its nerve centers in Hawai‘i. As has been touched upon, the agenda of U.S. empire — and the inseparability of its military and capitalist interests — has always been, and remains, the backbone of Hawai‘i’s colonial status.

The reign of sugar was characterized by the subordination of a peripheral economy to decisions in the metropole, though unlike other dependent plantation societies, the locally-based oligarchic ruling class maintained a certain political and economic authority both within the islands and in their dealings with the metropole (Kent 1993, 91). Reflecting post-War changes in global capital, today’s bosses and oligarchies belong to the “global ruling class” and are extensively reinforced by national and international policy regimes and mechanisms of coercion (Robinson and Harris 2000). While the corporate remnants of Hawai‘i’s sugar oligopoly are now nearly all controlled by overseas shareholders and CEOs, and the state now functions largely to secure the interests of transnational capitals in a tourism-military monoeconomy, dominant structural characteristics inherited from a capitalist-plantation-economy persist. With new ruling forms of accumulation, but in the foundations of its material and ideological past, Hawai‘i’s landscape continues to be marked by its consolidated political, economic, and resource control in service to international capital and U.S. empire.

This present will be returned to in Chapter Five, “GMO Ground Zero.” This chapter has provided the historical background for clarifying the agrochemical-seed-biotechnology industry’s occupation of Hawai‘i today. Monsanto, Syngenta, DuPont, Dow, and BASF operations are premised upon conditions created by original colonial-capitalist plantations. They mark a
continuation of historical injustices and the legacies of a sugar oligarchy and capitalist
monoeconomy. Before detailing conditions that facilitate Hawai‘i as an epicenter of genetically
engineered corn seed production and GMO testing, this thesis turns to examine the emergence
of the agrochemical-seed-biotechnology oligopoly in global dynamics of capital, enclosure of the
commons, and imperialism.
CHAPTER FOUR: THE AGROCHEMICAL-SEED-BIOTECHNOLOGY OLIGOPOLY

A small, colluding group of transnational corporations today dominates the global commercial agrochemical, seed, and agricultural biotechnology markets. Their economic and political power work in tandem, and this power is inseparable from U.S. interests and imperialism. This chapter examines the conditions of capital and state policy that facilitate the agrochemical-seed-biotechnology oligopoly’s emergence and rise to dominance. In combination with the preceding historical chapter on Hawai’i’s colonial plantations, this chapter provides vital analysis for bringing together the industry’s current occupation of Hawai’i in Chapter Five.

Chronicling the rise of the agrochemical-seed-biotechnology oligopoly, this chapter moves through five main sections on enclosure of gene-plant natural and cultural commons, restructuring of the global agrifood system following World War II, the consolidation of the “life sciences” industry, science and technology pathways, and regulatory regimes around the industry’s products especially as related to U.S. interests and industry influence. In this, it considers capitalist laws of motion alongside particular policies that have deepened capitalist logic and power. Building on Chapter Two, it shows how capital’s private wealth is accumulated through enclosure of common wealth. More than just a power grab by capital, changes in logic illustrate Wendy Brown’s thinking on neoliberalism as a thoroughgoing economization of everything, in which “every field of activity is seen as a market, and every entity (whether public or private, whether person, business, or state) is governed as a firm” (Brown and Shenk 2015, n.p.). A series of arguments are made about the ways in which neoliberal, free-market, or otherwise described capitalist policy, has — contra rhetoric — limited competition, market choice, and innovation, instead concentrating capital and intensifying grossly inequitable social relations and environmental destruction. The flourishing of the agrochemical oligopoly is premised upon the very conditions that are a crisis for democracy, the commons, the future of food, and humanity.

Gene-Plant Enclosures

While capitalism’s very origins are arguably in the development of market imperatives in English agriculture (Wood 2002), agriculture has at the same time been more resistant to capital accumulation than most other sectors of the economy (Mann and Dickinson 1978; Goodman, Sorj and Wilkinson 1987). Unsubstitutable resource requirements, weather unpredictability,
perishability, and lengthy production times all make agriculture a more risky place to seek profit than the production of durable goods (Howard 2009). With a need for ever-expanding frontiers, capitalism has colonized the domain of agriculture by refashioning it in ways that serve accumulation imperatives, including through the use of Post-World War II technologies to extract profits from the sale of agricultural inputs, the transformation or distribution of outputs, and more recently through the remarkable growth of financial actors in the food system (Burch and Lawrence 2009).

Of particular import in this regard has been the generation of new commodities through the enclosure of commons in the domain of seed, genes, plants, and life. Until very recently in human’s agricultural history, people saved and shared seed, creating and recreating the crop and agroecosystem diversity that was considered common heritage and a foundation of social life (Mascarenhas and Busch 2006). In non-capitalist societies, decisions over what seeds to save, what to plant, and how to allocate seed were made within the overarching social and political arrangements and norms of which they were a part. While some customary arrangements recognized a degree of exclusivity in access to genetic resources, they largely operated on principles of reciprocity, gift exchange, and open sharing. Jack Kloppenburg explains that “these customary arrangements usually functioned to stimulate and facilitate — rather than restrict — the wide dissemination of seed” (2010, 371). The sharing of seed resulted in the ongoing recombination of genetic material, creating and recreating the crop diversity that is critical to agroecosystem resilience and food security (Altieri 1999).

In recent decades, obstacles to capital’s enclosure of seed commons have been overcome through the pursuit of intertwined legal-political (IPR) and technological (hybridization and genetic engineering) strategies. Since the 1930s, producers have increasingly been separated from planting material, creating openings for capital accumulation. This was first accomplished in the United States through the development of hybrid varieties of corn that were unfavorable for replanting. To produce hybrid seeds, two distinct parental lines are needed, and thus they can only be reproduced by the breeder. This ability to guarantee that farmers would have to repurchase seeds annually attracted enormous interest from the seed industry; an industry whose interests were backed by the U.S. state, with the Secretary of Agriculture also the president of the largest corn seed company (Kloppenburg 2004; Paul and Steinbrecher 2003). By 1944, hybrid seeds generated revenues of USD $60-70 million, though their actual yield benefits remained dubious (as a comparison, yields for wheat, not a hybrid crop, increased twice as much as yields for maize in the U.S. between 1920 and 1945).
As seed companies’ power and influence over the political process grew, laws on “plant breeders’ rights” were designed to confer exclusive rights to them over crop varieties in which hybridization was not possible (Kloppenburg 2004). The U.S. Congress was the first in the world to establish plant-related intellectual property rights in 1930 with the Plant Patent Act. According to Congressional reports at the time, “a plant discovery resulting from cultivation is unique, isolated, and is not repeated by nature, nor can it be reproduced by nature unaided by man” (Yount 2008, 306). A plant patent — as opposed to a full utility patent — covers a single new plant and its asexually reproduced offspring.

The Plant Patent Act did not pertain to plants reproduced by seeds or to seeds themselves. Thus, under influence from the seed industry, Congress created a patent-like system for seed-reproduced plants in 1970 with the enactment of the Plant Variety Protection Act. The first international agreement on plant breeders rights took place in 1961 in Europe with the Union for the Protection of New Varieties of Plants Convention, which established consistent requirements for the privatization of seeds. While criteria for plant breeders’ rights were less demanding than for full patents, the scope of property protection was limited; at that time no IPR regime went as far as to ban a farmer from saving seeds from past crops, or to restrict plant breeders from openly using patented seed varieties in their innovations (Kloppenburg 2004; Matson, Tang and Wynn 2012).

Up until 1980 it was assumed that full utility patents — those issued for the invention of a new and useful process, machine, manufacture, or composition of matter — could not be granted for life forms (Matson, Tang and Wynn 2012). That changed with the landmark United States Supreme Court decision Diamond v. Chakrabarty (1980). The case began with General Electric seeking a patent on a bacteria that could digest oil, developed by one of its microbiologists, Ananda Chakrabarty. By his own testimony, Chakrabarty had “simply shuffled genes” (Breu 1980, n.p.). A small number of public interest groups followed the case, opposing the patent on the grounds that, “to justify patenting living organisms, those who seek such patents must argue that life has no ‘vital’ or sacred property...and that once this is accomplished, all living material will be reduced to arrangements of chemicals, or ‘mere compositions of matter’ ” (Kimbrell 1996, 2). However, the court dismissed these concerns, stating that “the issue was not whether there was a ‘relevant distinction (in patentability) between living and inanimate things,’ but whether living products could be seen as ‘human-made inventions’ ” (ibid, 2). Since that precedent setting decision, patents on life forms have become a lucrative domain of capital enclosure.
Five years after *Diamond v. Chakrabarty*, the U.S. Board of Patent Appeals and Interferences ruled that the case could be extended to apply to utility patents on both seed varieties (germplasm) as well as transgenic traits (following the patenting of a mammal). Accordingly, by patenting a transgenic trait inserted into a crop, the entire plant is covered by strict property law. The U.S. Supreme Court later held that such patents prohibit the seed saving and research exemptions that apply to plant breeders rights certificates (*J.E.M Ag Supply* case). Moreover, as Mazzucato notes, “the types of inventions that can be patented has widened to include publicly funded research, upstream research tools (rather than only final products and processes), and even ‘discoveries’ (as opposed to inventions) of existing object of study such as genes” (2013, 51). In general, following *Chakrabarty* and the expansion of biotechnology, the line between what is considered natural, and what is considered “invented” has shifted to a remarkable degree; “only the most elemental physical phenomena such as electricity are today reliably regarded as not patentable” (Jasanoff 2005, 209).

The patenting of plants and genes is not solely a conversion of natural commons into private property, but also a multi-layered enclosure of knowledge and cultural commons. In what can be described as capitalist firms’ work to “organize and exploit the collective synergy of creative cognitive singularities” (Žižek 2010, 224), seed and biotechnology companies appropriate farmer and scientific knowledge to commodify the results of intellectual exchange built upon long histories of thinking in common. The development of “agronomically useful and novel (and therefore patentable) plant varieties” is predicated on breeders’ access to the enormous pool of genetic diversity that has been produced over millenia by human ancestors (Kloppenburg 2010, 372). For the capitalist firms involved, production is possible “only on the basis of previous cooperation,” which here appears in forms of objectified knowledge, technology and machinery, and established sciences (Jones and Murtola 2012a, 640).

Linebaugh’s conception of the inseparability between commons and acts of commoning detailed in Chapter Two is useful to understanding the co-evolution of humans and plant genetic diversity. Both conventional breeding and agricultural biotechnology depend entirely on quality gene lines developed within social institutions of commoning (Zerbe 2015). Accessing this library of common history is facilitated by the systematic appropriation of varieties from farming communities around the world, their storage in genebanks and subsequent use in breeding programs. Strange ideological contradictions arise in practice. For example, the U.S. trade position is that genetic-resource raw materials are common heritage that foreign companies should have free access to, but that the most stringent of property rights should accompany those firms’ outputs (McAfee 2003). Genetic expropriations (almost entirely from poorer
countries and communities) are often referred to as “biopiracy,” though Hardt aptly delineates: “Piracy is actually a misnomer for such activities. Pirates have a much more noble vocation: they steal property. These corporations instead steal the common and transform it into property” (2011, n.p.). It is especially the knowledge of women, indigenous, and non-white that is stolen in genetic enclosures (Mgbeoji 2014).

The multi-layered nature-culture appropriation of plant genetic commons that takes place with biotechnology is also somewhat unique. Exclusion is established simultaneously in multiple domains of natural commons (germplasm, plants hosting traits) and “artificial” commons, both material (machines, techniques, technologies, engineered seeds) and immaterial (knowledge, culture). Enclosure processes reach internally (molecular material) and externally (the field) simultaneously. Moreover, property is reorganized along new lines in the “displacement of ownership from one form of production to another: from the farmer’s practices of cultivating whole organisms to the biotechnology company’s practices of extracting, inserting, and circulating traits defined at more basic levels of biological organization” (Jasanoff 2014, 216).

The ideological mechanisms whereby plant and gene-related property rights are being extended involve compelling and familiar discourse around innovation, high-technology, progress, and neo-Malthusian necessity to feed a crowded world (McAfee 2003; Ross 1998; Dibden, Gibbs and Cocklin 2013). The contradictions in these logics are returned to throughout this thesis, though here it is important to remark that as with other tensions between private property and expansion of cultural commons, restricting open access to genetic and plant commons limits their “blossoming,” including biodiversity and ecological health most generally. Rather than continuous improvement, the “innovation” celebrated by champions of enclosure is more reminiscent of Schumpeter’s (2006) “creative destruction.” Jones and Murtola write: “Creation in such a context is not merely an addition to how things are but a transformation that destroys previously existing relations and sets new relations and possibilities in their place” (2012b, 123; see also Newfield 2008). In the case of gene-plant enclosures, destructions are of social relations around seed sharing and collective innovating, of producer practices and knowledges, of human autonomy, and of biodiversity itself.

Related to these legitimized destructions is the construction of value. The labor of capitalist firms and entrepreneurial scientists is constructed as the “real” work that is valued, while the collective labor of producing communities is de-valued — “required as a source of ‘genetic resources’ but not valued” (Kneen 2009, 68) — with clear implications for whose knowledge and labor comes to count. Zerbe elaborates:
In the literature, varieties developed by farmers over generations are usually referred to as ‘traditional’ or ‘landrace’ varieties, suggesting that innovation is done, and we’re stuck where we are now. This is contrasted with the ‘modern’ or ‘improved’ varieties developed by plant breeders in laboratories. (2015, 198)

Producers are constructed as passive recipients of savior capitalist and entrepreneur technologies, rather than innovators and creators of the commons in their own right, despite the most fundamental role that “farmers’ variety” crops play in actually feeding the world today (Tourangeau and Smith 2015; IAASTD 2009; Zerbe 2015).

While much critique about genetic enclosures focuses on appropriation of farming communities’ intellect and corresponding glorification of the laboratory scientist, capital’s exploit of the latter also deserves attention. Where biotechnology is involved, innovations are highly “polycentric and spasmodic,” though patents presume “identifiable inventors and a single moment of invention” in order to serve the function of capital accumulation (Jasanoff 2005, 207). As will be examined in detail below, private accumulation through biotechnology is premised upon cumulative publicly funded science. Further, corporations themselves are highly collective entities, structured to harness the creative cognitive abilities of collaboration. Internally, biotechnology companies organize around common goals of advancing knowledge and technology, openly sharing to advance collective knowledge that is put to the service of narrow private gain (see Charles 2001).

Returning to mechanisms of enclosure, intellectual property rights pertaining to plants include both plant breeder’s rights and patents. The key difference is that plant breeder’s rights cover only plant varieties, while patents can additionally be applied to genes, gene sequences, breeding processes, and biological information (Parfitt 2012, 35). In the U.S., both are held for twenty years (Matson, Tang and Wynn 2012). In a 2012 study of the European Patent Office it was reported that full patents are increasingly being issued for conventionally bred (non-transgenic) plants and animals, where the technical innovation is only minor (Then and Tippe 2012). As of 2012, there were over 1,000 pending patent applications related to conventional breeding. Monsanto, for example, was issued a patent on conventionally bred melons originally from India, allowing them to block access to breeding material derived from the melon.

However, genetically engineered (GE) crops are currently associated with higher levels of patent protection than conventionally bred crops, as they “enable a more complex interlocking of
various types of intellectual property protection than is available for other plants” (Parfitt 2013, 35). Seed varieties and transgenic traits are patented separately, and may be “mixed and matched” in a variety of ways (Matson, Tang and Wynn 2012, 10). For example, a single GE plant can be covered by plant breeders’ rights legislation and a utility patent simultaneously, while also being covered by utility patents on transgenic traits that have been inserted into the plant by means of genetic engineering. Further, inserted traits can be the property of multiple companies. In some countries where patents are not granted for plant varieties, the seed-biotechnology industry has been issued patents on traits, giving them roundabout patent rights over genetically engineered plant varieties (Paul and Steinbrecher 2003). Methods of genetic manipulation are also patentable. One study identified over 70 patents embedded in a single variety of GE “golden rice” (Kryder, Kowalski, and Krattiger 2000). Accordingly, in the current landscape of intellectual property rights, GE crops have been most entwined with processes of gene-plant commons enclosures.

Intellectual property rules vary across jurisdictions and are in constant flux, with tensions between states, capitals, social movements, and other actors. However, imperial capital has had much success in compelling most countries to adopt strict IPR regimes. Strong IPR rules protect U.S. competitive economic advantages in a range of advanced technology exports, including biotechnology, pharmaceuticals, industrial and military electronics, and raise barriers to entry against new enterprises (McAfee 2003). Broadly, this can be understood as preferential state treatment and active redistribution of wealth towards already dominant capitalist firms and sectors that are perceived as keeping that nation’s economy competitive in the global market (Azmanova 2015). In general, strong IPR in high-tech disadvantages poorer countries, who lack the resources not only for research and development, but also to operate in expensive patent worlds of legal complexity (Paul and Steinbrecher 2003). While strong IPRs are pushed by the U.S. and other wealthy countries, there is simultaneously vigorous opposition by the U.S. and dominant firms to biotechnology transfer and benefit sharing with developing countries, justified on the grounds that such arrangements “jeopardize private property rights” (McAfee 2003, 212).

Compulsions to adopt strict national laws in regards to intellectual property initially took place through the World Trade Organization’s (WTO) agreement on Trade-Related Intellectual Property Rights (TRIPS). TRIPS “ushered in a full-blown, enforceable global intellectual property regime that reaches deep into the domestic regulatory environment of states” (Sell 2003, 1). During the Reagan administration, a shift was made away from the United Nation’s World Intellectual Property Organization (WIPO) and instead to the WTO, for reasons clearly illuminated by Gerald Mossinghoff, Assistant Secretary of Commerce and Commissioner of
According to Mossinghoff:

There was a lot of frustration during negotiations about intellectual property matters. As the U.S. ambassador to the diplomatic conference of the World Intellectual Property Organization (WIPO), I personally felt this frustration because I was representing the United States of America—the wealthiest, most powerful, biggest free market in the world—and I had just one vote. As a result, the Reagan Administration decided to move these intellectual property negotiations out of WIPO and into the trade world. (1999, 3)

WIPO’s format of one state, one vote, and resulting attention to the concerns of poorer countries, was not conducive to the interests of American capital. In contrast, in the trade arena, the U.S. and American corporations were able to exert a high level of control over intellectual property governance. In her book *Private Power, Public Law* (2003), Susan Sell documents how 12 powerful corporations that most stood to benefit from strict IPR regimes, including Monsanto, DuPont, Pfizer and General Motors, succeeded in “getting most of what they wanted from a global IP agreement” in the drafting of TRIPS (2003, 2). More bluntly, Tony Clarke states that such corporations, “effectively wrote the TRIPS agreement that was adopted at the Uruguay Round” (1999, 9).

While both sweeping and legally binding, Sell argues that, in retrospect, TRIPS “looks like a relatively timid and permissive agreement” (2011, 448). She writes: “Despite the fact that a TRIPS advocate triumphantly exclaimed, ‘we got 95% of what we wanted,’ that 5% has always mattered, and 95% was never enough” (ibid, 448). Over the past fifteen years, vertical forum-shifting (negotiating below the multilateral level) has enabled dominant governments — and their dominant firms — to achieve TRIPS-plus results outside of the multilateral regime. Bilateral and regional agreements have institutionalized stronger and broader IPR standards, and have worked to eliminate some of the national flexibility that was granted under TRIPS. Drahos (2002) observes an incremental “ratchet” effect, whereby new bilateral and multilateral agreements have continuously moved in the direction of deepening and extending intellectual property rather than the reverse. Reflecting on changes since TRIPs, Sell states: “While many countries believed that they were negotiating a ceiling on intellectual property rules, they quickly discovered that they actually had negotiated only a floor” (2011, 448).

Of current significance are the Trans-Pacific Partnership Agreement and the Trans-Atlantic Investment and Partnership Agreement, potentially the largest and most secretive regional
agreements to be negotiated. As “both the scripters and cheerleaders of TRIPs-plus provisions” (Choudry 2010, 291), agrochemical-seed-biotech companies are playing key roles as both corporate advisors and through the Office of the United States Trade Representative itself (Fang 2015).

While intense and extensive, the push for ever-deepening intellectual property is far from complete, with patents on plants still unenforced or uncodified in national law in many countries. There is push-back against TRIPs-plus in many forums. Contradictions with international agreements that enshrine principles of reciprocity and the legal concept of “access and benefit sharing” — including the Convention on Biological Diversity, the Nagoya Protocol, the International Treaty on Plant Genetic Resources for Food and Agriculture, and the International Union for the Protection of New Varieties of Plants — are important sites of struggle (Thompson 2014). What remains most evident, however, is the very partial to non-functionality of treaties guaranteeing commons-based “rights” of farmers, indigenous communities, and researchers, in contrast to enforced TRIPS and trade treaties private investor and patent holder rights (Winter 2010; Zerbe 2015).

In addition to IPR laws themselves, enforcement agendas and abilities vary across states. Enforcement of intellectual property rights related to plants has been particularly strong in the United States, Canada, and Australia, and court rulings have indicated a tendency towards expansive interpretation of property rights in favor of the seed industry. In the well-known case of canola breeder Percy Schmeiser, the Canadian Supreme Court ruled that Schmeiser had breached Monsanto’s intellectual property rights when that company’s patented GE canola variety was found in his fields. Schmeiser alleged that Monsanto’s varieties had contaminated his fields and were not intentionally planted, but the court ruled that this was irrelevant. Similarly, U.S. patent law does not require a showing of infringement intent (CFS 2012). Often missed in the story of Schmeiser is that he was forced to abandon his own seed, which he and his wife had been saving for 50 years (Paul and Steinbrecher 2003).

In contrast, in the U.S. and Canada organic farmers have been denied in their claims of economic damage resulting from the inability to grow organic crops due to GMO contamination (Parfitt 2013). In a 2013 U.S. survey of organic farmers, over half responded that they had at some point been rejected by a buyer due to GMO presence in their grain. Others stated that pesticide drift associated with herbicide-tolerant GE crops was most costly, with some having to take areas of their farm out of organic production entirely (OFARM and FWW 2014). Property
rights are not enforced or allocated equally or without contradiction, and decisively privilege dominant capitals or industries in the case of GMOs.

In jurisdictions such as the United States, Australia, and Canada, farmers must sign Technology Use Agreement contracts with seed companies when purchasing GE seeds. These contracts impose patent license fees, as well as requirements to apply the company’s brand herbicide, to “comply with all reasonable directions and instructions” given by the seed company, to deliver crops to “approved grain handlers,” and not to save seeds or supply seeds to others (Parfitt 2013, 49). Further, contracts require farmers to give companies access to their farm records and premises for a stated period after planting (ibid). The Center for Food Safety and Save Our Seeds (2013) report that in 2003 Monsanto had an in-house staff of 75 dedicated to the task of catching farmers in breach of contract rules, and that DuPont had similarly hired private investigation firms to pursue farmers. As of 2013, in the U.S. Monsanto had filed 144 lawsuits based on claimed violation of Technology Use Agreement contracts, involving 410 farmers and 56 farm companies; however, the number of investigations is far higher as most cases are confidentially settled out of court. The total amount of money that Monsanto has collected from farmers through lawsuits and settlements is unknown, but exceeds USD $100 million just in what has been recorded on the company’s own website (CFS and SOS 2013, 30).

Because many states lack the capacity or will to enforce intellectual property rights in seeds, capital also pursues simultaneous technological strategies. Genetic use restriction technology (GURT) has been developed to cause sterility in second generation seeds, dubbed “terminator technology” by opponents. A second application of GURT activates desirable traits only with application of a proprietary chemical. The technology was developed during the 1990s through a partnership between the U.S. Department of Agriculture (USDA) and Delta & Pine Land, now a subsidiary of Monsanto. USDA spokesperson Willard Phelps described that the goal of terminator technology is “to increase the value of proprietary seed owned by US seed companies and to open up new markets in Second and Third World countries” (Rural Advancement Foundation International 1998, 2). Social movement resistance has halted the commercialization of GURT technologies up to this point, although Monsanto continues to hold three joint patents on it with the USDA, and Syngenta has requested a Canadian patent on terminator potatoes.

**Liberating Capital in the Agrifood System**

In addition to revolutions in law, ideology, and technology that have facilitated gene-plant enclosures, a range of other changes in policy and capitalism have given rise to the
agrochemical-seed-biotech oligopoly. This section provides a brief overview of the contours of a food system increasingly dictated by capitalist logic, which is also a continuation of historical imperial trajectories. What is covered is only a summary of key developments in the latter half of the twentieth century, though these events are also situated in longer projects of empire.

Following the Second World War, development discourse and policy originating from dominant countries and aimed at decolonizing countries took shape around poverty and hunger as political threats. Cold War politics posited “feeding the world” as a way to contain movements that threatened capitalist and Euro-American interests (Perkins 1997). From the 1950s, U.S. food aid became central to the global foodscape, a handy solution to overproduction of agricultural commodities resulting from the removal of New Deal parity. Cold War politics posited “feeding the world” as a way to contain movements that threatened capitalist and Euro-American interests (Perkins 1997). From the 1950s, U.S. food aid became central to the global foodscape, a handy solution to overproduction of agricultural commodities resulting from the removal of New Deal parity. Patel and McMichael explain, “food surpluses were distributed strategically as concessional food aid to states on the geopolitical frontline, and to those regarded as future customers of American agro-exports once they transitioned from aid to trade” (2009, 15). This “food aid regime” displaced local farmers and food economies as it also westernized diets in regions of the world that were shifting to more urban populations (McMichael 2005, 276; Friedmann 1982). Coinciding, postcolonial states sought to implement a development model that extended commercial monocropping systems, thus transforming rural landscapes and intensifying peasant dispossession while increasing the power of large landowners (Griffin 1974). A model of capital and energy intensive agriculture (often called “industrialized agriculture”) was exported globally through the European Marshall Plan and “Green Revolution” programs.

The Green Revolution worked to spread high-yielding varieties of wheat, rice, and maize along with fertilizers, pesticides, irrigation, and machinery. According to the Food and Agriculture Organization (FAO 1996), between 1970 and 1990 fertilizer applications in developing countries increased by 360 percent, while pesticide use increased around 8 percent each year. While initially yield increases were substantial, this was as much about major inflows of capital as it was about technology (Patel 2013). In the longer-term, the ecological consequences of the Green Revolution — soil erosion and declining nutrient levels, drops in water tables, pest adaptation to pesticides and less controllable pest outbreaks, fertilizer pollution, destruction of marine ecosystems — have undermined agroecosystem resilience, productivity, and overall food security (Pimentel and Pimentel 1990; Patel 2013; Pingali 2012; Perkins 1997).

Traditional cultivars and agroecological diversity declined precipitously upon the introduction of new seeds developed outside of regional specificities. A study in the Indian state of Andhra Pradesh found that 95 percent of traditional rice varieties were lost following the Green
Revolution. The Food and Agricultural Organization (2003) calculates that 75 percent of India’s rice production may now be planted with just 12 varieties. Mechanization, increased farming costs, rising values of land in proportion to wages, concentration of land ownership, and new dependencies on outside markets for agricultural inputs profoundly impacted the structure of rural communities. Impacts were particularly gendered, with women’s knowledge and work rendered invisible, and disproportionate burdens of pesticide exposure, deforestation, and water pollution borne by women (Satyavathi, Bharadwaj and Brahmanand 2010).

Perhaps most dominantly the Green Revolution was a “spurring of agricultural capitalism” (Patel 2013, 6), and one in which the landless, poorest, and most marginalized were the biggest losers. As with capitalist development more generally, while some smallholders gained, rural inequalities increased (Patel 2013). Finn Bowring summarizes: “In regions where land and labour is abundant but capital scarce, and where the infrastructure and incentives for service sector growth are lacking, labour-saving technology had a profoundly dislocating effect on the distribution of wealth and well-being” (2003, 130). Moreover, new openings were created for dominant foreign agribusiness as smallholder producers were increasingly pulled into the cycles of global capital, including the agricultural treadmill of reliance on increased inputs to maintain competitive productivity (Ward 1993).

The technologies of the Green Revolution and those that fueled rising production in the U.S. after World War II came directly from the battlefields. When Germany was cut-off from their Chilean nitrogen source in World War I, they developed enormous production capacities employing the Haber-Bosch process for the fixation of nitrogen from air. When the War was over and there was no longer a place to sell massive amounts of explosives, industry pushed nitrogen fertilizers into agriculture. Similarly, prior to World War II, the pesticide industry was insignificant. American research was poured into poisons that could “strategically” kill people and plants. Herbicides 2,4-D and 2,4,5-T (“Agent Orange”) were en route to destroy Japanese crops and starve people when the atomic bombs were dropped instead. Meanwhile, Bayer and BASF were researching and manufacturing poison gases in Germany. After the War, with large production capacities, enormous stocks, and no buyers, chemicals were reformulated and sold to farmers as herbicides and insecticides, thus preserving in peacetime what had become a lucrative wartime market (Lutzenberger 1998; Russell 2001).

The post-War developmentalist period underwent a profound shift beginning in the 1980s with the imperial “debt crisis” and neoliberal capitalist expansion. Structural adjustment programs, as deployed by the IMF, World Bank, and G-7, “broke down tariffs, dismantled national marketing
boards, eliminated price guarantees and destroyed national agricultural research and extension systems in the global South” (Holt-Gimenez and Shattuck 2011, 111). Through the “weapon of debt” (Wood 2003), poorer countries were compelled to replace staple food crops with export cash crops, while food stocks were sold off to repay debts. In this development scheme agricultural smallholders were offered what Chappell and colleagues summarize as two choices: “1) become commercial, export-oriented, farmers, or 2) disappear” (2013, 4).

Neoliberal policies were further enshrined in bilateral and multilateral agreements and the World Trade Organization’s Agreement on Agriculture, which removed the rights of states to support their own agricultural sectors through trade restrictions, production controls, or state trading boards. While countries of the global South were forced to open their unsubsidized farm sectors to the global market, the U.S., Japan and European countries retained huge subsidies for theirs, including subsidized fossil fuels and already mechanized agri-scapes. Artificially low-priced agricultural commodities displaced and marginalized the poorest food producers as “‘food security’ came to be redefined, and institutionalized, in the WTO as an international market relation” (McMichael 2005, 280).

After three decades of neoliberal policy and imperial capitalist compulsions, many developing countries were left with a “startling dependence” on the market for food (Holt-Giménez and Shattuck 2011, 112). Prior to structural adjustment and market liberalization, developing countries had a combined yearly agricultural surplus of USD $1 billion; at the height of the 2008 food crisis, Low Income Food Deficit Countries were importing over $38 billion in basic cereal grains (Holt-Giménez and Shattuck 2011, 112). To take a single example, after 9,000 years of food self-sufficiency and security, the North America Free Trade Agreement turned Mexico into a food deficit country alongside displacement of nearly 2 million peasant campesinos (Patel and McMichael 2009, 17).

U.S.-Europe backed trade policies that appear to favor farmers of the global North have been of primary benefit to a small number of major agribusinesses. Many farmers in the global North have likewise been driven into debt and off their land by policies that have compelled competitive intensification and put a downward pressure on prices. In the U.S., free-market restructuring began with the dismantling of New Deal parity in the 1950s, and was deepened in the 1970s with the stripping of supply management, selling-off of state grain reserves, and “fencerow to fencerow” planting incentives (in which overproduction was dealt with by export dumping). Farm populations declined 30 percent between 1950 and 1960, and another 26 percent in the following decade (Hauter 2012). The culmination of such policy was the 1996
Freedom to Farm Act, which eliminated all price floors and grain reserves, decoupling farm payments from production or price and causing a collapse in commodity prices. “Emergency” subsidy payments to remedy price drops continue today, and ironically are permissible under WTO rules. The primary benefactors of these direct government handouts are the largest corporate grain and meat processors, grain traders, retailers, and companies that sell seeds and pesticides used for large-scale monocrop commodity production in the “agrofood-feed-fuel complex” (McMichael 2010).

Corporate agribusiness has assumed an increasingly prominent and powerful role in the agrifood system, as both drafters and benefactors of decades of policies that have systematically taken power, resources, and livelihoods from the workers who grow the world’s food. At every point in the food chain, concentration of ownership, vertical control, and market power have reached historic highs (Matson, Tang and Wynn 2012; Hendrickson et al. 2001). Philip McMichael (2005) argues that we are in a new moment of a “corporate food regime,” embedded within “the governing orthodoxy of neoliberalism and its institutional arsenal” (Patel and McMichael 2009, 18). The corporate food regime is characterized by Eric Holt-Gimenez and Annie Shattuck as:

The unprecedented market power and profits of monopoly agrifood corporations, globalized animal protein chains, growing links between food and fuel economies, a ‘supermarket revolution’, liberalized global trade in food, increasingly concentrated land ownership, a shrinking natural resource base, and growing opposition from food movements worldwide. (2011, 111)

Further, there is an intensifying trend of financialization in the agrifood system, whereby finance institutions are becoming rapidly involved, while agribusinesses also increasingly behave as financial institutions themselves (Burch and Lawrence 2009). These trends have reinforced the power of agribusiness, though there is competition amongst nodes, while intensifying exploitation of food and farm workers and smallholder farmers (Isakson 2014; Murphy, Burch and Clapp 2012). As state subsidies for inputs have declined and output prices pushed downwards, the resultant rise in farmer debt has been an additional boon to agricultural suppliers, who often sell inputs on credit. There is evidence that agrochemical-seed-biotech companies are earning a greater share of their revenues from financial activities, and in particular the provisioning of debt, in recent years (Isakson 2014). Further, since the 2008 food price spikes, financial actors have made significant investments in seed and agrochemical companies (ibid).
This section has elaborated key moments in the expansion and intensification of capitalist logic and compulsion in the agrifood system, which have concentrated transnational capitalist firms’ power and wealth, deepened commodification and global market dependencies, dispossessed and further impoverished the majority of food producers, and are “the culmination of a long-term imperial trajectory” (McMichael 2005, 279). Through these conditions the agrochemical-seed-biotechnology oligopoly has arisen and amassed power, which it in turn uses to deepen arrangements of global monopoly-finance capital.

Consolidation of the Agrochemical, Seed, and Biotech Industries

Growing out of “free-market,” deepening property rights, and other capitalist policies, today a handful of transnational corporations dominate the agrochemical, seed, and agricultural biotechnology markets in the U.S., and increasingly the world. Capitalist policies purportedly encouraging efficiency, competition, innovation, and increased market choice have in fact supported capital’s inherent dynamic to trend towards centralization, monopolization, severing of creative capacities, and restricted market choice. While a particular industry and companies are examined here, these processes should be understood not as isolated instances, but as systemic compulsions of capitalism and especially as emerging from within the past decades’ intensification of capitalist logic. As Wood succinctly frames it, “capitalism is driven by competition, yet capital must always seek to thwart competition” (2003, 22). Capitalism’s built-in drive is towards Marx’s “centralisation proper,” the “transformation of many small into few large capitals” (1992, 626-627). Today’s centralization involves “ever larger agglomerations of corporate power” that are not only vertically and horizontally integrated within industries, but include giant conglomerates across many sectors (Foster, McChesney and Jonna 2011, n.p.). The agrochemical-seed-biotechnology arrives from within this moment of global monopoly-finance capital, and in turn feeds back into shaping it.

As of 2016, prospective corporate mergers would effectively consolidate the United States’ commodity seed market in the hands of two chemical companies. The extent of concentration in what has become the global agrochemical-seed-biotechnology industry has reached an unprecedented high, though consolidation in the agricultural input industry is not entirely new. Prior to hybrid seed technologies, most commercial seed suppliers were small businesses that sold varieties developed in the public domain with local or regional focus (Kloppenburg 2004; Hubbard 2009). The U.S. government sponsored programs to collect, develop, and distribute seeds for free, which was widely considered a public good vital to a stable and productive
Consolidation in the seed industry began as lucrative opportunities developed in hybrid seeds. Large chemical and oil companies were most involved. In the 1960s several acquisitions took place, including Northrup King and Funk Seeds (USA) by Ciba-Geigy (Switzerland), Nickersons (USA) by Shell (UK / Netherlands), and Asgrow (USA) by Upjon Co. (USA) (Srinivasan 2003). As the industry amassed wealth and political influence, more extensive patent protections for plant breeders were secured in the 1970s, thus spurring additional expansion of the seed industry. At this juncture companies began to integrate breeding, production, and conditioning, and replace the public sector as a source of seed and knowledge (Fernandez-Conejo 2004).

The advent of genetic engineering and the granting of full utility patents on living organisms following *Diamond v. Chakrabarty* initiated a new level of capital accumulation and consolidation. In the 1980s and 1990s, capitalist excitement about the potential of biotechnology ran high. When Genentech, the first biotech startup company to go public, offered a million shares of stock for USD $35 on October 14, 1980, Wall Street bid the price up to $89 within hours. By the end of the day the company was worth $500 million, with no product to sell (Charles 2001, 11). In the early days of biotechnology there was a proliferation of small start-up companies and public university research. The potential for profits was carefully watched by large firms, with little investment in initial expense. As the science developed, “the big players have moved in, picked up their options, and now dominate the high-tech field” (Mooney 1996, 143).

Monsanto is perhaps most notable as an early “big player,” and largely pioneered the strategies followed by other major chemical-pharmaceutical corporations. Monsanto was founded as a drug company in 1901, and its first product was saccharin for Coca-Cola — a derivative of coal tar that was later linked to bladder cancer. Prior to the creation of its agricultural division in 1960, Monsanto primarily manufactured chemicals, rubbers, and plastics; it then moved into agrochemicals, including 2,4-D and Roundup (active ingredient glyphosate) (Hauter 2012). In the early 1980s, with new opportunities to capitalize on both novel intellectual property laws and genetic engineering, Monsanto began to focus more on agricultural biotechnology, at first with caution, but then with gumption. In addition to changes in patent law, several factors played a role in the decision to direct the company towards agricultural biotechnology, including: 1) the growing environmental movement and enactment of regulations effecting Monsanto’s chemical products, as well as lawsuits that executives feared could go as far as to bankrupt the company;
2) the perception that the chemical industry was a “sunset industry” vulnerable to the rising price of oil and competition from generics, as well as the increasing expense and difficulty of developing new products; 3) the looming termination of its patent on its blockbuster herbicide product Roundup; and, 4) the 1980 Bayh-Dole Act’s opening of publicly funded research to private sector exploitation (Glover 2010; Charles 2001; Paul and Steinbrecher 2003).

Monsanto personnel became frequent visitors to university biotechnology labs, and upon seeing opportunity began their own research program that was among the first to successfully genetically modify a plant cell (Charles 2001). Research costs were high, and required revenues from Roundup and other chemical products, triggering internal tensions in allotment of resources and the company’s future directions (Charles 2001; Glover 2010). It was the discovery of the ability to engineer seeds to be resistant to Monsanto’s top-selling herbicide Roundup that solidified an apparent turn away from chemistry and towards biotechnology. In bringing Roundup tolerant crops to the market, Monsanto preserved the dominance of its most lucrative product by coupling proprietary “Roundup Ready” seeds with Monsanto brand herbicide. Thus, though the company sought to promote its ventures into the “life science industry” as a radical break from the past, from the start its biotechnology strategy rested on a combined agrochemical-biotech paradigm (Glover 2010, 76). Meanwhile, Monsanto did spin-off its industrial chemical division, which faced tremendous legal liabilities and declared bankruptcy in 2003 (Hauter 2012).

For a short time, Monsanto developed genetic traits and licensed these to other companies to do the actual breeding and selling of seeds. Beginning in the 1990s, a new strategy developed and major chemical and pharmaceutical companies involved in biotechnology research began to acquire seed businesses as a means of directly accessing the seed market (Bergeron and Chan 2004; Srinivasan 2003; Charles 2001). In acquiring seed companies, these transnational firms also obtained vital assets of well-developed seed lines and the germplasm needed to breed new varieties, production capacity, marketing and distribution links, and “local good will” (Matson, Tang and Wynn 2012, 15).

Over the next decade, Monsanto spent more than USD $12 billion buying at least 30 seed companies and several agricultural biotechnology firms (Khan 2013). In the “merger mania” of the 1990s, giant companies branding themselves “life sciences” emerged, all as major players in seeds, agrochemicals, biotechnology, and often pharmaceuticals, diagnostics, and vaccines (Hauter 2012, 236; Srinivasan 2003). Every large national seed firm in North America was acquired by one of these companies (Graff, Rausser and Small 2003). At least 200 independent
seed companies were dissolved over the period (Hubbard 2009). Many retained their old company names, making less visible to farmers and the public the outstanding vertical integration trend in the industry. As Matson and colleagues remark, “Farmers still wear Pioneer and DeKalb caps, not DuPont and Monsanto caps!” (2012, 15).

The 1990s consolidations were driven to a remarkable extent by control over intellectual property rights. Vertical integration — controlling a range of capacities and intellectual properties around plant genetics — became the dominant structure of the industry (Graff, Rausser and Small 2003). Because patents can be held on plant varieties, transgenic traits, biotechnology processes and research tools, the costs of negotiating access to the numerous component technologies are high (Srinivasan 2003). Further, a single company holding an IPR over an important technology in the R&D chain can block the developments of other researchers or firms. Large firms quickly achieve market and proprietary powers that make it excessively difficult for smaller firms to compete or to enter the field. Only a few could survive and thrive in an industry with high R&D costs that also requires exceptional patent maneuverings; in the 1990s the largest firms absorbed over three-quarters of all enterprises engaged in biotechnology research (Moss 2013).

Out of the 1990s mergers and acquisitions surfaced a vertically and horizontally integrated industry, today often referred to as the “Big Six” agrochemical-seed-biotech companies. While Monsanto may be most notorious, all have long histories in war and poison. Dow is the largest chemical company in the U.S. It manufactured nerve gases during World War II, knowingly allowed its pesticide product DBCP to cause permanent sterility in thousands of farm-workers, illegally dumped dioxins into Michigan’s waterways for a century, and is heir to the Bhopal disaster (Doyle 2004). DuPont started as a gunpowder and explosives company, providing around half of those products used during the American Civil and both World Wars by allied forces. During peacetime DuPont diversified into chemicals, for which they hold responsibility for 20 Superfund sites (Colby 1984). Syngenta was formed through the merging of pharmaceutical giants Novartis and AstraZeneca’s agrochemical lines, and is responsible for the infamous products paraquat, atrazine, and bee-killing neonicotinoids, as well as for the 1986 chemical disaster of the Rhine (Henry 2012; Whitehorn 2012). BASF and Bayer were both participants in IG Farben, dubbed the financial core of the Hitler regime and the primary supplier of chemicals used in Nazi extermination camps (Levy 1966). These are some of the same capitalist firms and family lineages that have profited most from, and been integral to shaping, the industrialization of food production through chemical, fossil-fuel based inputs.
Today these six global companies control 75 percent of private sector plant breeding research, 60 percent of the commercial seed market, and 76 percent of global agrochemical sales (ETC Group 2013). There are several ways to assess concentration in the industry, as it involves genetic traits, technological processes, and seed varieties and markets. By any measurement, the industry’s structure can be characterized as oligopolistic within the aforementioned markets (Matson, Tang and Wynn 2012). Economists tend to consider a market “non-competitive” when the concentration ratio of the top four firms (CR4) is 40 percent or higher, a threshold that has been exceeded in multiple arenas (Howard 2009; Hubbard 2009). Four of the Big Six control 62 percent of the global pesticide market and just eleven companies control 98 percent of the market (ETC Group 2013). Three of the Big Six control more than half of the global proprietary seed market. Ten companies, all based in the U.S., Europe, or Japan dominate upwards of three-quarters of the seed market. In contrast, in 1985 the top nine companies commanded less than 13 percent of the market (ETC Group 2013; Matson, Tang and Wynn 2012).

Seed markets are most concentrated for commodity crops that are genetically engineered — Monsanto and DuPont alone control 66 percent of the U.S. corn seed market and 62 percent of the soybean seed market (Matson, Tang and Wynn 2012). However, even these high numbers can belie the extent of market dominance, as these same companies’ patented seed varieties and transgenic traits are also licensed to the remaining retail market “competitors.” In the transgenic traits market, the Big Six hold more than 95 percent of trait acres for corn, soybeans, and cotton globally (Moss 2013). Just one company — Monsanto — has proprietary claim to transgenic traits in 95 percent of U.S. soy and 82 percent of corn (ibid). These two crops alone blanket over half of all U.S. farmland due to policies that incentivize their cultivation. Statistics in regards to Monsanto dominance are similar for virtually all genetically engineered crops grown globally; in 2014 this included 82 percent of all soybean grown around the world. The fewer than 100 “independent” seed companies that remain rely almost completely on the Big Six for licenses to genetic resources (Hubbard 2009).

While competitive accumulation is the logic of capitalism and there always exists competition and tension between capitals, the interests of particular capitals also tend to harmonize around sustaining and enhancing mutual conditions of profitability. The dominant actors in the agrochemical-seed-biotech industry are marked in the degree of political, technological, ideological, and market collaboration that they employ. They work together both to create new frontiers of accumulation, and to close those frontiers to competing capitals. Joint ventures and cross-licensing agreements in collaborative research, development, and commercialization are used to maintain collective dominance and expand mutual profitability. Monsanto has cross-
licensing agreements on proprietary germplasm and technologies with all other firms, Dow with four of the other five, and DuPont and Syngenta with at least three of the other companies (Shand 2012). “Stacking traits” has become an industry standard for biotech crops. Stacking allows multiple firms to insert their patented traits into single crops and thus collaboratively enhance their oligopolistic reach through “tie-in” schemes, selling one product or service as a mandatory addition to the purchase of a different product or service (Moss 2013; Matson, Tang and Wynn 2012). Longstanding rivalries between companies over patent infringement and antitrust claims have recently been settled through cross-licensing agreements and sharing technologies (Moss 2013; Parfitt 2013).

Matson and colleagues’ summary of “oligopoly” captures the recent trends of the industry:

In the formative stages of an oligopoly, some dominant firms may take strong independent action to expand their market shares at the expense of other dominant firms. But such action frequently draws a retaliatory response that leaves all of the firms worse off. Each of the dominant firms may eventually realize that strong independent competition hurts them all, and that cautious coexistence can benefit them all. (2012, 32)

The degree of “cautious coexistence” may change, but the dominant firms have sufficient market power to influence the price, output, and investment of an industry, and to limit new competitors (Foster, McChesney and Jonna 2011). In this, it is useful to avoid narrow definitions and debates around monopolies. Capital is constantly reorganizing within “small groups of highly concentrated power systems which are integrated with one another” (Chomsky 1998, n.p.). Noam Chomsky’s description of collections of “private tyrannies” is useful for interrogating concentrations of power and wealth in today’s “corporate capitalism,” including in the agrochemical-seed-biotech industry:

But there never was monopoly power; or there very rarely was monopoly power. Take highly concentrated power systems, like the energy industries. But they’re not strictly speaking monopolies. Shell and Exxon are competitors. This is a highly managed system of market administration, with enormous state power entering in the interests of a small collection of private tyrannies. (1998, n.p.)

Vertical and horizontal integration across the agrochemical-seed-biotech industry takes place within a wider context of ever-larger giant transnational conglomerates that also span sectors. Big Six companies are extensively involved in other industries including plastics, electronics,
automotive coatings, and pharmaceuticals. Bayer, for instance, operates 315 different companies worldwide. Monsanto, in contrast, generates the largest part of its revenues from Roundup and Roundup Ready seeds. Baran and Sweezy’s 1966 *Monopoly Capital* gives insight into this process that continues to unfold:

> Today the typical economic unit in the capitalist world is not the small firm producing a negligible fraction of a homogeneous output for an anonymous market but a large-scale enterprise producing a significant share of the output of an industry, or even several industries, and able to control its prices, the volume of its production, and the types and amounts of its investments. The typical economic unity, in other words, has the attributes which were once thought to be possessed only by monopolies. (1966, 6)

To the extent that there is competition within the agrochemical, seed, or agricultural biotechnology industries, it is almost entirely “oligopolistic rivalry, i.e., battles between monopoly-capitalist firms” (Foster, McChesney and Jonna 2011).

With dominance well established by a few companies, accusations of “cartel-like” business practices, including price fixing and trade control, are prevalent (Parfitt 2013; ETC Group 2013). Even without price fixing, oligopolistic markets enable firms to simply signal their intention to raise prices or restrict outputs, and others follow suit (Howard 2009). Intent aside, it is evident that prices have risen and market options dwindled as a result of market concentration. In the U.S., between 1995 and 2008 corn seed prices increased 139 percent for GE and 49 percent for non-GE; soybean seed prices increased nearly 200 percent for GE and 96 percent for non-GE (Matson, Tang and Wynn 2012). Prices that farmers received for their crops did not increase proportionately, and as a whole, commodity seed prices doubled relative to prices received for crops (Moss 2013). In 2015, seeds were the third-largest cost for farmers of corn, following land rent and fertilizer (Bunge 2015). Technology fees for transgenic traits likewise have steadily risen, with Monsanto reportedly tripling its fee for soybean seeds from 2002 to 2008 (Hubbard 2009).

The rhetoric of farmer choice is most central to the “discursive valorization of biotechnology” (Tourangeau and Smith 2015, 219). In fact, lack of market choice outside of expensive Big Six technology has been cultivated through elimination of other options. In the U.S., it is increasingly hard to find non-GE corn and soy seeds, or even GE seeds with only one or two transgenic traits (Hubbard 2009). It has become increasingly difficult to purchase Bt seed (engineered with a gene from the bacterium *Bacillus thuringiensis* to produce insecticidal
proteins) that is not also Roundup Resistant. Thus, what seed is available on the market is largely technologically and legally bound to Monsanto’s herbicide (ibid). While dominant narratives assert “market demand” as driving product development and supply for GE seeds, evidence points more strongly to lack of alternative options in a highly concentrated market, coinciding also with structural incentives to grow commodity crops (Windham 2007).

Research in several other countries also indicates that market options have been reduced following the introduction of GE crops (Hilbeck et al. 2013). In the South African cotton industry, various marketing arrangements and contracts with dominant processors are used to marginalize farmers who do not adopt Big Six GE cotton (Witt, Patel and Shnurr 2006). Research from India suggests similar dynamics (McKinney 2013). Further, once adopted farmers’ general autonomy is severely restricted by GE crops, which come with strict contractual use agreements that frequently define “what to grow and how to grow it, which inputs to use, where and to whom to sell the product” (Parfitt 2013, 48). Prohibitions on seed saving also effectively lock farmers into cycles of reliance on Big Six products as other options are eliminated.

While capitalism’s systemic drive is towards consolidation, limits can be imposed by states to restrict monopolistic arrangements. The non-enforcement of antitrust law should be considered state facilitation of capital concentration. In the U.S., antitrust law is a product of arduous social movement struggle against oligarchs (Piott 1985). While regulations that empower the government to challenge “anti-competitive” mergers and acquisitions do exist, there has been no limitation on agrochemical-seed-biotech industry mergers (Moss 2013; Matson, Tang and Wynn 2012). Likewise, in monopoly related court cases the U.S. judiciary has consistently favored industry patent holders and the strongest interpretation of their property rights over others’ claims to various rights (Moss 2013). The benefits of operating as an oligopoly are also somewhat codified in antitrust policies that, “restrain blatant monopolies of the old-fashioned sort [but] seem to provide a tacit ‘safe harbor’ for a considerable amount of industry concentration and ‘market power’” (Matson, Tang and Wynn 2012, 33). At the global level, the WTO, free trade and investor treaties have worked to liberate capital flows and extend property rights and markets while simultaneously rejecting inclusion of mechanisms to limit capital consolidation and “anti-competitive” behavior.

Capital’s flexibility to shift shape, with state support, is likewise key to accumulation strategies and successes. As Wood argues, “Any particular organization of capitalist wealth, such as the biotechnology giant, Monsanto, can be challenged, even wrecked. But the capitalists involved
can simply restructure their wealth, restore their profits in another form, and resume their destructive activities" (2003, 15). What today crystallizes as six corporations in an oligopolistic relationship around seed-agrochemical-biotechnology markets carries a long list of remnants of corporations spun-off, renamed, dissolved, merged and demerged, all in dynamic movement to seize new opportunities and shield particular capitals from the consequences of their actions. The corporate form and its enabling legal regimes are central mechanisms to the workings of power, but at the same time, “corporations, as powerful as they are, are only vehicles for capitalists” (Greenfield 2002, n.p.).

While big, powerful, and oligopolistic, the Big Six are far from omnipresent. Though estimates vary by crop and region, around 80-90 percent of the seed used by farmers in the global South remains outside of the so-called “formal” global proprietary market (ETC Group 2013). Instead, the primary source of seed remains saved seed, including those exchanged through various local institutions and markets. Further, while trends indicate steady growth of Big Six patented-GE products, these continue to be for the four major crops of soybean, corn, cotton, and canola concentrated in a handful of major countries. In 2015, around 180 million hectares of global cropland were planted in such crops, up from 67.7 million hectares in 2003. Over three-quarters of this acreage is in the U.S., Brazil, and Argentina, with a large majority of the remainder in India and Canada (James 2015).

Looking towards new frontiers of growth, the industry has more recently trended towards acquisitions and partnerships with global South based companies, especially in India and Africa (ETC Group 2013). More emphasis is being put on fruits and vegetables, and especially crops for markets in the global South. The Big Six will, as capitalist firms must, exert their accumulated wealth, power, and market dominance to amass more of it, perhaps consolidating further in the process. The consequences for the future of food and agriculture are significant.

Privatized Science and Capital’s Technology Pursuits

Along with the constitutive co-emergence of biotechnology, deepening of intellectual property rights, and rise of the highly consolidated “life sciences” industry, this small group of firms has become deeply involved in agricultural research and development, with major influence on the directions of the agrifood system. This section chronicles ways in which the oligopoly’s products are conditioned upon privatization of public science, how this is situated in the wider neoliberalization of science, and correspondingly, how private capital has increasingly come to dominate agricultural research. It sketches the pathways that are being entrenched as capital
pursues technology that deepens a pesticide-intensive agrifood system, while undermining critically important agricultural research and innovation.

While the ideological champion of laissez-faire and “letting markets lead,” the U.S. has a long history of state developmental efforts, which in the years following World War II were carried out within a framework of national defense policy (Block 2008; Mazzucato 2013; Chomsky 1998). Following the discovery of the structure of DNA in 1953, substantial public funding through the National Institute of Health (NIH) rapidly advanced molecular biology and paved the way for the emergence of genetic engineering in the 1970s. Publicly funded basic sciences through the 1950s and 1960s led to breakthroughs in understanding the genetic code and figuring out how DNA replicates, with experiments in gene splicing underway by 1967.

During the 1970s and 1980s, political rhetoric largely shifted from Cold War defense to global economic competitiveness, with high-technology and the “knowledge economy” increasingly viewed as critical to U.S. hegemony (Block 2008; Vanloqueren and Baret 2009). Concurrently, gene-splicing was achieved by Cohen and Boyer in 1973, launching technological possibilities for valuable new commodities (Argyes and Liebeskind 1998). The National Institute of Health was “aggressive in advancing the technology” of genetic engineering, both within their own labs and through grants that rose from two in 1975 to 1,061 in 1980 (Block 2008, 177). Every year since 1970 (with the exception of 2006) NIH funding for the “life sciences” industry has increased, with the budget for 2012 alone reaching USD $30.9 billion (Muzzacato 2013, 69). It was the U.S. treasury that financed the basic science leading to biotechnology, most of its breakthroughs, and has continued to pour funding into its applications (Argyes and Liebeskind 1998; Muzzacato 2013; Graff 2004). Molecular biology also continues to be a most privileged domain of government funding in Europe and other countries (Vanloqueren and Baret 2009). In general, biotechnology industries rely much more heavily on publicly funded science than other industries (McMillan, Narin and Deeds 2000; Xia and Buccola 2005).

While the U.S. government’s “Developmental State” clearly exists, it is rendered invisible by ideological market fundamentalism (Block 2008, 15). As Vallas, Kleinman and Biscotti remark:

\[\text{The knowledge economy did not spontaneously emerge from the bottom up, but was prompted by a top-down stealth industrial policy; government and industry leaders simultaneously advocated government intervention to foster the development of the biotechnology industry and argued hypocritically that government should ‘let the free market work.’} \ (2009, 66)\]
The loud and constant rhetoric of private sector leadership and innovation masks the privatization of public investments and innovations; this is the case from aviation and nuclear energy to computers, the Internet, and biotechnology (Muzzacato 2013). Privatization of “knowledge economy” technologies and information have been facilitated especially since the 1980s by policies implemented mostly during the presidencies of Ronald Reagan and George H. W. Bush, including a range of initiatives encouraging “public-private partnership,” technology transfer to private industry from public institutions, and public subsidy to technology companies (Block 2008, 180). These policy changes were tied to wider neoliberal shifts, including transformations in universities, public research, and science as they were increasingly embedded in commercial possibility (Slaughter and Leslie 1997; Mirowski 2011). Notable features of what is variously described as the impact of neoliberalism on public science, or the neoliberalization of technoscience, include the rollback of public funding for universities; the subjection of public research agendas to commercializable products; increasing public university dependence on industry funding; the intensification of intellectual property and commodification of knowledge; shifting public understandings of science and assumptions about public researchers' “conflict of interest”; and the normalization of a “business ontology” (Fisher 2009) applied to all realms of the university (Lave, Mirowski and Randall 2010; Newfield 2008; Lotter 2008).

Of particular significance to agricultural biotechnology and the rise of the oligopoly is the Bayh-Dole Act of 1980, which allowed public universities to privatize and patent the results of research funded by public monies. Prior to Bayh-Dole, federally funded NIH research was in the public domain and could be adopted by any company or researcher (Garcia-Sancho 2012). Subsequently, the Technology Transfer Act of 1986, lobbied for by Monsanto, mandated federal agencies to make technology transfer part of their mission (Hauter 2012; Block 2008). Policy changes were embedded in new norms around the role of science and public research, and especially in the idea that universities should play a central role in assisting the United States in “resolving its global competitiveness problems” (Argyres and Liebeskind 1998, 434). Perhaps more than any other sector, biotechnology showed the “most potential for profitable commercialization” (ibid, 428). Often led by enthusiastic administrators, universities adapted by privatizing and selling their technologies, encouraging direct industry investment, and establishing special technology transfer offices staffed with professional marketers (Feller 1990; Argyres and Liebeskind 1998). The rate of growth in annual patent filings rose tenfold in the two decades following Bayh-Dole (Jasanoff 2005). While transformations were most marked in the 1980s, they were already well underway with the advent of genetic engineering and the NIH’s
encouragement of scientists to commercialize their discoveries. Though many scientists were initially “scandalized” by their NIH-funded colleagues’ early commercial biotech projects, a turn to the private sector rapidly became the norm (Block 2008, 177).

Since their establishment in 1862, land-grant universities in the U.S. have played a critical role in agriculture, including in plant breeding, responding to agricultural challenges, and pioneering research on environmental stewardship (FWW 2012; Kloppenburg 2004). Research is often done in partnership with farmers and distributed broadly through rural extension offices. Moreover, high quality seed has long been made available to producers on a non-proprietary basis through land-grant institutions (Matson, Tang and Wynn 2012; Hubbard 2009). As with universities generally, land-grant institutions today increasingly interpret their contractual commitments to society as best served by transferring technology and knowledge to the market. Only a limited subset of technological trajectories are commercializable (Vanloqueren and Baret 2009). As these come to dominate research agendas, others are marginalized. With 1980s policy changes, goals increasingly came to focus on increasing national competitiveness in the global market, shifting public research dollars away from what were considered more “public goods,” and towards advancing what were viewed as cutting-edge “growth” sectors. This resulted in a substantial increase in funds, faculty, and students dedicated to agricultural biotechnology at land-grant universities, alongside a decline in public plant breeders (Hess 1991).

In recent decades there has been an overall decline in public funding of agricultural research at both land-grant universities and the USDA, and a dramatic rise in the role of private capital in agricultural research. While these recent shifts are most substantial, Jack Kloppenburg (2004) importantly traces the beginnings of the decline in public funding of plant breeding in the U.S. to the development of hybrid corn. With the rise of hybridization, the U.S. Secretary of Agriculture in the early 1920s replaced traditional corn breeding programs with a centralized hybrid breeding program that secured ten times the budget. Berlan and Lewontin (1986) argue that had the same public resources been invested in open-pollinated corn varieties, the yield gains delivered by hybridization likely would have been well exceeded in technologies that could be openly reproduced by farmers. This historical moment is both important to understanding capital’s increasing role in agricultural research, and also a critical illustration of how agricultural technology and innovation pathways are set, locked-in, and foreclose other potential pathways.

With the advent of biotechnology, in the early 1990s industry funding of agricultural research at land-grant universities exceeded USDA funding. In 2009 industry investments were USD $822
million as compared to the U.S. Department of Agriculture’s $645 million (FWW 2012). A growing body of literature documents the ways in which the direction, nature, and outcome of scientific research is distorted by private sector involvement in universities (Mirowski 2011; Newfield 2008) and the growing conversion of “land-grant universities into corporate contractors” (FWW 2012, 4; Jasanoff 2005).

Much privatization of public research is accomplished by “merely topping up funds with a small proportion of the total” (Paul and Steinbrecher 2003, 101). Nelson Kiang stated frankly in 2001:

You used to have big corporations with labs that would do their own basic research…
But…it’s much more effective to turn the universities into R&D labs for them. By sprinkling money around…they don’t have to compete for the best brains in the academic world, they simply buy them at a low cost. (Clayton 2001, n.p.)

An early example that drew much public attention was a partnership between Novartis (now Syngenta) and the University of California at Berkeley in 1998. Novartis paid USD $25 million over five years in exchange for free access to sift through the Department of Plant and Microbial Biology’s research findings, the ability to license one-third of research outputs (including those they did not fund), the right to delay publication of research results, and seats on the research committee overseeing the department research agenda (Clayton 2001; FWW 2012). External evaluation of the Novartis-Berkeley deal noted changes in the “culture of science” (Vanloqueren and Baret 2009, 976), with participating administrators and scientists tending to define the “public good” as development of commercialized products (Busch et al. 2004).

The Novartis-Berkeley deal is illustrative of the types of “public-private partnerships” increasingly sought at universities, which direct research and researchers away from traditional non-proprietary agricultural science, and towards commercializable research. As the borders of what is commodifiable have expanded, agricultural science, technology, and seed that is freely available through public research institutions has declined (Hubbard 2009). Increasingly acting as businesses themselves, universities have joined Monsanto in programs that sue farmers for seed patent infringements, including using private investigators to catch farmers in the act of seed saving (FWW 2012). They have also intervened on the side of Monsanto in high-profile court disputes, arguing that strict intellectual property rights around seeds are important for their own contributions to innovation. The University of California alone spends USD $28 million annually employing lawyers to manage its IPR portfolio (Bond-Graham 2013). University public-private partnerships often lead to delays in publication of research for commercial and patent-
related reasons, as well as less sharing of research information along traditional lines of academic freedom and inquiry (Bowring 2003; Moss 2013; Paul and Steinbrecher 2003; Campbell, Louis, and Blumenthal 1998).

Independent evaluation of agricultural technologies has been severely limited by corporate influence, intellectual property rights, and lack of funding for research that might prove unfavorable to industry (Krimsky et al. 1996; Hilbeck et al. 2015; FWW 2012). Nearly half of land-grant agricultural scientists surveyed in 2005 stated that they had received funding from a private company, while one third reported consulting for private industry (Goldberger et al. 2005). Many recent studies link private funding sources to the outcomes of research (Bowring 2003; Mirowski 2011), and funders often impose requirements of pre-publication review of results (Campbell, Louis and Blumenthal 1998; Parfitt 2013).

Agricultural scientists at universities are dependent on not only financing, but also “technical cooperation” from seed companies: “‘People are afraid of being blacklisted,’ he [Elson Shields, Cornell professor of entomology] said. ‘If your sole job is to work on corn insects and you need the latest corn varieties and the companies decide not to give it to you, you can’t do your job’” (Pollack 2009, n.p.). Research involving Big Six products are generally performed only with company approval, and comparisons between different seed platforms are rare (Moss 2009; Scientific American 2009). As another scientist told the New York Times, “If a company can control the research that appears in the public domain, they can reduce the potential negatives that can come out of any research” (Pollack 2009, n.p.). The agrochemical-seed-biotech industry is also most notorious for harassing and directly attacking the credibility of researchers who raise concerns with their products (Aviv 2014; Lotter 2008). In manifold ways, both straightforward and more subtle, industry’s presence in universities has had deleterious impact on scientific independence, integrity, and outcome.

Outside of universities, private sector spending in agricultural research has also risen dramatically and become increasingly concentrated since the advent of biotechnology and strengthening of intellectual property rights around plant materials. Private agricultural research expenditure in the U.S. increased by 1,300 percent between 1960 and 1996, while public spending stagnated and more recently has decreased real terms (Matson, Tang and Wynn 2012; Knutson 2013). In 2006, private R&D funding stood at USD $7.4 billion in comparison to $5.7 billion (in inflation-adjusted 2010 dollars) in total public funding (FWW 2012). By 2010, the private sector was spending $11 billion on agricultural research (including some food processing), with the most rapid growth in crop seeds and biotechnology traits (Knutson 2013).
Globally, public funding for agricultural research and development has followed the same trend, stalling by the 1990s while private sector research increased (Paul and Steinbrecher 2003). The Big Six account for over three-quarters of all private sector research and development in both seeds and agrochemicals globally (Shand 2012). In 2007, the combined agricultural research and development spending of the Big Six was at least 23 times higher than that of all of the primary international crop breeding institutes under the Consultative Group on International Agricultural Research (CGIAR). CGIAR tends to work closely with and rely on the “donations” and “partnerships” of the private sector, although there is notable contestation around its research agendas (Paul and Steinbrecher 2003; Kuyek 2002).

On average, the Big Six devote upwards of 70 percent of seed and crop research to genetic engineering (Shand 2012). Despite promises of drought-resistant, nutritionally enhanced, and other wonder crops that are always right around the corner, forty years into research and twenty years into commercialization, the agrochemical-seed-biotech industry’s only substantial biotech products remain crops engineered for herbicide-tolerance or to produce their own Bt (*Bacillus thuringiensis*) insecticide. Four crops (corn, soy, canola, and cotton) engineered with one or both of these transgenic traits account for 99 percent of global acres planted in GE crops (James 2015). The other less than one percent of worldwide GMO acres are in sugar beet (Canada, U.S.), alfalfa (U.S.), some squash varieties (U.S.), and papaya (U.S., China). Most telling, 85 percent of all acreage devoted to GE crops contain the trait for tolerance to glyphosate. Monsanto’s initial blockbuster product remains the bulk of “actually existing GMOs” (Philpott 2014). The vast majority of GE crops are part of large-scale monocrop systems producing animal feed or automotive fuel, with a smaller amount refined into highly processed food-fillers for direct human consumption. These crops, and the agricultural landscape of vast pesticide-intensive grain production of which they are a part, are incentivized by federal U.S. policy, which also disincentivizes ecologically regenerative alternatives.

The immediate horizon of new biotech crops includes more of the same, but in increasingly toxic versions (Dow AgroSciences 2011). Widely adopted by farmers across the U.S. for their labor cost-saving, herbicide-tolerant crops led to a 527 million pound increase in herbicide use between 1996 and 2011 (Benbrook 2012). Herbicide-tolerant crops allow for spraying both before and during the growing season without harming crops, thus greatly simplifying weed management. As larger swaths of land were brought into production with single crops and single herbicides year after year, weeds evolved resistance (International Survey of Herbicide Resistant Weeds 2013; Gurian-Sherman and Mellon 2014). Glyphosate-resistant weeds are
today found on nearly 100 million acres of farmland across the U.S., also leading to heavier and more toxic herbicide use (Landrigan and Benbrook 2015).

The industry’s response has been to engineer crops to withstand more toxic herbicides and combinations of multiple herbicides (Mortensen et al. 2012) — as Brandon Keim puts it, “bringing back old chemicals in new ways” (2012, n.p). In the pipeline for planting in 2015 were Dow-Monsanto crops resistant to both 2,4-D and Roundup, branded “Enlist Duo,” explicitly pitched by the companies as the answer to glyphosate-resistant “superweeds” (Dow AgroSciences 2011). Scientists predict that the new crops “will facilitate a significant increase in herbicide use,” as weeds develop resistance to multiple herbicides and farmers respond with the chemical technologies most “economical” and readily available (Mortensen et al. 2012, 75). Dow and Monsanto themselves predict a surge in herbicide use, while the United States Department of Agriculture (USDA) estimates a three to sevenfold increase in agricultural use of 2,4-D by 2020, from 26 million to as much as 176 million pounds per year (USDA 2013). Both Roundup and 2,4-D are increasingly linked to serious health and environmental harms (Keim 2014), with the World Health Organization classifying glyphosate a “probable carcinogen” in 2015, and 2,4-D also a controversial endocrine disrupter linked to cancer (Beyond Pesticides et al. 2004; Bjørling-Poulsen, Andersen and Grandjean 2008; Landrigan and Benbrook 2015). After being approved, the Environmental Protection Agency revoked registration of Enlist Duo in November of 2015 due to litigation by a coalition of environmental groups. Its future remains uncertain.

In 2015, the USDA also approved commercialization of Monsanto's dicamba-tolerant soybeans and cotton, predicting that dicamba use will increase 88-fold and 14-fold for soybeans and cotton, respectively (Hauter 2015). A large majority of the GE crops being considered for deregulation by the USDA are for herbicide-tolerance or insect resistance, while Dow has a patent claim on a mechanism that would allow nine types of herbicide-resistance to be engineered into a single plant (Keim 2014). Monsanto’s 2015 bid for Syngenta, which holds the largest share of agrochemicals, made clear that proprietary pesticide+seed combos are the industry’s priority technological innovation.

Capital’s inability to consider long-term consequences is made plain in the circular response of engineering crops for heavier chemical tolerance as a counter to natural evolution against chemicals. Not only do the industry’s biotech products deepen and speed-up a toxic and unsustainable “pesticide-treadmill,” but they are treading towards the last line of defense in chemical agriculture, with potential for massive disruption to production systems (Benbrook
In deregulating such crops and continuing policies that incentivize ever-larger monocrop commodity production, the U.S. federal government declines to regulate capital’s destructive outcomes while simultaneously structuring markets so as to actually exacerbate them.

In contrast to herbicide-tolerant crops, genetically engineered Bt crops were generally believed to have reduced insecticide application in the U.S.; a widely cited analysis estimates a reduction of 123 million pounds between 1996 and 2011 (Benbrook 2012). However, more recent analysis has shown that while applied insecticide has decreased with the introduction of Bt crops, neonicotinoid (an insecticide) seed treatment has risen dramatically, to an extent that insecticide use almost tripled in overall maize hectares by 2011 (Douglas and Tooker 2015). Insecticidal seed treatments are typically one component of larger packages of technologies sold to farmers, that, for instance in maize, “can include germplasm (i.e., crop variety), up to eight transgenes, and up to six or more different seed treatments (fungicides, nematicides, and insecticides)” (ibid, 5092).

Margaret Douglas and John Tooker describe what they call a shift towards an “insurance paradigm of pest management,” in which GE crops and insecticidal seed treatments are deployed even when target pest densities are expected to be low (ibid, 5092).

Like the evolution of herbicide-resistant weeds, Bt crops have also created new challenges with the evolution of Bt-resistant pests (Gassmann et al. 2011; Dhuru and Gujar 2011). As indicated by the rapid development of both pesticide-resistant weeds and Bt-resistant pests, a most fundamental problem is the general monocrop model of agriculture encouraged and supported by herbicide-tolerant and Bt crops. Both GE varieties simplify pest management systems in ways that make them more prone to “countermoves” (Lewis et al. 1997) within the system that neutralize their effectiveness (Benbrook 2001). Benbrook argues that both technologies enhance the ability of farmers to rely more fully on pesticides, and that they “allow farmers and pest management experts to postpone reckoning with the fundamental problems plaguing contemporary, treatment-oriented pest management” (2001, 207). Put differently, they contribute to sustain and reinforce existing agricultural production systems, and delay fundamental shifts required for environmental sustainability (IAASTD 2009). How genetically engineered crops could be used in more biodiverse and low-input systems remains largely theoretical.

While the U.S. remains the pioneer and largest grower of herbicide-tolerant and Bt crops (71 million hectares), vast acreages are also devoted to their cultivation in Brazil (44 million hectares), Argentina (24.5 million hectares), India (11.6 million hectares) and Canada (11 million hectares) (James 2015). Brazil and Argentina’s industrial agriscapes of herbicide-tolerant corn
and soybean destined for car-fuel and cattle-feed are similar to their counterparts in the global
North. Over half of Argentina’s agricultural land is planted in GE soybeans, correspondent with
consolidation of farm sizes, displacement of peasant agriculture, and a steep increase in
agrochemical use (Lapegna 2015). In India, more expensive Bt cotton seeds have been useful
mostly to large farms with access to irrigation; 65 percent of India’s cotton crop, however, comes
from smaller farmers for whom reliance on pesticides and the higher cost of Bt seeds has
increased the risk of bankruptcy (Gutierrez et al. 2015). These conditions are inseparable from
the restructuring of agricultural production systems through the introduction of Green Revolution
farming techniques and inputs, increasing reliance on loans and mechanisms of debt, and
greater dependence on and vulnerability to global markets. Studies in a variety of locations
show that, in general, currently available herbicide-tolerant and Bt crops require vast,
monoculture fields in order to be financially viable (Witt et al. 2006; Schnurr 2013; Gutierrez et
al. 2015). Larger, wealthier farmers tend to benefit disproportionately from such technologies,
exacerbating rural inequalities in similar fashion to Green Revolution technologies (Schnurr
2015; Patel 2013).

The industry’s biotechnology products both rely on the “industrial,” chemical-monoculture model
of agriculture, and cement this model by simplifying industrialized production further (Hilbeck
2008). Moreover, the lucrative profits generated by private capitals and short-term capitalist
growth incentivize deepening the chemical-biotech-monocrop technology pathway. This narrow
pathway is not innate to the technology of genetic engineering (vast certified “organic”
monocultures can likewise be ecologically destructive and controlled by few firms), but to its
deployment by dominant capitals within structures of competitive global capitalism. Besides
herbicide-tolerance and Bt, other traits that have dominated agricultural biotechnology research,
including transportability, shelf-life, visual appeal, suitability for food processing, and uniformity,
“are the means by which the products and needs of farming communities and environments are
adapted to the requirements of the highly mechanized, vertically integrated, chemical-industrial
complex” (Bowring 2003, 133).

While the focus of this thesis is not on the construction of scientific knowledge itself, it is critical
to note that the agricultural biotechnology project is in many ways a continuation and extension
of a reductionist agriscience paradigm that is intimately bound with the rise of capitalism,
colonialism, the marginalization of indigenous and other ways of knowing, and the
industrialization, mechanization, and chemicalization of agriculture (Busch et al 1991; McAfee
2003). It is not merely structures of capital that drive inequality, dispossession, and ecological
devastation in agrifood systems, but undergirding dominant ideologies that took hold especially
in the European Scientific and Industrial Revolutions. While “science” itself is a highly contested terrain in regards to genetic engineering, its deployment by dominant agricapitals reflects reductionist and positivist dogmas that neglect the fact of complexity, dynamism, unpredictability, randomness, and the impossibility of “precise” manipulations of DNA (McAfee 2003; Lewontin 2002; Fagan, Antoniou and Robinson 2014).

As a wide range of analytical literatures document, it can become increasingly difficult to shift technological pathways as they become “locked-in” and dependencies, social habits, and vested interests are entrenched (Stirling 2009, 3; Winner 1977; Stringer and Johnson 2001; Cowan and Gunby 1996). The trajectories that are being entrenched, as others are marginalized, are proving increasingly dangerous by the realities of climate change and ecological degradation. While there is maturing scientific consensus regarding the need to radically transform agrifood systems for long-term sustainability (IAASTD 2009; Kiers et al. 2008; Reganold et al. 2011), opposing directions are at the same time locked-in by the compulsions of the capitalist market, controlling capitals, and facilitating states. Agricultural science and technology dominated by capital and capitalist logic is increasingly narrowing diversity of research, diversity in fields, and global genetic diversity, while thwarting innovation and marginalizing the forms of research that are most critical to environmental realities. Or as Mirowski (2011) puts it, “Science-Mart” is trending towards the production of ignorance.

Incentives for capital to innovate will always be narrowly defined by its returns. Here arises a most critical contradiction in the productivity and innovativeness of capital. Not only is private property a fetter on the flourishing of the cultural commons and advancement of knowledge, but directions and pathways of innovation are severely limited by capital's mandates. Even by limited techno-economic accounts, innovation in agricultural biotechnology has declined alongside industry consolidation (Moss 2009; Fernandez-Cornejo and Schimmelpfennig 2004; Schimmelpfennig, Pray and Brennan 2004). However, assessing “innovation” is not merely a matter of quantitative counting of technological progression, but requires asking: progressing towards what, for what reasons, at whose benefit and expense, and to the foreclosure of what alternative pathways (Stirling 2009).

With the agrochemical industry playing a defining role in agricultural R&D, and public agricultural science increasingly embedded in the mandates of capital, there is an increasing abandonment of science and technology designed for purposes of broader social benefit and innovation on non-capitalist terms. It is widely recognized that “industrialized” monocrop production is highly unsustainable and a major contributor to climate change and degradation of
the natural commons (IPCC 2007 and 2014; UNEP 2007; Millennium Ecosystem Assessment 2005; IAASTD 2009; Weis 2013). Concomitant is the acknowledgement that meeting the world’s food needs in an environmentally sustainable way requires major transformations to practices often described as “agroecological,” or the application of ecological science and principles to agricultural systems (IAASTD 2009; UNCTD 2013; Molden 2007; Kiers et al. 2008; DeSchutter 2011a; De Schutter and Vanloquerencite 2011). The most comprehensive global assessment of agriculture to date, the IAASTD (International Assessment on Agricultural Knowledge Science and Technology for Development 2009), strongly concluded that the world must fundamentally “reorient our food and agricultural systems towards sustainability, health, bio-cultural diversity, ecological resilience and equity” (Ishii-Eiteman 2009, 1). The IAASTD especially emphasized agroecological methods, increasing farm diversification, reducing agrochemical inputs, and enhancing biodiversity conservation at multiple scales. The agroecological methods emphasized by the IAASTD are incompatible with monocrop and input-intensive agricultures that are the basis of the existence of the agrochemical-seed-biotech companies’ and other powerful agribusiness.

As emphasized by the IAASTD, investments in agricultural knowledge, science, and technology that work with and from local and farmer knowledges are critical to “enhance sustainability while maintaining productivity in ways that protect the natural resource base and ecological provisioning of agricultural systems” (McIntyre et al. 2009, 28). There is maturing scientific consensus that, if adequately supported, agroecological farming systems can deliver equivalent and/or alternative measures of productivity to highly mechanized systems, while contributing extensive positive environmental benefits (Pretty et al. 2006; De Schutter 2011a; Badgley et al. 2007; McMichael 2015). While a “yield gap” is frequently cited to justify industrialized methods, what is neglected is the marginalization of research investment into alternative methods, and the unsustainable outside inputs needed to sustain such yields. As the United Nation’s Special Rapporteur on the Right to Food Olivier De Schutter (2011a) points out, large, mechanized monocropping operations outperform smaller diverse farms on only one measure — productivity per unit of labor. Agroecological methods are not only more resource efficient, producing more from less, but also can have higher productivity per hectare when appropriately supported (De Shutter and Vanloqueren 2011). In contrast to technologies like herbicide-tolerant corn, agroecological methods are predominantly non-proprietary and not patentable, generally not transferable en masse, and require place-based R&D (Lotter 2008).

As was also a key finding in the IAASTD, inadequate attention has been devoted to the “generation, dissemination, and uptake” of science and technology designed with and for the
rural poor, who produce a majority of the world’s food (Kiers et al. 2008, 320). The amount of
global research spent on solving problems of agriculture in developing countries (home to
around 80 percent of the world’s population) amounts to less than 3 percent of the total values
of agricultural subsidies in OECD countries (Kiers et al. 2008). While such statistics may be
distorting in their lack of differentiation for what “dollars spent” are actually achieving, it is
notable that on average, developed countries spend USD $5.16 on science and technology for
every $100 of agricultural output, whereas developing countries invest only $0.57 (Pardey et al.
2007). Research investments are tied to capital-generating pathways, and the difference is
marked between profit opportunities in globalized food chains of export-oriented, processed-
commodity systems, and diversified production systems that provide for subsistence livelihoods
and regional markets. Zerbe suggests that the current trajectory of agricultural research is
serving to reinforce a “global two-tiered farming system in which large-scale commercial
producers benefit from the latest technologies while subsistence farmers and small-scale
commercial producers do not, generating greater inequality, particularly in developing countries”
(2015, 199).

The dominance of capital in plant breeding has also led to the neglect of orphaned, open-
pollinated varieties, while billions are invested into the four commodity crops that form the
foundation of the industrial food-feed-fuel agricultural complex (Zerbe 2015, 199). Capitalist
seed companies have focused down from 7,000 domesticated species to 150, and almost all of
their research funding (which also bears on the public sector) is on less than a dozen crops.
Nearly half of all global private research investment is in just one crop — corn (Mooney 2015;
120). Very little research into potential crop improvements has been done on the small-grain
cereals, tubers, and legumes that are cultivated by hundreds of millions of small-holder farmers
(Kiers et al. 2008). Declining diversity in research, crops, technologies, and forms that are of
benefit to reproduction of the commons are reflective of capital’s narrow interests and incapacity
to pursue broader social goods.

Production systems, especially of life’s most basic necessity, cannot be sustainable, democratic,
or equitable when subsumed by the logics of enclosure and competitive accumulation. Vast
monocrops engineered by way of privatized science to sustain heavier doses of herbicides are
merely an illustration of this, and the technologies that are being put to the service of capital
should not be reduced to the problem in and of itself. The technological pathways invested in
and pushed forward by capital are embedded not only in the drive to profit, but also in
intertwined deep cultural beliefs about human progress that have acquired a “status of
ontological inevitability” (Stirling 2009, 4). Beliefs and practices of the agricultural sciences
generate a prioritization of certain technological paradigms above others, and most typically a dismissal of indigenous, “local,” and other “non-modern” knowledges as having anything substantial to contribute (Vanloqueren and Baret 2009; IAASTD 2009). Such ideas are deeply racialized, classed, and gendered (Bever, Schultz and Subramaniam 2002; Sillitoe 2007; Fairhead and Leach 1997; Power 2006; Escobar 1995). While this thesis largely leaves to the side matters of competing worldviews and scientific paradigms, they are also central to considerations over the creation of new organisms and novel manipulations of life through biotechnology (Heller 2002; Jasanoff 2005). On critical matters of dominant agriscience paradigms and contested worldviews as they are intimately bound with long trajectories of agricultural development and restructuring of agrifood systems, readers might refer to correspondent literatures on agriscience (Kloppenburg 1991), productivism and developmentalism (Thompson and Scoones 2009), science and technology studies (Aronowitz 1988; Jasanoff 2005; Agrawal 1995), feminism (Wyer et al. 2013; Shiva 1989 and 2016; Haraway 1988; Harding 1996), and peasant and indigenous knowledge (Richards 1985; Chambers 2014; Smith 1999).

The technological innovations of society are made by commons, but captured by capital and authority in the most anti-democratic fashion, silencing open public deliberation over which technological and development pathways should be pursued. Pathways that privilege empire, military, and dominant capitals take priority, rather than technologies that diminish disease, hunger, and carbon pollution (Block 2008). This chapter moves finally to consider regulatory regimes and relations of imperial capital that privilege the agrochemical-seed-biotech industry and its technologies, as well as the circular power that the industry amasses to influence policy.

**Regulatory Regimes and Industry Influence**

As argued in Chapter Two, the trend of the past decades has been towards erosion of social protections limiting capital, alongside the strengthening of states’ facilitation of property rights, markets, and capital accumulation, with the U.S. playing the most active role in freeing capital movement around the world (Panitch and Gindin 2012; Wood 2003; Harvey 2005). U.S. commitment to the expansion and intensification of capitalist logic attends particularly and contradictorily to advancing the interests of specific, dominant American and transnational capitals, with the agrochemical-seed-biotech industry being a most notable priority and influence. The preferential treatment of particular capitals is entwined with export interests, entrenched economic growth pathways, collaborative relationships between dominant capitals, and capitalist influence over the state. Notably, policy agendas in the U.S. and elsewhere have increasingly centered on national economy competitiveness in the global market (Azmanova
2015). It is within such policy discourse and wider neoliberal shifts that the U.S. emerged as, and continues to be, the "epicenter of the 'biotechnology revolution,' both in terms of advances in the technology and its support for the industry" (Newell 2009, 15). As Peter Newell identifies, every U.S. government since Reagan has been willing to "intervene forcefully" on behalf of the biotechnology industry (ibid, 40), an industry that was colonized by already dominant agrochemical capitals with close relationships to the state.

As the technological possibilities of genetic manipulation began to actualize in the 1970s, scientists in the U.S. acknowledged potential dangers and imposed internal voluntary precautionary restrictions on certain kinds of research (Jasanoff 2005; Wright 1994). Early unease, however, was quickly eclipsed by commercial possibilities and scientists’ personal techno-excitement and antipathy to external regulation (Krimsky 2005). In 1975, the scientific elite in the field gathered in Asilomar, California to debate concerns and procedures for self-monitoring. From Asilomar, “the clarion call was that regulation would damage the vitality of American science” (Krimsky 2005, 313), with powerful narratives of scientific self-regulation and social responsibility coming to dominate (Jasanoff 2005). Some of the earliest widespread concerns amongst scientists were largely relaxed as experiments proceeded and technologies appeared more benign than initial cautious predictions (Eichenwald, Kolata and Petersen 2001). Within a few years, the number of scientists remaining critical of recombinant DNA (rDNA) experiments dropped, and those who were openly skeptical were increasingly marginalized by scientific peers (Krimsky 2005). Notably, molecular biologists were centered as those with the most to say about the technology’s potential risks, while less reductionist scientific paradigms (ecology especially) were largely negated (Jasanoff 2005).

The U.S. National Institute of Health (NIH) worked with scientists to construct guidelines for research, advancing a self-regulatory framework that would continue to occlude regulation (Wright 1994). As rDNA technology advanced mid-1970s, many regulatory congressional bills were introduced, with none passing due to heavy opposition by scientists and the emerging industry. “Science” was repeatedly invoked as a singular voice, in ways that foreclosed political debate (Jasanoff 2005). Rather than developing regulations, self-policing supervision of biotechnology continued under the NIH. By 1978, the Institute eased its guidelines; it then worked with private firms to skirt public apprehension by bringing them into a “voluntary compliance program” as had been developed for public scientists (Krimsky 1991; Wright 1994).

As scientists continued with various agricultural biotechnology experiments in the 1980s new controversies arose. Dedicated to demolishing regulations and ensuring the competitive
development of new commercial possibilities, the Reagan administration in 1986 issued a Coordinated Framework for the Regulation of Biotechnology. The framework solidified a government consensus that biotechnology products would not be treated any differently from similar products that did not involve gene manipulation and that no new laws would be passed (Krimsky 2005). Biotechnology was framed as "just another industrial process" that could be managed under the guidance of technical experts without opening unprecedented normative concerns for public deliberation (Jasanoff 2005, 52). The process of genetic engineering was rendered safe in law, with only the products in need of narrow risk assessment under already existing regulations. Jasanoff writes, “American neoliberalism treated biotechnology as just another stream of products” (2014, 15), reflecting cultural-historical traditions of seeing technology as an instrument of progress and citizens as consumers with an “ever-diversifying array of needs” (Jasanoff 2005, 276).

As many have commented, there is an obvious paradox in treating genetically engineered products as novel enough to secure patent rights, but simultaneously “substantially equivalent” to other products when it comes to environmental, health, safety, and other regulatory assessments and protections. Rather than a consistent rationale, U.S. regulation around biotechnology was designed around radically laissez-faire ideology. Within the vehemently anti-regulation shifts of the 1980s, wide political debate on biotechnology was essentially foreclosed within the halls of U.S. government, and a “strictly instrumental” conception of the state’s role in promoting science and technology was embraced (Jasanoff 2005, 63).

Much state activity related to biotechnology in the U.S. — from non-regulation of genetic engineering processes, to patent rights, to government funding of technology and private-public partnership — has unfolded within a dominant political discourse around national competitiveness in the global market. From the 1970s and 1980s, high technology sectors have come to occupy a privileged space in conceptualizations of national economic competitiveness, and are thus able to project their own interests as benefiting economies and society as a whole. From its inception, agricultural biotechnology was represented in the U.S. as a key component of the “knowledge economy,” and thus a major driver of growth, progress, and prosperity (Newell and Glover 2003). Much debate, including around the safety of commercializing food products, was framed around maintaining a competitive lead in biotechnology (Jasanoff 2005). Similar in other primary adopting countries, Dibden and colleagues comment on “the belief that Australia will be ‘left behind’ by competitors adopting this new technology unless it moves quickly to facilitate the development and commercialisation of GE crops” (2013, 60). Today, this rhetoric of national competitiveness appears particularly strong in admonishment of
governments that have taken a more precautionary approach to biotechnology. It is claimed, for example, that “the EU is falling behind new international competitors in agricultural innovation and this has implications for EU goals for science and innovation” (European Academies Science Advisory Council 2013, 2).

As a result of U.S. decisions that positioned it early on as the epicenter of rapid development and commercialization of agricultural biotechnology, the U.S. now has a major interest in ensuring that the rest of the world accepts its products. The U.S. is the world’s largest agricultural exporter. Around half of U.S. agricultural export value comes from soybeans, cotton, corn, wheat, and their processed products. Besides wheat, these crops are almost entirely genetically engineered (USDA 2014b). It is not only commodity growers and the biotechnology-seed industry that are invested in maintaining stability of production and markets, but also grain traders, the meat industry, food processors, retailers, banks, other powerful firms, as well as smaller businesses involved in various aspects of the agricultural economy.

Newell usefully terms “biohegemony” to refer to the “alignment of material, institutional and discursive power in a way which sustains a coalition of forces which benefit from the prevailing model of agricultural development” (2009, 38). These different factions of capital are sometimes put into direct conflict. Such was the case in 2014 when China, the largest importer of U.S. agricultural products, rejected boatloads of U.S. corn because it contained an unapproved Syngenta transgenic variety. The event prompted major lawsuits against Syngenta from both grain traders and farmers, who estimated collective losses of over USD $1 billion (Polansek 2014). However, as the conflict also illustrates, these powerful factions of capital have a collective interest in ensuring the stability and profitability of mutual markets, and in generally expanding intensified capitalist agricultural production and trade. Newell’s “biohegemony” alludes also to how smaller capitals and workers become entrenched in the maintenance of the dominant agrifood production system, and their immediate interests can be harmed by a disruption to the status quo.

Biohegemony cannot be understood separately from the power that particular capitals have on the state. Or as Samir Amin (2009b) puts it, the capitalism of oligopolies is inseparable from the political power of oligarchies. With the emergence of agricultural biotechnology, already dominant capitals not only seized, directed, and concentrated private gain around its commercial possibilities, but also shaped its regulatory regimes. Often this has been in direct competition with the interests of less powerful capitals (Charles 2001). Long before biotechnology, major conglomerate firms like Monsanto and DuPont had well-established
histories asserting their interests upon the state (Colby 1984). Newell and Glover write: “Far from being newcomers to the ‘game’ of regulation, therefore, these firms are strongly embedded in important policy networks within and outside government and are situated within established wider social networks which bring industry and government personnel together” (2003, 4). Most notable here because of their pioneering role, influence, and sustaining dominance in agrochemical-seed-biotech endeavors is Monsanto.

Monsanto avidly lobbied for the Reagan issued “coordinated framework,” largely against neo-conservative government officials and smaller firms that opposed any regulation at all. Monsanto executives were weary of battles with environmentalists through the 1970s, and carefully monitoring growing public controversy around biotechnology. They wanted to shape regulation that would assure the public of government oversight, but without actually impinging on their endeavors (Charles 2001). They desired no new laws or debate opened up by Congress, but instead a “regulatory fig leaf” (Hauter 2012, 246) of “predictable process” that would assure their products would be commercialized as long as they fulfilled a clear list of requirements (Charles 2001, 28). Against less powerful biotech firms and official Reagan doctrine, Monsanto got what it wanted in the coordinated framework, adopted “almost verbatim” from an industry proposal written by Michael Taylor (Hauter 2012, 247). Taylor epitomizes the closeness between Monsanto and every U.S. administration from Reagan through to Obama; he has fluidly moved back and forth between serving as a lawyer-lobbyist representing the firm, and writing the regulations for their products (Hauter 2012; Parfitt 2013).

Reagan’s coordinated framework left it to federal agencies to apply existing statutes to oversight of biotechnology products. As Monsanto’s products moved closer to commercialization and its investments grew, it worked closely with the Bush Senior White House to ensure reforms that would “speed up and simplify the process” of bringing products to market (Vice President Dan Quayle in Eichenwald, Kolata and Petersen 2001, n.p.). This time Monsanto’s wishes were in contest with smaller biotechnology companies like GE-tomato developer Calgene, whose chairman insisted that the American people wanted credible federal oversight, and that transparency and rigorous pre-market testing would be better for the development of the industry (Charles 2001, 134). Again, Monsanto had its way, with Michael Taylor back working within the Bush administration and top executives paying multiple visits to President Bush himself. Against the wishes of many of its scientists, the Food and Drug Administration (FDA) enshrined a policy of leaving it up to companies to conduct pre-market testing of food products and voluntarily provide information confirming their safety (Krimsky 2005). A New York Times piece summarizes what remains the case today:
The White House complied, working behind the scenes to help Monsanto—long a political power with deep connection in Washington—get the regulation that it wanted. It was an outcome that would be repeated again and again. If the company's strategy demanded regulations, rules favored by the industry were adopted. And when the company abruptly decided that it needed to throw off the regulations and speed its foods to market, the White House quickly ushered through an unusually generous policy of self-policing. (Eichenwald, Kolata and Petersen 2001, n.p.)

These stories early in the regulation of agricultural and food biotechnology are only a glimpse of the extensive relationships between firms of the “life sciences” oligopoly and the U.S. state. Between acting as U.S. Secretary of Defense under Presidents Ford and Bush, Donald Rumsfield ran the company producing NutraSweet that was purchased by Monsanto (Hauter 2012). In the following Clinton administration, after exerting extreme pressure on Europe to change its position on agricultural biotech in the late 1990s, trade negotiator Mickey Kantor moved on to Monsanto’s board (Charles 2001, 166; Eichenwald, Kolata and Petersen 2001). Monsanto executives have typically had “good friends” in the White House (Charles 2001, 166).

Detailed examination of the industry’s “revolving door” with U.S. government is beyond what can be reviewed here, but as an abbreviated illustration: DuPont spent USD $10.2 million in direct federal lobbying in 2013, with 11 of its 19 in-house lobbyists straight out of government; 19 of Monsanto’s 26 federal lobbyists have worked for government; in 2013, Dow spent more than DuPont on direct federal lobbying and boasted 19 of 33 revolving door lobbyists (SourceWatch 2015). These are only the most visible of company relationship to the U.S. state and expenditure aimed at determining policy regimes; the webs of elite social networks that bring capital and capital’s regulators together run significantly deeper and wider (Newell and Glover 2003).

While in privileged relationship to the U.S. state, the Big Six are transnational corporations and half are headquartered in other countries. Monsanto itself has made recent moves towards relocating to the United Kingdom as a way to reduce tax expenditures. Yet, the U.S. state consistently champions the industry’s interests globally, working to actively open markets, promote its technologies, and weaken regulations that constrain its profits and consolidations. As has been charted, the relationship between the U.S. state’s imperial maneuverings and the agrochemical-seed-biotech oligopoly requires understanding the intertwined operations of the U.S. as a “capitalist empire” devoted to deepening and expanding capitalist logic and
compulsions generally (Panitch and Gindin 2012); America’s own investments in particular sectors and pathways of capitalist growth that are embedded in increasingly global markets; the ways in which dominant capitals align around mutually-beneficial social orders; and the concentration of political power with wealth as “ruling classes” capture the state (Robinson and Harris 2000). As Foster, McChesney and Jonna argue, considering the operation of “monopoly power” today is “vital to understanding the real world of politics and governance, and to any meaningful analysis of imperialism” (2011, n.p.). While never entirely monolithic, unidirectional, or uncontested, there remains a clearly dominant “historic bloc” around the industry’s interests both within the U.S. and as it is exported globally (Andrée 2007; Schnurr 2013).

When the Wikileaks release of U.S. State Department cables exploded in 2010, little coverage was paid to the nearly one thousand cables between 2005 and 2009 that revealed the extent to which the U.S. collaborates with the industry to influence other governments’ policies around agricultural biotechnology. According to an analysis of the cables by the advocacy group Food and Water Watch, every U.S. diplomatic post worldwide is instructed to “pursue an active biotech agenda” (2013, 3). Tactics range from drafting GE crop approval legislation for African countries, to sponsoring “seeing is believing” excursions of journalists and diplomats to the U.S., to distributing curriculum in high school classrooms of foreign countries (FWW 2013; Schnurr 2013). Strategies and goals are often designed and implemented in partnership with Monsanto, DuPont, Syngenta, and other agribusiness corporations. The U.S. government reproduces the industry’s highly contested and sometimes outright false narratives, including that GMOs reduce pesticide use, increase yields, benefit the world’s poorest farmers, are important to mitigating the impacts of climate change, and that they are necessary to feed the world. The cables divulged how the U.S. has directly intervened in other countries on Monsanto’s behalf to negotiate seed royalty settlements, accelerate approval of their crops, and extend patent lengths (FWW 2013).

None of these revelations were particularly surprising, or entirely unknown. The U.S. has long lobbied aggressively to weaken other governments’ regulatory oversight of GE crops and restrictions on imports, and often stands directly behind industry lobbyists operating in different countries on a range of issues (Newell 2008 and 2009). When, for example, Egypt demanded in 1998 that GMO food imported from the U.S. be labelled, the U.S. responded by threatening to ban all trade between the two countries in soy and maize (Newell and Glover 2003). The U.S. also forcefully uses international trade rules to attack laws, including bringing a case before the WTO against the European Union’s stance on GE crops. At other times the U.S. has used the mere threat of bringing a WTO case in order to force less powerful countries to conform to
desired biotech policy. Trade rules at both the level of the WTO and bilateral and multilateral treaties are increasingly being used in efforts to “harmonize” risk assessment procedures and other GMO related laws as desired by the industry, the U.S. and its allies (including especially Australia, Canada, and Argentina) (Newell and Glover 2003; Hansen-Kuhn 2016).

The use of binding trade rules to advance industry interests is also being pursued in the realm of agrochemicals. According to a recent report by the Center for International Environmental Law, the U.S. allows use of 82 pesticides that are banned in the European Union. Negotiations over the Transatlantic Trade and Investment Partnership (TTIP) indicate a push for “regulatory convergence” that would weaken E.U. pesticide regulation, allow higher levels of pesticides on foods imported from the U.S., and block public access to “confidential business information” about pesticide ingredients and potential dangers (Smith, Azoulay and Tuncak 2015).

The agrochemical-seed-biotech industry’s role in international and local policy-making is extensive and beyond what can be covered in the limitations of this thesis. It weaves through a vast scope of regulatory domains, from IPRs, environmental health, public university policies, trade, food safety, and much more. As this chapter has demonstrated, the rise of the agrochemical-seed-biotech oligopoly has unfolded in part through the influence of highly concentrated private power on states and regulatory regimes. The emergence of the oligopoly is premised upon gene-plant commons enclosures, the deepening of capitalist processes in global agrifood production, social arrangements that facilitate the consolidation of capital, public science and technology put in the service of capital, policy regimes that privilege the oligopoly’s products and a close relationship with U.S. regulators. With this chapter’s outline of the global development and power of the oligopoly, this thesis returns to contemporary Hawai’i, and the establishment of the industry in the tracts of plantation sugar.
CHAPTER FIVE: GMO GROUND ZERO

As the primary site of development of all GE parent corn seed, and with over 3,300 GMO field tests since the 1990s, Hawai‘i is placed at the epicenter of the agrochemical-seed-biotech oligopoly’s global chains of production. The popular press, economic reports, and legal and state documents conclude simply that the industry operates in the islands because of good weather. While not untrue — Hawai‘i’s year-round growing season is certainly favorable for speeding up the development of herbicide-tolerant seeds and testing other agricultural technologies — this smooth narration obscures fundamental socio-political and historical context. Chapter Three outlined Hawai‘i’s plantation colonial history and Chapter Four traced global socio-political conditions that give rise to the agrochemical-seed-biotech oligopoly. This conjuncture of the thesis builds on the previous two chapters to contribute a critical reading of why most corn seed sold globally can be traced back to the most isolated islands in the world. It is asserted that the conditions of possibility for the agrochemical industry’s occupation of Hawai‘i are not merely a matter of sunshine and “natural competitive advantage,” but socially and historically contingent. Against dominant narratives that insinuate naturalness and inevitability, what is elucidated in this analysis are the arrangements that make Hawai‘i’s soils ideal for growing patented seeds engineered for pesticide-resistance.

This chapter begins by overviewing GMO field testing and parent corn seed production in Hawai‘i today, then describes health and environmental impacts especially as related to intensive pesticide use. It is then shown that Hawai‘i’s place “within,” as a colony of, the United States, but isolated and sub-tropical, is core to agrochemical-seed-biotech companies’ decisions to locate in the islands. Next, local conditions facilitating Hawai‘i as an epicenter of GE seed development are detailed, including examining the local history of the seed industry as it unfolded from within a neoliberal moment of plantation closures and efforts to “diversify” the now dominant tourism monoeconomy. Local arrangements of land and water use, tax policy, public university support, and health and environmental policy are discussed. Finally, this chapter shows the ways in which local power webs and Hawai‘i’s ethnicized class structure facilitate today’s plantations, and the accumulating burdens to plantation communities and workers. Monsanto and gang’s operations have established in the tracts of Hawai‘i’s plantation oligarchy past, directly inheriting infrastructures, institutions, and ideas. It is argued that truly alternative possibilities require contesting core conditions that continue to facilitate plantations, monoeconomies, oligarchies, and oligopolies. This concluding argument closes Part II of this
thesis situating agrochemical occupations and informs analysis of the contest over the possible in Part III.

**Agrochemical Plantations**

Hawai‘i has long been a place of exploit for extraction and generation of wealth by foreign interests, as well as a hub for U.S. imperial maneuverings (Chapter Three). Today, capital and empire take shape around a dominant vertically integrated transnational corporate tourism economy; U.S. military occupation of extensive land mass, airspace and sea; and agriculture at the periphery (Ramones 2014). At the edges of this economy and in the tracts of abandoned sugar and pineapple fields, the agrochemical-seed-biotechnology industry has become the dominant agribusiness interest in the islands.

The seed industry first arrived in Hawai‘i in the 1960s, operating on the fringes of plantation lands and primarily involved in hybrid corn endeavors (Brewbaker 2003). James Brewbaker, a plant breeder arriving at the University of Hawai‘i’s College of Tropical Agriculture and Human Resources (CTAHR) in 1961, demonstrated the ability to grow corn in the islands year-round with less weather challenges than the Midwest, Puerto Rico, and South Florida. Brewbaker encouraged “seedmen” to come to the islands, where they gained small leases but were shut out from prime agricultural lands dominated by sugar until the 1980s (Voosen 2011). During the 1990s “merger mania” (Hauter 2012), seed companies operating in Hawai‘i were either acquired by chemical-pharmaceutical corporations or went out of business, including: Corn States (Monsanto), Illinois Foundation Seeds (Dow), Trojan Seed Co. (Pfizer to Monsanto), Funk’s G (Ciba to Cargill to Monsanto), Northrup-King (Syngenta), and Pioneer Hi-Bred (DuPont). At the same moment, some of the earliest agricultural biotechnology field trials took place in Hawai‘i. As agricultural biotechnology, chemicals, and seeds became a single consolidated global industry already with tentacles in Hawai‘i, space was being made by vacating sugar and pineapple for expansion onto larger tracts of land equipped with water infrastructure and near communities left jobless by closing plantations.

Hawai‘i quickly became an epicenter for the industry’s GE parent seed production and its crop research. In 1969, seed companies were located on around 41 acres on Kaua‘i, 120 on Maui, and 430 on Molokai. Today, Dow, DuPont, Monsanto, Syngenta, and BASF occupy an estimated 24,700 acres on the islands of Kaua‘i, O‘ahu, Molokai, and Maui, or around 72 percent of cultivated farmland not in sugar or pineapple (Freese, Lukens and Anjomshoaa 2015). These numbers are imprecise due to limited publicly available data on private land leases and public
land subleases. The industry carefully guards information concerning the lands they occupy. Much land they operate on is left fallow; in 2015, for example, the companies reportedly cropped 1,841 acres out of the approximate 13,500 that they lease on the island of Kaua‘i (JFFG Draft 2016, 7).

In step with the rapid commercialization of GE crops, the estimated “total value” of Hawai‘i’s seed industry has grown at an average annual rate of 18.5 percent since 2000 (Loudat and Kasturi 2013). In 1988, seed crops accounted for 1.5 percent of Hawai‘i’s crop revenue; by 2010 they accounted for over 40 percent according to USDA estimates (USDA National Agricultural Statistic Service, ongoing). As the State of Hawai‘i’s largest agricultural commodity, around 8 million pounds of corn seed were exported in 2013-2014 (ibid).

Nearly every genetically engineered corn seed grown globally has touched Hawai‘i in its development (Pollack 2013). The process of inserting traits into plants begins in laboratories on the continental United States. Plants are then transferred to Hawai‘i, where traits are bred into seed varieties over several generations, going through many planting cycles over more than three years (Schrager 2014). Three to four crops can be grown per year in Hawai‘i, dramatically accelerating the pace of production. These breeding productions are incredibly important to the industry’s profits and a failure that delays the introduction of a new line can result in the loss of millions of dollars (ibid). Some amount of parent seed increase and grow out also occurs in Hawai‘i. Once developed, parent seed is shipped elsewhere for mass multiplication. A pamphlet from Pioneer DuPont indicates that their seed stock from Hawai‘i is multiplied in Puerto Rico, Argentina, and elsewhere, before being distributed to farmers in North and South America for planting. As one Syngenta Kaua‘i spokesperson told the local newspaper, “these seeds travel all over the Mainland, and sometimes South America and Europe before the farmer ever gets it” (Lyte 2015, n.p.).

Hawai‘i hosts more experimental GE crop field tests than anywhere else in the United States, with over 3,300 permits issued for field tests since the early 1990s (ISB 2015). In 2014, 164 different field tests were conducted at 1,141 sites (ISB 2015). Over 90 percent of plants tested are corn and soy, with herbicide-resistance by far the most frequently tested trait (Freese, Lukens and Anjomshoaa 2015; ISB 2015). Dow, DuPont, Monsanto, Syngenta, and BASF conducted 97 percent of field tests over the past five years, while public sector institutions were responsible for 1 percent (ibid). Hawai‘i’s subjection to the highest number of experimental GE crop field tests in the U.S. is compounded by its relatively small land mass, thus it has a much higher density of field tests. The Center for Food Safety (CFS) calculates that Hawai‘i has had
9.2 times more GE crop field releases per unit land area than Illinois, suggesting that more people live in closer proximity to such sites (Freese, Lukens and Anjomshoaa 2015, 10).

According to a report funded by the industry trade group Hawai‘i Crop Improvement Association, the seed industry employs nearly 1,400 people and 43 percent of these jobs are part-time (Loudat and Kasturi 2009 and 2013). This equates to around 11 percent of the state’s recorded 12,500 hired farmworkers, and 0.23 percent of all jobs (USDA Census 2012; Freese, Lukens and Anjomshoaa 2015). While a small figure, these jobs are often concentrated in communities that lack other employment options, such as on the island of Molokai, where Monsanto and Dow are the largest employers and provide an estimated 11 percent of jobs (Johnson 2014).

The estimated value of the seed industry in Hawai‘i was USD $159 million for 2013-2014, a 14 percent decline from the previous year attributed to “operating and organizational changes” (USDA 2015, 1). Value rates are estimates by the USDA because outshipments of seeds from Hawai‘i are not sold as regular commodities. The USDA does an annual survey of companies, asking them about their operation budgets, crop acreage, and the value of the seed they shipped. Based on this company reported data, they generate estimates of the value of the industry in Hawai‘i (Kathy King, USDA, personal communication). From 2009-2012 the industry was at its highest value and seed exports reached a maximum of over 12 million pounds.

Agriculture is considered by the state to be the third largest economy in the islands, and to indirectly generate USD $2.9 billion annually while creating a total of 42,000 direct and indirect jobs, though the mechanisms for these calculations are not clear (HDOA 2013).

While occupying far less land and employing far fewer people than plantation sugar and pineapple, the agrochemical companies have stepped into the role of the reigning capitalist agribusiness interest in the islands. They are both celebrated as the “saviors” of agriculture and despised as the “new barons” (Voosen 2011, n.p.). Schrager argues that, in terms of firms’ economic investments, Hawai‘i’s seed corn industry is the largest in the world (2014).

**Health and Environmental Impacts**

Intense pesticide use is associated with seed development and experimental GE field trials. According to emails sent by Steve Savage, a former manager of research at DuPont, evaluating and commercializing new corn lines requires several generations of increase to get the necessary quantities of seed. Hawai‘i’s year-round growing season allows companies to speed up this process, but because there is no winter set-back in pest populations, companies use
large amounts of pesticides to protect their lucrative seeds. James Brewbaker explains the high application of pesticides:

Unique pesticide regimes are imposed by the seed industry, reflecting the value and the high quality expected of germplasm produced by the seed industry. Seeds are treated before planting, and preemergence insecticide is usually incorporated at the time of planting for control of leafhoppers and thrips. Subsequent insecticide and fungicide treatments are applied on a 5–7 day regime, and scouting for any new outbreaks is rigorous throughout the growing season. One result of this insecticide regime is that many predators and parasites of corn pests are also eliminated or reduced in population. (Brewbaker 2003, 69)

The inbred varieties that are grown for breeding purposes in Hawai‘i are also more vulnerable to pests and disease. Moreover, with herbicide-resistance being the most frequently tested trait in Hawai‘i — 82 percent over the past two years and 68 percent over the past five years — the testing of combinations of agrochemicals on crops is central to experimental operations. Multiple permits were issued in Hawai‘i for testing the industry’s most recent controversial 2,4-D (Dow) and dicamba (Monsanto) resistant crops (Freese, Lukens and Anjomshoaa 2015). Though much of the acreage that the agrochemical companies occupy lies fallow, fields are typically still sprayed with pesticides to keep insect populations down and weeds from growing. According to tropical plant and soil scientist Hector Valenzuela, “To grow either seed crops or test crops, you need soil that’s essentially sterile” (Pala 2015).

Sales records obtained through a Freedom of Information request to the State Department of Agriculture indicate that on the island of Kaua‘i, 22 different restricted-use pesticides (RUP), comprising over 20,000 pounds of active ingredient, were purchased annually from 2010 to 2012 by Syngenta, DuPont, Dow, BASF, and Kaua‘i Coffee (Kaua‘i Ordinance 960; Freese, Lukens and Anjomshoaa 2015). Restricted-use pesticides are those deemed by the Environmental Protection Agency to need a special permit and protective equipment for application due to their known harmful impacts on human health and the environment (40 C.F.R. §152.170). Records from 2014 indicate that application volume was higher than sales volume, suggesting that companies also use inventory from prior years (JFFG Draft 2016, 23). Voluntary reporting in the Kaua‘i Good Neighbor Program indicates that 36,240 pounds of total formulation RUP were used by agrochemical companies in the 20-month period from December 2013-July 2015. Based on this company reported data, the Hawai‘i Center for Food Safety estimates that Kaua‘i’s seed corn fields receive 17 times more restricted-use insecticides than corn grown in
the continental United States (Freese, Lukens and Anjomshoaa 2015). Other comparative estimates are lower; all estimates are imprecise given incomplete data, especially with respect to acreage use (JFFG Draft 2016, 26).

From a class-action lawsuit on Kaua‘i, it was divulged that when general-use pesticides (GUP) are accounted for, at least 90 pesticide formulations with 63 different active ingredients were used by DuPont between 2007-2012, and that pesticides were applied 250-300 days per year, at an average of 10-16 applications per day (Jervis and Smith 2013). The Kaua‘i Good Neighbor Program indicates that other companies use greater volumes of pesticides than DuPont. The volume of the approximately 75 general-use pesticides used by agrochemical companies is unknown to the public (JFFG Draft 2016). Including general-use pesticides, the Center for Food Safety estimates that total pesticide use is likely four times higher than recorded RUP use (Freese, Lukens and Anjomshoaa 2015). General-use pesticides are those that can be purchased and used without a permit, including 2,4-D, neonicotinoids, dicamba, acetochlor, and glyphosate. While less regulated, such GUPs have known serious health and environmental impacts. For example, neonicotinoids are highly toxic to bees and other GUPs are carcinogens and endocrine disrupters.

In the first year (2014) of voluntary restricted-use pesticide reporting on the island of Kaua‘i, the amounts of RUPs used were: S-Metolachlor (3,895 lb), Atrazine (1,876 lb), Chlorpyrifos (1,686 lb), Paraquat-dichloride (475 lbs), Alachlor (466 lb), Methomyl (320 lb), Mesotrione (206 lb), Permethrin (183 lb), Lambda-Cyhalothrin (113 lb), Chlorantraniliprole (85 lb), Zeta-cypermethrin (28.3 lb), Estenvalerate (28 lb), Teflurin (25 lb), S-Cyano Methyl (22 lb), Beta-cyfluthrin (13 lb) and Cyfluthrin (2 lb) (Kaua‘i Good Neighbor Program). If companies grew on 1,841 acres, this equates to a total 9,423 lb/1,841 acres = 5.12 lb per acre of active ingredient, exclusive of surfactants and adjuvants which can also be harmful to human health and the environment. However, the spread of this use likely varies immensely, with higher usage on some acres and lower use on others. Looking at the data for each company individually, approximate higher amounts are used by Syngenta (4,795 lb/(.1*3,000 acres)=15.98 lb per acre); followed by Dow (3,157/(.1*4,500 acres)=7 lb per acre); DuPont Pioneer (1,252 lb/(.1*4,000 acres)=3.13 lb per acre); and with BASF using the least amount (218 lb/(.1*1,000 acres)=2.18 lb per acre. These are based on the approximate rate of cropping 10 percent of leased acres, as publicly stated by companies.

At least 15 of the 22 restricted-use pesticides used on Kaua‘i have been linked to cancer by the American Cancer Society and American Academy of Pediatrics (Skolnick 2013). Of the seven
most commonly used RUPs, the Environmental Protection Agency suspects six of being endocrine disruptors. Between them, the seven have been linked to “neurological and brain problems and damage to the lungs, heart, kidneys, adrenal glands, central nervous system, muscles, spleen and liver” (Koberstein 2014, n.p.). Even at very low exposure levels, the three most widely used RUPs have all been linked to serious health impacts. There is growing scientific evidence that chronic exposure to low-level toxicants can accumulate over time, though U.S. law continues to focus on acute exposure.

Pesticides are often “stacked,” or mixed into cocktails with more harmful and almost entirely untested and unregulated synergistic effects (Vallianatos 2014). This usage of combinations of an “ever-changing kaleidoscope of pesticides,” as described by Sandra Steingraber, is of particular concern (2016, 2). For example, a recent review of the scientific literature indicated that the cumulative effects of individual non-carcinogenic chemicals “acting on different pathways, and a variety of related systems, organs, tissues and cells could plausibly conspire to produce carcinogenic synergies” (Goodson et al. 2015, S258).

Many chemical intensive seed and research operations are located upwind and adjacent to residential areas, including schools, homes, and hospitals, as well as shorelines and waterways (Images 5.3 and 5.4). Moreover, according to Valenzuela, “The mosaic style of planting, with small plots of corn surrounded by expansive bare fields, means that the risks and actual levels of pesticide drift, runoff, and dust pollution are considerably greater than the levels observed under normal commercial farms in Hawaii” (2016, 6; Image 5.5). Numerous local doctors have submitted official statements expressing concern that they may be witnessing effects of pesticide exposure in communities living near fields, potentially including higher than average rates of rare birth defects, miscarriages, unusual cancers, respiratory and hormonal problems, and recurring dermatitis and nose-bleeds (public testimony, Kaua’i Bill 2491; Pala 2015). The following are excerpts from written and oral testimonies submitted by practicing doctors from the Westside of Kaua’i during debates over Kaua’i County’s pesticide disclosure Bill 2491:

Some of our individual and collective concerns: We have observed a higher than normal occurrence of birth defects and miscarriages. High rates of very severe gout in healthy populations. Rare types of cancers in a higher than expected incidence for our small population of patients. Almost daily reports of respiratory symptoms in patients that have no history of these respiratory illnesses. Many of these respiratory symptoms are not
responding to the pharmacological interventions typically prescribed. Hormonal changes including excessive facial and body hair on women and higher levels of infertility. Reoccurring nose bleeds in children. Reports of a ‘metallic taste’ in their mouths and recurring dermatitis. (Kapono Chong-Hansen MD, Carla Nelson MC, Nernard Riola MD, Rick Goding MD, Surcchat Chatkupt MD, Margie Maupin NP)

Of particular concern is the incidence of serious cardiac malformations; particularly those that result from early embryogenesis defects that have occurred in our population the last three years. We have had 5 major cardiac defects that have required early extensive surgical repair in San Diego the last 3 years: 2 cases of Transposition of the Great Vessels, 1 Hypoplastic left heart, 1 Hypoplastic Right heart with heterotaxy and 1 severe pulmonary stenosis. The transposition cases and hypoplasia cases are considered defects that occur in early first trimester. While cardiac birth defects are the most common birth defects these particular types of lesions are rare. Recent CDC statistics puts transposition at 1/3,300 births, hypoplastic left heart at 1/4,344 births and hypoplastic right at 1/17,000 births. In the last 3 years we have had about 750 deliveries; this gives us an incidence of 53/10,000 births for these 4 defects. National US data shows an incidence of 5.5/10,000 births, so we have 10 times the national rate.” (emphasis added, Jim Raelson MD and Surcchat Chatkupt MD)

I have been told in no uncertain terms by the head of the Tumor Board at Wilcox that there is a significantly higher incidence of leukemia and multiple blood disorders that are considered "cancers" by some hematologists, but not tracked by the registry on the West side. I have also been informed by a practicing oncologist that the same situation exists for incidents of lymphoma on the island. The rate of serious birth defects on the West side is indisputably higher (10x higher in the case of some serious cardiac defects requiring surgery) than the national average. These have trended significantly higher in the last 5 years. Again, these data are only a starting point for a true study. They require significant investigation to help uncover the causes, and a longer timeline to establish a trend. (Rick Goding MD)

In the town of Waimea on the Westside of Kaua‘i, residents report 37 cancer cases in a community of around 800 — if accurate, this would equate to a cancer rate over ten times the Hawai‘i State average (Skolnick 2013). The State Department of Health (DOH) indicated in a
press release that islandwide Kaua‘i cancer rates are no higher than the rest of the state, which has been cited repeatedly to claim that there is decidedly no problem. However, the report did not look at a breakdown by census track, or in other words, specifically at communities living near fields. Several local doctors expressed discontent over the state’s assertion: “…the DOH statement is not definitive and does not resolve this issue in the minds of the physicians on this island” (Westside doctor, email communication, 2013). One local MD wrote in an unpublished letter to the newspaper: “there is a serious disconnect between the clinical observations of our island physicians and the Tumor Registry numbers reported…The blanket press release from DOH, seems to end the questions, when in fact, the questions need more consideration” (personal communication).

Concerns of Westside physicians over high rates of rare birth defects remain unreconciled with official state records from 2010-2014. Moreover, different divisions of the Hawai‘i Department of Health have supplied conflicting data to the public. Birth defect data for 2005-2010 was not kept due to budget cutbacks. Medical records at the Westside hospital are paper-based, which may further contribute to missing data (JFFG Draft 2016, 51).

On the Westside of Kaua‘i, on at least three occasions in 2006 and 2008 school children at Waimea Canyon Middle School were taken to the hospital with symptoms of vomiting, nosebleeds, headaches, and fainting after smelling noxious odors. Official records indicate 14, 60, and 10 students were sickened in the events (JFFG Draft Appendix 2, 140-145). Numerous other incidents were reported to the Department of Agriculture at the school from 2006-2008. The State Department of Agriculture suggested that causes were inconclusive and focused investigation most heavily on the commonly occurring plant stinkweed (Cleome gynandra), despite the fact that stinkweed odors have never been known to cause the severe symptoms suffered by students and teachers (Li, Wang and Boesh 2013). Air sampling for pesticides was too delayed to draw firm conclusions. However, there is little doubt amongst teachers and residents that these were acute poisonings resulting from pesticide drift by a neighboring Syngenta field, and that these major incidents were not the only occasions in which students and teachers were impacted (Skolnick 2013; Snowden 2013).

Milton Clark, former Senior Health and Science Advisor to the EPA, states that there is “no quantitative or literature evidence” to support the theory that stinkweed was a culprit in the school poisonings, and calls it an “unusual emphasis” (JFFG Draft Appendix 2, 146). He concludes that “while there is no definitive cause for the heath symptoms reported in Waimea, they were far more likely related to pesticide exposures than from exposure to stinkweed.
organics, other plants or their decomposition products” (ibid, 147). Following negative press and
the first ever Temporary Restraining Order filed by the Hawai‘i State Teachers Association,
Syngenta ceased planting the adjacent field, and nothing similar has occurred since (Gregg
2008; Perry 2013). The Maluhia Group, formed by teachers after the first acute poisoning
episode, claims that five teachers that were pregnant during the time the field was being
sprayed had babies with significant birth defects.

While egregiously delayed, air sampling at Waimea Canyon School consistently detected
chlorpyrifos and other pesticides used by seed companies (Li, Wang and Boesh 2013). Though
detected at legally permissible levels, major recent studies suggest that low-level exposure to
organophosphate insecticides like chlorpyrifos can have profoundly negative impacts on
children’s neurological development, especially in utero (Eskenazi et al. 2007; Bouchard et al.
2010; Bouchard et al. 2011; Engel et al. 2011; Roberts et al. 2012). A recent long-term study by
Shelton et al. (2014) found a 60 percent increased risk of autism spectrum disorder in children
of mothers who lived within a mile of fields sprayed with organophosphates during their
pregnancies. Chlorpyrifos is known to volatilize and drift for days or months after application;
Hawai‘i’s warm climate and windy conditions exacerbate vapor drift. Given the dangers of
chronic low level exposure, its ability to drift, and the large amounts of chlorpyrifos used on
Kaua‘i, many believe it to be the greatest threat of agrochemical operations to human health.
Single incidents of acute, high-dose exposure to pesticides like chlorpyrifos can also have long-
term health impacts. In January 2016, at least ten contract migrant field workers were sent to
the hospital after being exposed to chlorpyrifos at a Syngenta operation (JFFG Draft 2016, 86).

The human health impact of dust is also of concern. A class-action lawsuit brought by over 150
residents in Waimea alleges that pesticide-laden, “excessive fugitive dust” from DuPont Pioneer
operations upwind of the town has blown into their homes on an almost daily basis for more
than ten years (Jervis and Smith 2011, 5; Image 5.5). As stated by the lawsuit:

Fugitive dust is also a recognized pollutant that presents known risks for human health
from both short- and long-term exposures. Pioneer’s fugitive dust [also] exacerbates the
risks associated with Pioneer’s use of inherently dangerous pesticides because fugitive
dust acts as a transport mechanism to carry pesticides into Waimea. (ibid, 7)

There have been no epidemiological studies regarding concerns over potential human health
impacts of pesticide use on communities living near fields. There is no mandatory disclosure of
when, where, and what types of pesticides are used, making the extent of resident exposure
unknown and complicating health and environmental study. Physicians’ abilities to treat patients is also severely undermined by lack of knowledge about their exposures. Unlike many other states, Hawai‘i does not have a pesticide poisoning surveillance program.

Communities that face high exposure to harmful chemicals and pesticides also face what Sandra Steingraber calls the “miasma of uncertainty” (1997, 71). Joni Seager points out that:

> Environmental investigation of all kinds is dogged by ‘scientific uncertainty’ — the fact that it is almost impossible to ‘prove’ direct environmental causes and effects…in the environmental domain, there is almost always room for (scientific) doubt, and the possibility of contravening evidence is always present” (2003, 964).

In the “game” of “scientific proof,” the terms are stacked against those who “feel the effects of environmental derangement first, longest, and most acutely” (Seager 2003, 962-963), especially given the disproportionate representation of powerful interests in official science (Narayan and Scandrett 2014). That some amount of scientific uncertainty is a fact is perhaps best understood by polluting industries, who have a long and well documented history of manipulating doubt in cases ranging from DDT and lead poisoning to tobacco and climate change (Oreskes and Conway 2010; Markowitz and Rosner 2003). Seager accuses, “scientific uncertainty serves as a refuge for scoundrels of all kinds…The assurance that there will always be scientific uncertainty has long given solace to polluters and has served as a barrier to enactment of remediate public policy and legislation” (2003, 964).

Pesticide impacts on soil health, marine and freshwater ecosystems, bees, biodiversity, endangered and other species, is also potentially significant, though again, no comprehensive local studies have been conducted. Hawai‘i’s unique ecology and geography present particular environmental concerns. Polluted runoff is the greatest threat to Hawai‘i’s surface and ground water quality, with the islands’ steep geography, intense rainfall, flashy streams, and small drainage basins all contributing to rapid dispersal of contaminants on land into waterways (Oki 2003; DOH 2016). Mudslides along coastal agricultural fields due to unpermitted soil grubbing by companies impact aquatic ecosystems and commercial and subsistence fishing (Van Voorhis 2011). Many of the pesticides used by agrochemical operations are known to persist in the environment and to contaminate water sources. A 2014 Department of Health Stream Sampling Study tested four locations on drainage canals downstream of agrochemical operations, concluding:
Detections at these sites were compared to reported restricted use pesticide (RUP) application under Kaua‘i’s Good Neighbor program. Five restricted use pesticides were detected at one or more of these sites, and three, atrazine, metolachlor and chlorpyrifos were reported to have been used by seed crop operators a few weeks prior to sampling. (DOH 2014, 21-22)

Local environmental scientist Carl Berg notes that, “since many of the pesticides are known hormone disrupters, the effects on larval and juvenile development of fish could have serious implications to Hawaiian stream species and nearshore fisheries” (2016, 2).

Dozens of pesticides used by agrochemical companies are known to be toxic to bees and pollinators (Valenzuela 2016). In 2000, a sudden bee die-off on the Westside of Kaua‘i was attributed by a consultant’s report to insecticide use by agrochemical companies (JFFG draft 2016, 49). In 2015, a high school student science project tested the amount of glyphosate in honey from domesticated and wild beehives around the island, concluding that hives on the Westside were more frequently contaminated. An official organic farm certifier reports having to deny organic certification to beekeepers due to pesticide contamination from surrounding agrochemical company fields. There is no other known data on bees. In regards to other wildlife, anecdotal reports of rare occurrences of disease are frequent, especially amongst hunters and fishers. In one example, Kaua‘i’s state sponsored Joint Fact Finding Group states: “Several local residents on the Westside have reported what they believe may be an unusual number of dead or sick owls but no samples of blood or tissues for pesticide residues appear to have been taken to date” (JFFG Draft 2016, 48).

In addition to pesticides themselves, crops engineered to produce their own insecticides (Plant Incorporated Protectants—PIPs) carry potential risks to a range of non-target species, as well as to ecosystem dynamics as a whole (USDA 2016a; Icoz and Stotzky 2008). In regards to GMO field trials and crops generally, the spread of engineered traits to wild relatives through gene flow is a widely acknowledged problem. In one Hawai‘i example, the Environmental Protection Agency has recognized that Bt cotton has the potential to crossbreed with an endemic variety of cotton (Gibson 2014). The islands are considered both a biodiversity hotspot and the “endangered species capital of the world,” with 437 species listed as either threatened or endangered (Scheuer and Clark 2001; Freese, Lukens and Anjomshoaa 2015). Cross-pollination with other agricultural crops is likewise well documented, with Hawai‘i’s papaya industry providing a direct example.
Spread of genetic traits to wild and cultivated relative species is of particular concern in regards to outdoor field testing of crops engineered to produce pharmaceutical products. In a 2006 lawsuit brought by Earthjustice against the USDA, it was revealed that companies were conducting open-air field trials of corn and sugarcane containing hormones, HIV and other vaccines, cancer-fighting agents, and other proteins to treat human illness (CFS v Johanns 2006). There have been occasions of such pharmaceutical crops escaping field trials and being grown amid commercial crops intended for human consumption (Achitoff, Kimbrell and Wu 2015). While biopharmaceutical testing is no longer being conducted in Hawai‘i, the potential of the industry’s next experimental products combined with lack of public disclosure leaves residents uneasy and speculating about unknown risks.


Image 5.3: Pioneer DuPont fields upwind of Waimea river, homes, and taro fields. Image credit: Samuel Shaw.
Image 5.4: Kekaha homes and four elementary schools near agrochemical-seed-biotech fields, West Kaua‘i. Photo credit: Sol Kahn.

Image 5.5: Dust generated by agrochemical-seed-biotech fields, West Kaua‘i. Photo credit: Samuel Shaw.
United States Regulatory Regimes

Hawai‘i’s place both “within” and outside of the U.S. is critical to agrochemical-seed-biotech companies’ decisions to locate in the islands. Unlike Hawai‘i, the continental United States does not have a year-round growing season. Furthermore, Hawai‘i is isolated from other agriculture that could contaminate or be contaminated by experimental operations. As explained by Brewbaker: “If you’re in the middle of Iowa and studying a new [biotech crop], you’ve got to be in absolute isolation. Here it is concentrated in a way so that you’d think about all of [their acres are] made available for genetically modified crops” (Voosen 2011, n.p.). This isolation also means that lucrative corn seed is less exposed to pests and disease that plague monocrop production in the Corn Belt. If a virus like corn rust is spotted, production in the islands can shift to another area that has not been intensively farmed in corn — a strategy that is not available in the Midwest United States (Schrager 2014). While geographically isolated and subtropical, the islands at the same time are subjected to U.S. regulatory regimes. It is this “inside” and “outside” relationship that also makes the island colony of Puerto Rico a main site of GE crop field trials, with the second highest number of test sites behind Hawai‘i (ISB 2015).

Though the industry operates globally and is headquartered in multiple countries, conducting field trials and developing seeds in U.S. territory provides strong state support and fluidity of production. As the U.S. is the primary adopter and promoter of agricultural biotechnology and provides the largest GE seed market, operating within its territory enables easy transfer through phases of seed development and distribution, as well as between research and commercialization. As discussed in Chapter Two, strong states are vital to securing property rights, capitalist markets, administrative order, and bureaucracy. In the case of the agrochemical-seed-biotech industry, these are most remarkable in the strict patent, “trade secret,” and other property protections provided by the American state, as well as the subsidized administration of steady and orderly movement of industry products nationally and internationally. As a spokeswoman for DuPont Pioneer stated simply to the *New York Times*, "We like being able to work under the U.S. regulatory network" (Voosen 2011).

The appeal, indeed necessity, of the “U.S. regulatory network” is also in the largely deregulatory approach taken in regards to agricultural biotechnology. U.S. policy related to GMOs originated in the doctrine that, “the market, rather than the law, was the right instrument for controlling the inventiveness of biotech” (Jasanoff 2005, 63). As introduced in the previous chapter, GE crop experimentation and seed cultivation falls under the U.S. Federal Coordinated Framework for the Regulation of Biotechnology, which functions on the principle that biotechnology products “should not be treated any differently for regulatory purposes from similar products.
manufactured by biological or chemical processes that did not involve gene manipulation” (Jasanoff 2005, 52). The framework utilizes at least twelve existing federal laws, and divides regulatory oversight between three federal agencies: the Food and Drug Administration (FDA), the Environmental Protection Agency (EPA), and the United States Department of Agriculture (USDA). It is a patchwork of regulation with significant gaps and inconsistencies (ABSA 2015).

The USDA is tasked with both oversight of GMO testing and then product deregulation, as well as promotion of U.S. agricultural interests — mandates that can be contradictory. One percent of all GE crop field trials are required by the USDA to go through a permitting process; the remaining 99 percent go through a notification process where risks such as harms to human health or the environment are not considered, and companies perform their own risk evaluations (Gibson 2014). The last full environmental assessment of a field trial in Hawai’i was conducted in 1994 (ISB 2015). Companies are able to protect information about their field trials as “trade secrets,” which restricts the public and Hawai’i State government from accessing basic facts about the nature and location of field trials, including about open-air pesticide use (Gibson 2014). Field locations, rates of pesticides applied per acre, and dilution rates are all protected as trade secrets or “confidential business information” (JFFG Draft 2016, 75). There has been an increase in the classification of information as “confidential business information” in recent years, resulting also in the federal government conducting less research regarding potential risks (Gibson 2014). While any state has the legal authority to review a GMO developer’s federal permit application through an informal consultation process, it cannot block a field trial from occurring.

According to a U.S. Government Accountability Office (GOA) report, “the USDA does not inspect all field trial sites where GE crops are tested; instead, it uses a risk-based approach to select sites for inspection” (2008, 18). When inspections do take place, they are limited by a fragmented approach and overall goal of facilitating research and commercialization of new products. Described by a representative from Monsanto Hawai’i, the USDA inspects operations: “to ensure proper hygiene is followed in handling of the seed, verification of isolation distance when growing a regulated crop… and to review [their] planting and harvesting records” (Gibson 2014, 238).

After a GE crop has gone through the testing phase, the USDA decides whether a company must prepare an Environmental Impact Statement (EIS) prior to deregulation and commercialization. Judgement is based on potential to “significantly affect the quality of the
environment” (40 C.F.R §§ 1508.9(a)). Of the 90 crops deregulated as of 2012, two EIS were conducted as a result of lawsuits and court orders (Montgomery 2012). The gaps in the regulatory framework are significant, and thus deregulated herbicide-tolerant and Bt seeds are grown with no more oversight than any other crop in Hawai‘i (Gibson 2014). As summarized by the U.S. Government Accountability Office, there is no: “program for monitoring the use of marketed GE crops to determine whether the spread of genetic traits is causing undesirable effects on the environment, non-GE segments of agriculture, or food safety, as recommended by the National Research Council and others” (2008, n.p.).

The Environmental Protection Agency has primary authority over pesticide regulation. It does not have a single inspector in Hawai‘i and delegates local pesticide monitoring duties to the State’s Department of Agriculture (HDOA). Nearly half of inspection logs acquired by activists and policy-makers are redacted, indicating that these cases remain “open” and/or contain information not available to the public. In its role, the HDOA investigated seven of 72 possible pesticide violations on one island alone in 2011-2012; on average these took several years for follow-up (Cocke 2013c). According to the employee assigned to review pesticide violations, there has been “little if any action against pesticide misuse” (ibid, n.p.). The public is not notified of violations, even when these might have impacted surrounding communities (HDOA public testimony, Bill 2491). There is no program in place for regular testing of pesticide contamination in the soil, air, or water.

Most generally, the EPA determines which pesticides can be used in the United States, and how they can be used. Notable features of the EPA’s regulatory process include: tests are conducted on one pesticide at a time and not in their synergistic effects, as they are experienced in the real world; tests are conducted only on “active ingredients” despite “inert ingredients” being toxic and synergistic; testing is biased to acute effects and largely neglects impacts from long-term lower level exposures; there is a near exclusive reliance on animal experiments conducted by chemical companies themselves; little attention is paid to more relevant human epidemiological studies carried out by independent scientists; inconsistent definitions of “reasonable risk” are used; and label instructions assume perfect compliance with a range of complicated directions that are often unworkable and not followed (Freese, Lukens and Anjomshoaa 2015; Sass and Wu, n.d.). Unlike many other countries that adhere to a more precautionary approach, the EPA regulates pesticides according to a risk-benefit standard that weighs economic benefits against proven or potential harms. Thus, the EPA’s allowable levels of use and safety standards for air, water, soil, and food residue are typically far less stringent that those of European and other countries. The biases of the U.S. regulatory system are highlighted by the fact that non-
American corporations Syngenta and BASF use pesticides like atrazine, alachlor, and permethrin in Hawai‘i that are banned in their home countries.

While the EPA has recognized the dangers of many of the pesticides used most intensively in Hawai‘i, contradictions in the regulatory system allow for their continued use. Most notably, chlorpyrifos was phased out of residential use in 2000 specifically to protect children, but continues to be used in large amounts in agriculture adjacent to children’s homes and schools. Pesticide drift is almost entirely unmonitored, and the labeling law likely broken regularly in regards to spraying during Hawai‘i’s windy conditions. The EPA fails to take into account the reality that some populations, such as farmworkers and those living in agricultural production areas, are more vulnerable to daily pesticide exposures.

U.S. regulatory regimes and transnational capitalist interests are not merely imposed on Hawai‘i, but require extensive facilitation by local actors and local government, including the State of Hawai‘i and counties. The remainder of this chapter examines local conditions that facilitate transnational agrochemical occupations.

The Search for the Next Plantation

The ways in which the state and local power networks operate in relation to the agrochemical industry today can be partly understood by examining original local invitations of the industry and their ideological and structural setting in sugar’s closures and tourism’s dominance. As should be clear, local settings and processes are inextricable from global dynamics and logics of capitalism.

Following World War II, sugar production in the islands grew less profitable as labor successfully organized, new “third world” territories were opened for cheap monocrop production, and overseas capitalists began investing in Hawai‘i as a tourism destination (see Chapter Three). As the number of tourists arriving to Hawai‘i increased by the millions in the 1960s, development boomed, land prices soared, and land consolidation increased. As the islands’ old and emerging elites, as well as unions, all became invested in what was popularly called “New Hawai‘i,” substantial financial and other resources were “drained from the public coffers” (Kent 1993, 181) to underwrite the tourism industry. Alternative options were negated, both structurally and ideologically, as Hawai‘i deepened its dependence on a steady flow of visitors and jobs supplied by the transnational corporations controlling flights, rental cars, hotel rooms, packaged tours, and the food and trinkets visitors consume.
Sugar production in the islands continued to decline until it all but disappeared in the 1980s and 1990s. As the number of sugar farms went from 285 to 4 between 1982 and 1999, there was much public, state, and private landowner conversation about what was to become of abandoned fields and workers, and how to preserve agricultural lands from being cemented over by the compulsions of the now dominant development-tourism economy (DBEDT 2012b; Kanehe and Mardfin 1987). Many private landowners had no hesitation turning to “inevitable” subdivisions and resorts, as described by a senior economist at First Hawaiian Bank: “The plantation land on Oahu will be developed inevitably over the next decade. Also inevitable is that most of the farm workers who will be unemployed are middle-aged and older and will have a hard time finding other jobs” (Sahagun 1994, n.p.).

Landowners strongly rejected any state interference in their “inevitable” business decisions. In the first wave of plantation closings, Castle & Cooke sharply rebuked the state for forming a task force for trying to keep sugar alive in the Kohala region: “The implication is that he [the Lt. Governor of Hawai‘i, who would head the Kohala Task Force] is going to tell us whether we are going to close the plantation or not. He’s not going to tell us. We’re going to close it” (in MacLennan 2014, 277). MacLennan suggests that this Kohala Task Force in the 1970s “represented the last stand by the State and the union to have a say in maintaining sugar production in the islands” (ibid, 277). After investing USD $6 million, attempting to coax Castle & Cooke to change their minds, trying to find new corporate owners, and even entertaining the idea of turning the Kohala Sugar Company into a state-owned enterprise, the task force concluded by giving loans to a few experimental firms that did not survive the decade (ibid).

In the next decades, the state offered to do more studies, continued in various ways to keep the industry alive with subsidies, talked about better planning, and funded some job retraining programs for cane workers focused on lower paying jobs at hotels, retail stores, and golf courses (despite the fact that tourism was also at an all-time low and hotel layoffs were widespread) (Kanehe and Mardfin 1987; Sahagun 1994; De Lama 1994; Kent 1993). Within the halls of policy-makers and powerful institutions, the dominant idea remained that any meaningful agricultural predecessor and alternative to urbanization would necessarily be in the plantation mold (Kanehe and Mardfin 1987; Plasch 1981). State reports placed hope in discovering substitutions like sugar for ethanol and developing niche export crops. They argued strongly for increasing public subsidization of sugar and slashing public health regulations to lower “the cost of doing business” in Hawai‘i (Kanehe and Mardfin 1987, 43; Seo 1986). Moreover, it was reasoned that crisis would require sacrifice: “high risk ventures may have to be
attempted (and) the community may also become willing to accept activities which it would otherwise oppose because of their negative environmental and social impact” (Plasch 1981, 246).

Debates in state and county departments, landowner boardrooms, and community meetings were contentious, with most decisions ultimately being made by investors and landowners and reinforced by government. Some activists pressed for transition to smaller-scale diversified agriculture for local consumption, as well as worker-owned cooperatives (Rohter 1992; Bacon 1995). Authoritative institutions like the Hawaiian Sugar Planters Association dismissed what they called a “self-sufficiency myth,” charging that local food would not attract capital investment, could not compete with cheap imports, and would only require a very small fraction of agricultural lands to saturate the market (de Lama 1994; Sahagun 1994). The fact that theirs had been an industry profitable and attractive to capital investment only due to trade policy, price supports, and government subsidy, was neglected. Advocates pointed out that there was opportunity to stimulate economic activity through more locally-distributed ownership and production that also reduced dependencies; they also argued that new types of food economies could be built through state support for a public good (Sahagun 1994; Rohter 1992). These discussions revolved especially around “import-substitution” strategies that would generate local economic multiplier effects and contribute to a “green economy” (Rohter 1992 and 1994).

The state did make minimal gestures towards supporting non-plantation food production programs for both local and export markets. However, without more fundamental system change and significant redirection of resources, anything of meaningfully breadth could remain only a myth. University of Hawai‘i crop scientist Hector Valenzuela describes one example: “When the plantations closed, about 200 farmers were given two acres of land [each] to cultivate, but they weren’t given full support. We didn’t show them how to farm. So after a few years they gave up” (Mitra 2014, n.p.). Likewise, worker-owned cooperative initiatives could not wrestle from the state or banks the larger amounts of land and start-up funding required to realize inspired visions (Bacon 1995).

Most generally, the state saw value in maintaining some amount of “diversified agriculture” in the islands. In 1994, more optimistic legislation stated that: “the downsizing of the sugar and pineapple industries is presenting an unprecedented opportunity for the conversion of agriculture into a dynamic growth industry” (Act 264, Session Laws of Hawai‘i 1994, and codified in chapter 163D, Hawai‘i Revised Statutes). As conversations about what would come to fill this space continued, policy-makers in Hawai‘i and Washington were pulled into optimistic,
often utopian projections about the future of agricultural biotechnology. Governor Ben Cayetano declared in 1998 that Hawai‘i was destined to become the “Silicon Valley of the plant and ocean world.” Local newspapers reported projections of a soon-to-be $7 billion industry in “crispier and less oily French fries, sweeter fruit with fewer calories, pest- and virus-resistant plants, bigger crop yields and better antibiotics” (Altonn 1998). More than just agriculture, this was the “lead of high tech,” the cutting-edge of the 1990s “New Economy” (Loudat and Kasturi 2009, 7; Aoudé 2001). State departments produced reports predicting that biotechnology would deliver high-value products and high-paying jobs, while futurist consultants warned that the state must act quickly if it wanted to attract global commerce in biotech (Altonn 1998).

During much of the plantation closure period of the 1980s and 1990s tourism was also suffering, with virtually no economic growth between 1990 and 1995 due to economic slowdown in both Japan and the U.S. (Aoudé 2001; Kent 1994). Broad-based calls for “economic diversification” and especially creation of a high-technology sector so not to miss out on the “New Economy,” were largely intertwined with neoliberal logic and intensifying private-public sector “cooperation” (Aoudé 2001). Though contradictorily linked to ideas of reducing economic dependencies, “diversification” dominantly referred to state incentivization and support of new private capitalist initiatives, typically assumed as led and dictated by transnational capital with the islands acting as host. High-tech was largely lauded by industry, government, academia, and media as that which would diversify, stabilize, and grow the economy; standards of living for all would rise, the “brain drain” would be stemmed, and children would be freed from the destinies of their parents “changing bed sheets” in the service industry (Darby and Jussawalla 1993, 49). A State Committee Report for the 1999 technology omnibus bill concluded:

High technology promises to be the major industry of the future, fast growing and enhancing our everyday lives in more ways than can be imagined. Your Committee’s commitment to fostering high technology growth and development in this State will ensure Hawai‘i’s prominent role as a mecca for high technology companies and a world-renowned center for innovation and invention.

The state government created, staffed, and funded numerous programs and agencies to “pursue the potential high tech utopia” (Herbig and Kramer 1994, 58). These included the High Technology Development Corporation, the Hawai‘i Information Network Corporation, the Office of Space Industry, the Hawai‘i Innovation Development Program, the Hawai‘i Strategic Development Corporation, the Research and Development Industry Promotion Program, and others (Darby and Jussawalla 1993).
Despite its investments, many academics and commentators chided the state for spending “tens of millions” but “failing to attract even one sizable company” (Herbig and Kramer 1994, 58; Darby and Jussawalla 1993, 45). This led to various prescriptions that are instructive of the way that political and economic possibility was being imagined. Several papers published by Paul Herbig and Hugh Kramer, both of university marketing departments, aimed to identify the characteristics of other “innovative hot spots” and why Hawai‘i was failing to become one. They identified a series of what they called “factors critical in formation of innovative hot spots,” including: a strong entrepreneur who could be a “leading force”; research institutions with “entrepreneurial spirits” that linked business and public science; a “pro-business attitude” including unions being the “exception not the rule”; easy access to venture capital; government funds to incubate and support high-tech business; various other forms of public subsidy; and an attitude of “not only acceptance of entrepreneurship but admiration” (Herbig and Kramer 1993, 111-112; 1994). They noted that in Hawai‘i, the “Aloha Spirit involves friendliness, openness, consideration for others, sharing, a tendency to avoid confrontations, mutual respect, and caring for one’s fellow men and women,” and that this might not be conducive to “appreciation of hard work and individualism [that] encourages and provides incentives to be entrepreneurial” (1994, 61). Based on these and other observations, they made several suggestions, including that government must develop stronger pro-business attitudes to encourage entrepreneurs and provide tax breaks. Other academics similarly argued that the state was not sufficiently “pro-business,” that it had fallen behind in the deregulatory trend and was thus losing ability to compete, and that more had to be done to “woo” large multinationals that had their pick of locales (McClain 1992; Darby and Jussawalla 1993; see various articles in Roth 1992 and 1993).

Two keywords, or rather ideologies appear repeatedly in these literatures and conversations — innovation and entrepreneurship. Innovation is assumed as inseparable from technology, versus social processes as a whole, and nearly always private. Rather than a product of commoning that people, societies, or governments do, it is something that companies or individual “entrepreneurs” do (Newfield 2008). In the figure of the entrepreneur, innovation and progress take place through the heroic creativity and genius of one individual. While today the “idea of entrepreneurship becomes increasingly implausible” with production taking place through an ever-extending scale of cooperation (Jones and Spicer 2009, 108), the idea of the entrepreneur continues to exist “with fervour” (Jones and Murtola 2012a, 644). Through “vacuous and uncritical repetition of platitudes” in glorification of the entrepreneur (Jones and Murtola 2012b, 131), particular forms of capitalist laisserie faire economics are promoted and naturalized. The
entrepreneur is positioned as a “force of salvation” (Jones and Murtola 2012b, 117), and one that must be liberated from interference. In particular, states and strong relations of sociality are posited as intrinsically anti-innovation, and thus innovation “should be allowed to disrupt bureaucracy, unions, override social movements and what regular people want” (Newfield 2015, n.p.).

The search to “diversify,” “stabilize,” and bring the “old” capitalist economy into the “New Economy” through the 1980s and 1990s was notably neoliberal. According to reports from the director of the Hawai‘i Department of Business, Economic Development and Tourism (DBEDT) in 2000, the state’s “bold” policy steps to move into a diversified New Economy included: deregulation and tax cuts for business, tax incentives for research and technology companies, facilitation of partnership between business and government for high-tech growth, autonomy for the University of Hawai‘i so it could pursue efforts in high-technology research, and a work force initiative to ensure training of high-skilled workers (Aoudé 2001, xxi; see also The New Economy Omnibus Bill 2000). In his State of the State address in 2000, Governor Ben Cayetano boasted that corporations gave his technology omnibus bill “high marks” for being “one of the most progressive in the nation” (n.p.). Concurrently, record allocations of state funds were poured into tourism in attempts to attract new investors and visitors, and a special legislative session was convened to authorize the building of a USD $136 million convention center that would reportedly diversify the visitor base (Kent 1994). These “pump the economy” (Petranek 2001, 1) and “fiscal emergency” (Witeck 2001, 47) measures were the other half of policy attempts, many successful, at wage freezes, cuts in workers’ compensation, erosion of collective bargaining rights, general slashes in social spending, and privatization of state services (Witeck 2001, 47; Kent 1994).

Though clearly located in what is widely identified as (new) “neo”-liberal ideology and policy, and though seeking to capture a piece in the “New Economy,” in many ways there was nothing particularly “new” about the prescriptions being ushered in during this period. More adept and familiar at facilitating transnational corporate investment and activity than critics charged, in the late 1990s the State of Hawai‘i began offering substantial investment capital and tax incentives to biotechnology operations (Kanehe 2014; Petranek 2001; Higa 2012). At the same time, the state began moving public lands and waters into the hands of agrochemical-seed-biotech companies. Though healthy french fries and super-crops never materialized, the agrochemical-seed-biotechnology industry did indeed root itself in Hawai‘i’s soils, acquiring a range of public supports and subsidies and finding highly suitable still intact plantation infrastructures, social structures, and ideologies. They offered back relatively few field-work jobs for local folks,
brought in most of their own scientists and often lower paid migrant field-workers, and substituted the imaginary “innovation hot spot” of high-tech competitive small entrepreneurs with five mega-corporations that monopolize agricultural biotechnology.

Indigenous activist and farmer Walter Ritte reflects on the brief post-sugar glimpse at a potential shift, even if slight, in policy trajectory:

> Back then the University of Hawai’i’s agricultural extension agents would come by and say that we were going into diversified ag and truck farming and that they were going to provide us with the training and support to make that transition. But that never happened…All of a sudden the best lands were being given to these big chemical companies and we were back to industrial ag again. (Mitra 2014, n.p.)

In official policy, “diversified agriculture” was defined as anything that is not sugar or pineapple, regardless of structure, form, ownership, or distribution of benefits (DBEDT 2012b).

While the agrochemical industry’s reach across the landscape is not close to replacing sugar’s, today it is largely credited with keeping agriculture alive in the islands, creating “green” and “high-tech” jobs, and preserving rural lands and lifestyles (Loudat and Kasturi 2013). Dominant and enduring narratives are reflected in the New York Times and as stated by Mayor of Kaua’i Bernard Carvalho: “The firms have spared farmland that would otherwise be lost to development” (Voosen 2011, n.p.), and this is the “kind of agriculture [that] really feeds our families” (Mitra 2014, n.p.). Described as the “anchor” of any agricultural possibility in the islands (Misalucha 2015), it is said that “Small Ag survives because of Big Ag” (former President of the Hawai’i Farm Bureau, Hervey 2012, n.p.). In the assertions of dominant institutions like the Farm Bureau, it is largely the graciousness of agrochemical companies that sustains any local food production in the islands (Hervey 2012; Chapter Eight).

**Public Support**

The dominant idea that transnational agribusiness which exports its wealth from the islands is the only economic form that can “feed our families” and offer realistic diversification to tourism assumes and obscures numerous forms of public subsidization, particular arrangements of resource control and power, and government facilitation of not only private sector profits, but product monopolies and corporate dominance. Of course most of these conditions originate far beyond Hawai’i’s shores, in the current contours of global monopoly-finance capitalism. More
specifically, a range of international and national policies facilitate unprecedented corporate concentration in the agrifood system and undermine regional food economies and small- to medium-scale or subsistence production.

However, much is also determined by local social relations and decisions. For capitalist plantation agriculture to become the established norm in Hawai‘i and displace the sophisticated production systems that preceded it, it took both imperial nations enforcing their commercial demands on the islands and the backing of a local state. Without favorable local land, water, forest, labor, infrastructure, tax, and trade policies, sugar could not have been competitive or profitable on the global market. Likewise, corporate tourism could not have become dominant without massive state investments in particular infrastructures and forms of bureaucracy, or the “give away” of island resources to overseas capitalists (Stauffer 2001, 94). Similarly, contra the oft-repeated assertion that agrochemical industry “contributions…are at no cost to the State” (Loudat and Kasturi 2013, 4), their operations are conditioned upon a range of public supports and subsidies, including policies that enable externalization of health and environmental costs onto the public. Much of this support is in the foundation of a plantation past, with sugar’s legacies continuing to facilitate the new agribusiness barons.

**Land**

Land acquisition by agrochemical corporations today is made possible by a continuing history of consolidated land control, including the State of Hawai‘i’s management of “public” lands seized from the Hawaiian Kingdom in its overthrow by U.S. agribusiness interests. Like sugar, much of the acreage occupied by the agrochemical industry today are these state managed lands that Native Hawaiians continue to be dispossessed of and have no democratic determination over. On the island of Kaua‘i, at least over 6,000 public acres have been made available through the Agribusiness Development Corporation (ADC), primarily on the Westside. The ADC is a public-private corporation formed during sugar’s closures with the goal of converting agriculture into a “dynamic growth industry,” and structured to bypass “bureaucratic red tape” (Maehara 2007, 27). Without clear mandate as to how to serve its purpose, in practice the ADC has functioned to redistribute public resources for narrow private gain through a non-democratic process in which decisions are made by governor appointees (HDOA 2016). It controls some of the most fertile agricultural lands on the island that are already equipped with infrastructure; the large majority of which are leased to agrochemical companies. Leases include 20-35 year agreements, two for over 2,000 acres, at rates as low as $50/acre/year for tillable acres and $1/acre/year for non-tillable acres. The most expensive lease is for a small prime 10-acre parcel to
BASF for $620/acre/year. As of 2016, agrochemical companies are giving up some of these leased ADC acres as they close and consolidate operations (JFFG Draft Appendix 2, 24).

An estimated 85 percent of lands occupied by the industry in Hawai‘i are leased (Freese, Lukens and Anjomshoaa 2015). In addition to the state, all of these leases are deals with Hawai‘i’s largest landowners with consolidated holdings born from plantation days. Some of these large landholdings are still in original private family trusts (such as the Robinson family), while others have been bought and sold in large concentrated holdings to newer investors (such as Grove Farms, owned in 2015 by Steve Case, former chair of AOL Time Warner). Notably, Kamehameha Schools, the largest private landowner in Hawai‘i, leases over 1,000 acres to Monsanto, which originated as a lease to Holden’s Foundation Seeds in 1999 and passed over to Monsanto when they acquired the company four years later. Kamehameha Schools is amongst the wealthiest charitable trusts in the world, established in 1884 by the will of Princess Bernice Pauahi Bishop for the purpose of educating and supporting Native Hawaiians. Many contest that this mission runs contrary to their business partnership with Monsanto (Yap 2013).

Conversations with members of a family trust that leases extensive acreage to agrochemical companies indicates a sense of being without other options. Debt and pressures to develop lands were mentioned several times. This family trust was one of the last sugar plantations in the islands. Following the passage of the Central America Free Trade Agreement (CAFTA) it initially considered converting to ethanol production, but has since leased a large portion of its lands to agrochemical companies (Hawai‘i Business Magazine 2004). Commenting on a different corporate landowner, several ranchers claim that local farmers and ranchers have been evicted from their leases to make way for the higher paying multinationals, which are deemed more “stable” lessees (Kaua‘i rancher, personal communication, 2013; Bynum 2013).

**Water**

Essential to the agrochemical companies, these large tracts of public and private agricultural lands include irrigation infrastructure from sugar days. Control over freshwater was fundamental to the expansion and profitability of sugar, which would have dried-up without the government-enforced ability to divert massive amounts of water out of forested island interiors and away from other ecological and human communities. Water rights were integral in determining who profited and who was dispossessed, what types of agriculture flourished and what types were disappeared.
Water today continues to be a most contested commons. The Hawai‘i Constitution, State Water Code, and common law protect freshwater as a public trust resource. Kapua Sproat summarizes: “After about a century of plantation agriculture’s monopoly over Hawai‘i’s ground and surface water resources, a movement resurfaced in the 1960s and 1970s to return water use to public management and control” (2009, 6). During these years, the Hawai‘i Supreme Court ultimately reaffirmed that Hawai‘i’s water resources are held in trust, and should be managed for the benefit of all (Sproat 2011). These decisions were followed by the 1978 Constitutional Convention, in which the public trust doctrine was adopted, including the directive “to protect, control, and regulate the use of Hawai‘i’s water resources for the benefit of its people” (State of Hawai‘i Constitution, Article XI, § 7). In law, public trust purposes of environmental protection, traditional and customary Native Hawaiian rights, appurtenant rights (rights that attach to parcels of land), domestic water uses, and reservations for the Department of Hawaiian Home Lands have priority over private commercial water uses.

Implementation and enforcement of the public trust purpose of the law is severely lacking, and control over water is still very much tied to Hawai‘i’s most powerful business and landowning interests (Sproat 2011; Brower 2010). It has taken lengthy and expensive citizen initiated litigation to implement the law in select localized places (Sproat 2011). Agrochemical companies have benefitted from these arrangements, with their use of the water commons enabled by infrastructures and political decisions that mostly continue to keep water flowing towards dominant capitals.

In the example of public land leases on the Westside of Kaua‘i, a legal petition by environmental and resident groups alleges that the Agribusiness Development Corporation and its tenant Kekaha Agriculture Association (Dow, DuPont, Synganta, and BASF), “are committing unlawful waste, including outright dumping of diverted river water” (Henkin and Moriwake 2013, vii). The irrigation systems being used by the agrochemical firms in this case were constructed by Kekaha Sugar plantation in the early 1900s after it impaired its groundwater wells from overuse (ibid, 14). As is most typical, the State’s Water Commission “merely rubber-stamped” historical diversions of the former sugar plantations when management transferred to the ADC (ibid, vii). Similar amounts of water continue to be diverted, though companies cultivate only a fraction of the land that was in sugar and in much less water-intensive crops. Residents, including Native Hawaiian rightholders, allege that both streams and other users are being denied legally rightful water allocation, with many testifying to all-time lows in river water and corresponding ecological degradation.
Tax and Other Direct Subsidy

In addition to public land and water, agrochemical companies are directly subsidized through property tax breaks, high-technology tax credits, investment capital, and taxpayer loss of general excise tax revenue (Kanehe 2014; Hooser 2015b; Redfeather 2012). In 1999, the state began offering various incentives to “high-technology industries” through the passage of Act 178, followed by Act 221 in 2001 and Act 215 in 2004. Act 178 contained eight initiatives with tax credits being its hallmark; these sunset in 2010. According to an audit in 2012, these high-technology tax credits cost the state an estimated total USD $1 billion in lost tax revenue since 1999 (Higa 2012). While at least 25 other U.S. states offer comparable high-tech business investment tax credits, Hawai‘i’s was far above the level offered in any other state (ibid, 14). For most of the years these subsidies were in place, the names of the companies receiving them were not made public or revealed to the legislature, unlike in other states where disclosure is mandated (Curtis 2014; Higa 2012). Thus, it is impossible to know which of the agrochemical companies received subsidies and to what extent. Virtually none of the tax claims were audited (Higa 2012). According to the subsidy tracking analysis of the policy research center Good Jobs First, “for its size, Hawai‘i gives away an enormous amount in subsidies” and has notably “lavish tax credit programs” (2016, n.p.).

Unlike other forms of agricultural production in the islands, the seed development conducted by agrochemical companies does not generate a product that is then sold so excludes payment of general excise taxes. These are lost public revenues that have occurred with the transition from agricultural production to seed-biotechnology research and development (Bynum 2013). Similarly, companies take advantage of agricultural property tax and utility subsidies from counties through land use dedication policy designed to incentivize agricultural production (Kaua‘i County Council Bill 2546).

Monsanto and Dow, and perhaps other companies, participate in the Hawai‘i Enterprise Zones Partnership Program, which “was established by the Legislature in 1986 to help stimulate certain types of businesses such as biotechnology, information technology, and agriculture, and employment in areas where they are needed most” (DBEDT 2007, 2). Eligible businesses are exempt from Hawai‘i general excise tax and can claim partial personal or corporate income tax credits for up to seven consecutive years. Counties may offer additional tax subsidies in designated enterprise zones (DBEDT 2012a).
Adding to these various forms of subsidy, council members on the island of Kaua‘i allege that numerous violations of county law by companies and the landowners who lease to them have resulted in what is likely millions of dollars in unpaid liabilities (D’Angelo 2014b).

**Research Institutions**

Of additional significance in regards to public supports is the role of research institutions, and especially the College of Tropical Agriculture and Human Resources (CTAHR), a public land-grant institution. Like other public research and education institutions, the University of Hawai‘i (UH) is today expected to function as a business, be responsive first and foremost to market logic, and vigorously pursue partnership with private capital. Governor Neil Abercrombie’s (2010-2014) “A New Day in Hawaii” campaign stressed:

> UH and the private sector must work together to form the economic driver that this state has talked about for decades. Closer collaboration will help transition millions in federally funded research and development activity into products and services that can lead to the startup and success of world-class tech companies. (Enay 2011, n.p.)

CTAHR’s mission “to support tropical agricultural systems that foster viable communities, a diversified economy, and a healthy environment” is carried out by “help(ing) all of our clients,” including agrochemical-seed-biotech companies (emphasis added, CTAHR, n.d.). CTAHR faculty are expected to develop intellectual property, generate revenues, and serve private business (Redfeather 2013).

As faculty have expressed, CTAHR’s prioritization of profit-generating research directs public resources away from other research goals and broader social aims. An open-letter to the UH Chancellor and Dean of CTAHR, signed by sixty UH faculty, reads:

> Instead of supporting local production and raising the percentage of homegrown food, CTAHR has increasingly devoted its resources to serving the interests of biotechnology. At times, as many as 60 or 70 CTAHR faculty and staff have been working on biotech projects, despite the fact that, after the initial success of the Rainbow papaya, not one of CTAHR’s more than a dozen attempts to produce a commercially-viable genetically engineered plant species has proved successful... It is surely questionable whether, in terms of a land-grant institution’s mission, such corporations should be treated as members of “Hawai‘i’s food and agricultural system” at all. Yet CTAHR does not merely
regard them as an indispensable part of “diversified agriculture”, it has given its full support, in articles, workshops, and outreach programs, to the various activities of these corporations. Time and energy used in such ways has inevitably detracted from time and energy that could have been spent in support of Hawai’i’s food producers. (Caron 2015, n.p.)

CTAHR also trains students in the skills they will need to provide labor for the industry. Monsanto scholarships influence the development of these education pathways and students’ choices to participate. In addition to research and education, CTAHR plays a critical role in shaping public discourse and opinion around agricultural biotechnology in ways that conveniently erase the role of the agrochemical oligopoly. Partly funded by Monsanto, its extensive outreach programs focus on feeding the world through largely unrealized imaginations of technological possibilities. A “DNA Rap” on its website sings:

It’s DNA that is the key
To finding better crops
That will make farming easier for me!

In its Gene-ius program for school children, a comic book tells the story of child heroine Caitlin suddenly being unable to find food — “all the farmers took a vacation cause it can get hard to feed the whole nation.” Hungry Caitlin is saved by scientists who find the “answers…in DNA!,” creating “plants that won’t take abuse from wind or floods or dry drought weather.” In a happy ending, Caitlin “gets these farmers and scientists to all work together” so that there is enough food. This example is not aberrant, but indicative of the college’s Biotechnology Outreach Program. The program disseminates narratives about not only the purported benefits, but indeed the “necessity,” of biotechnology in ways that occlude its actual control and use.

Faculty within CTAHR who have been critical of the agrochemical industry or raised general questions about agricultural biotechnology have faced various forms of harassment, silencing, and restrictions of their research and academic freedom. An accomplished professor of crop science who publicly raised concerns about GE crops was accused by colleagues of: “actively supporting the poisonous activities of groups basically opposed to CTAHR, science and progress,” “intellectually dishonest arguments,” and “insulting to our organization and several of our clients” (emphases added; Koberstein and Murphy 2015, n.p.). These quotes are suggestive of erosion and suppression of intellectual inquiry and debate. Further, they indicate the unquestioned assumption of a close relationship between industry and the university that, when
challenged, is framed as an “insult.” Some voices from within CTAHR are privileged and seen as representing the institution (scientists leading the college’s Biotechnology Outreach Program, for example), while others are marginalized and made to publicly declare their separation from the institution, though both are participating in a controversial scientific debate. While partnership with industry is expected and encouraged, working with environmental or social justice groups is reproached as leading to “bias” (ibid).

More generally and beyond just CTAHR, the biotech industry has inherited sugar’s infrastructure of both public and private research institutions. University of Hawai‘i (UH), the Hawai‘i Agricultural Research Center (HARC, previously Hawaiian Sugar Planters’ Association), and the more recent Pacific Basin Agricultural Research Center are notable for their transgenic crop research, much of it federally or state funded (USDA 2016b). The critique here is not of agricultural biotechnology research in itself, but the disproportionate devotion of public research institutions and funds to technology pathways favored by and frequently in partnership with capitalist investor interests. These interests often run contrary to or marginalize research pathways necessary to ensuring ecologically sustainable food production (see Chapter Four; IAASTD 2009).

**Unaccounted for Public Policy “Subsidy”**

State supports for the agrochemical industry extend beyond resource use, direct financing, and institutional subsidies, and also include policy regimes that privatize benefits and socialize costs generally. This, of course, is a critique of capitalism as a whole, sometimes reduced to a language of “externalities,” or as discussed in Chapter Two, the things that capital uses in its accumulation processes but does not pay for. Adding to the list above, what is specified here are additional local policy regimes that force the public to pay in various ways for agrochemical operations (health bills, pollution costs, psychological traumas and stress, contaminated livelihood resources such as beehives and fishing grounds, etc.). Public costs are not evenly distributed and differentiation in allotment of burdens is highly marked by class, race, ethnicity, gender, and nationality. Using the language of monetization (“costs,” “benefits,” “pay”) is not intended to suggest that it is actually appropriate or moral to reduce human and non-human life to such conceptualizations, but to adopt these capitalist framings in order to lay bare inconsistencies and inaccuracies in the logic of purportedly “unsubsidized” agrochemical operations.

Lasting and significant socialized costs of agrochemical operations involve impacts on human health and the environment which continue to accumulate from plantations past. The chemical
legacies of sugar and pineapple plantations are still marked by Superfund sites, contaminated drinking water systems, and overall “unusually widespread occupational and general population exposures” to pesticides (Allen et al. 1997, 679; Cocke 2013a). The state’s policies and modus operandi related to pesticide use and large agribusiness more generally is largely left-over from and reminiscent of sugar days. Recent attempts to regulate agrochemical operations within three of four counties have all been at least temporarily preempted by the state’s (non)regulation. In ruling the County of Kaua‘i’s pesticide disclosure and buffer zones Bill 2491 invalid, a U.S. District Court judge issued the opinion: “the State of Hawai‘i has established a comprehensive framework for addressing the application of restricted use pesticides and the planting of GMO crops, which presently precludes local regulation by the County” (Hofschneider 2014a, n.p.). That “comprehensive framework” includes none of the basic pesticide protection laws that have been enacted in many other states, such as no-spray zones around vulnerable population areas, poisoning surveillance programs, and notification requirements for pesticide applications (Freese, Lukens and Anjomshoaa 2015). While at least 26 schools in Hawai‘i are located within a mile of agrochemical operations, Hawai‘i is one of only 19 states that does not have regulations addressing the impacts of pesticide use on or near schools (CFS 2014).

Over the past decades, dozens of pesticide bills have been introduced at the state legislature, though most are never scheduled for a first hearing. Only one, Act 105, has been passed in an “extremely watered down” version of the original bill (Hawai‘i Senator Mike Gabbard, in Cocke 2013b, n.p.). The course of Act 105 is indicative of the general trend around attempts to regulate large agribusiness at the state level. Initially the bill (HB 673) sought to require an annual list of all pesticides used in each county by type and volume, a summary of health complaints related to pesticide use, an analysis of trends in pesticide use, and an assessment of the accuracy of the reported data. Following extensive lobbying by the industry, the Hawai‘i Farm Bureau, large landowners, the Hawai‘i Department of Agriculture (HDOA) and multiple other state departments, the bill was eviscerated of its most meaningful content. What passed was Act 105, mandating the HDOA to post on its website already existing sales records of restricted-use pesticides only. With no start date and no requirements for the timing of postings, the HDOA did nothing. Two years later, pressed by journalists, the HDOA’s pesticide branch said that the law had not been implemented because they did not want to be sued by the industry over release of confidential business information: “We wanted to release something but we can’t do that, we can’t be reckless,” stated Thomas Matsuda, lead of the agency (Hofschneider 2015a, n.p.). Earthjustice attorney Paul Achitoff calls the state’s explanation “nonsense” (ibid). Following the media coverage, the HDOA eventually released to the public minimal data of total RUP sales.
records, not specified by company or user, though this is data they have readily available on file (Hooser 2015c).

As the state has refused to pass its own health and environmental regulations in regards to the agrochemical industry, government agencies have at the same time worked to facilitate companies’ exemptions from federal laws (Pala 2015; Hooser 2015d). The State Department of Agriculture has granted exemptions to federal pesticide label requirements, including allowing pesticides to be used in higher wind speed conditions and increasing the frequency of allowable applications (HDOA 2015). The ADC has facilitated exemption from compliance with Clean Water Act standards by “administratively extending” former sugar plantation’s National Pollutant Discharge Elimination System (NPDES) permit, which includes reporting and monitoring of pollutants in wastewater. An ADC memo recommended an exemption because the Clean Water Act criteria would “likely be extremely difficult to meet” as more stringent federal limits, including discharge limits for pesticides, are now in force (JFFG Draft 2016, 46-47).

Strong parallels can be drawn to the way the state advocated and assisted exemption of sugar plantations from federal environmental laws passed in the 1970s (Kanehe and Mardfin 1987). Notably, when sugar and pineapple vacated the islands, the state did not require companies to clean-up pesticides or other contaminants. Likewise, as chemical companies drop leases on thousands of acres of public land, they are not responsible for soil remediation or for supplying tests to show that they have not left significant chemical contamination (Hofshneider 2015b). Exemptions from county laws regarding grading and grubbing of soils are also granted to companies; excess pesticide-laden fugitive dust may be linked to these exemptions.

In addition to pesticides, there are a range of environmental impacts associated with genetically engineered crops, and concerns specific to Hawai‘i’s unique biodiversity and ecology. However, the Hawai‘i State Legislature has never enacted a law regulating these crops (Achitoff, Kimbrell and Wu 2015). Moreover, the state has followed federal government in not requiring disclosure of the location of experimental biotechnology field trials, irrespective of their nature and legally and scientifically acknowledged potential impacts (Gibson 2014). In the words of Earthjustice attorney Paul Achitoff, the state merely acts as a “rubber stamp” regarding any federal decisions about GE crop trials (ibid, 242). The state currently requires only that a copy of federal notifications be submitted to the Department of Health, and does not ask for redacted confidential business information although it is permitted to. Some suggest that this is an intentional decision to avoid having to disclose to the public information that “may harm GE business in Hawaii” (ibid, 242). A recent activist inquiry into these records revealed that
notifications were likely never examined by state regulators, and majorly redacted in the information provided.

Non-enforcement of existing law also enables externalization of industry health and pollution costs. As with the other items reviewed here, many examples can be drawn to illustrate general trends in the state policy regime. Of clear and direct consequence, the Hawai’i Department of Agriculture is still reviewing pesticide inspection reports from several years back, and has not followed-up on a vast majority of complaints of potential pesticide law violation (Hofschneider 2014b; Cocke 2013c). On the island of Kaua’i, numerous ongoing violations of county environmental and conservation law have been revealed, with one council member alleging that this “has been the norm” (D’Angelo 2014b, n.p.).

Most generally, Hawai’i possesses a strong legal framework for protecting the environmental commons, which was largely enshrined as the plantations began to lose their dominant economic role (Sproat 2011). In 1978, a Constitutional Convention developed amendments that Hawai’i voters later ratified, including elevating the public trust doctrine to a constitutional mandate. The state has a legal duty to hold and utilize all “public trust resources,” including “land, water, air, minerals, energy sources” and all flora and fauna, for the benefit of all people (Gibson 2014, 258; HAW. CONST. art. XI, § 1). Further, the constitution requires local county governments to do the same. However, “the public trust doctrine tells the State how it should make decisions, as opposed to what those decisions must be” (Gibson 2014; 258). In the case of regulating impacts of agrochemical-seed-biotech operations, the constitutional mandate is being neglected. Moreover, as counties have moved to pass regulations in line with protection of “public trust” resources, they have been blocked by chemical company lawsuits and federal courts (Achitoff, Kimbrell and Wu 2015).

In sum, referring also to several historical examples regarding pineapple and sugar, the Hawai’i Center for Food Safety accuses: “Hawai’i State officials have a history of covering up pesticide contamination and denying clear health risks to citizens in order to protect agricultural interests” (Freese, Lukens and Anjomshoaa 2015, 18). While this should not suggest some simple conspiracy, the historical and ongoing institutionalized power of large agribusiness in the islands is significant, as will now be further illuminated.
Local Power Webs

As examination of local subsidy and facilitation of agrochemical operations in the islands indicates, the agrochemical industry relies significantly on local collaborations to materialize its interests. Local alliances, that are themselves globally networked, are critical not only for shaping policy and ensuring access to resources and infrastructures, but also for influencing public opinion and marginalizing dissent. Most important — and beyond mere straightforward collusion — a wider socio-political landscape that is favorable to the industry is constantly under reproduction by Hawai‘i’s most privileged political classes. The agrochemical industry largely stepped into and has benefitted from existing arrangements. At the same time, their wealth and influence shapes new allegiances. In this sense, already existing local power conditions smooth the industry’s operations, while the industry also brings outsized political-financial influence to bear upon Hawai‘i and its local “ruling circles” (Aoudé 2001, xx).

Concentration of political and economic power in the islands remains remarkable, operating especially through interlocked networks and institutions, and significantly tied to land control (Cooper and Daws 1985). A range of Hawai‘i scholars, journalists, and activists have commented on this power structure from various perspectives. In Land and Power in Hawai‘i (1985), George Cooper and Gavan Daws explore the Hawai‘i Democratic Party’s rise to power, and how well-connected political elites were also the realtors, bankers, and investors that most gained from development, tourism, and defense industry growth. They write:

> When we put together the names of developers and the politically well-connected, the answer was immediately and strikingly obvious. In those real estate hui‘is, among those real estate lawyers, among those groups of contractors, speculators, and developers and landlords, are to be found the names of virtually the entire political power structure of Hawai‘i that evolved out of the ‘Democratic revolution.’ (1985, 12)

While not without contestation, significant shifts in this power structure have not taken place. Kent elaborates how those with the most power in Hawai‘i typically remain loyal — and tied through multiple networks — to the local financial establishment, leaders of chief industries, developers, major landowners, and the dominant unions (Kent 1994 and 1993). In the 1990s, Kent remarked that the islands’ “politics of cronyism” was reaching “new heights of cynicism” (1994, 182). Robert Stauffer argues that in no other U.S. state has a “political machine” ruled for so long (2001, 101). Moreover, he suggests that “public boards and commissions take on a membership that reflects the machine more than in other states” (ibid, 101). Others remark upon a “quasi-democratic variant” of a “top-down, centralized, plantation
era political system” (Rohter 2001, 2), the “ruling circles in the state” (Aoudé 2001, xx), or more colloquially, the “old-boy system.”

Strong trends and clear alliances emerge each legislative year in lobbying positions taken on state bills related to the agrochemical industry. In 2015, for example, a bill for pesticide buffer zones around schools and hospitals (HB1514) was heavily opposed by: the industry, the Hawai‘i Department of Agriculture (HDOA), the Hawai‘i Farm Bureau, the Hawai‘i Cattleman’s Association, the Chamber of Commerce, the Hawai‘i Agriculture Research Center (HARC), large landowners, the Hawai‘i Coffee Growers Association, and individual members of CTAHR and University of Hawai‘i College of Agriculture, Forestry and Natural Resource Management (Hilo).

Similarly the same year, a “Right to Farm” bill largely drafted by the industry with the goal of stripping counties’ regulatory rights was supported by: the Hawai‘i Department of Agriculture, the Farm Bureau, large landowners, the remaining sugar plantation, the International Longshore and Warehouse Union, the Chamber of Commerce, and a lobby group representing landowners. While the vast majority of testimony from the public was in opposition to what was dubbed the “Hawai‘i Monsanto Protection Act,” the small coalition of its supporters reflects some of the most powerful institutions and private interests in Hawai‘i. Rather than the exception, this alliance around supporting the agrochemical industry is the norm, and one that has come to be expected by legislators and activists (for further examples, see HB673 and SB590 in the 2013 legislative session).

What follows maps some of these dominant and interlocking institutions that serve as vehicles of the powerful and specifically influence regimes related to agribusiness. Most generally, these can all be considered “incumbent institutions” that favor the status quo, are embedded in the political interests of the powerful, and have institutionalized routine responses based on long histories of operating in certain ways (Leach, Scoones and Stirling 2010). While there is diversity of membership and internal contradiction within each, in regards to the agrochemical industry institutional lobbying positions consolidate around maintaining its interests.

The Hawai‘i Farm Bureau brands itself the “Voice of Agriculture” and is largely regarded as such. It is part of the American Farm Bureau Federation, which was founded in 1919 to counteract farmer-labor organizing that was becoming a strong populist political force (Hauter 2012). It has played a historical role advancing the interests of dominant capitals and obscuring fundamentally competing interests within agriculture. Both locally and nationally, the Farm
Bureau currently represents itself as “grassroots” and a “unified voice” of “all aspects of the agricultural industry” (Hawai‘i Farm Bureau Federation 2016). In this “unity,” the interests of the most dominant agribusiness corporations are always paramount. In Hawai‘i, the “common agricultural interests” that find expression through the Farm Bureau include pesticide, labor, and water policy that most benefits bosses and large landowners. The Hawai‘i Farm Bureau’s Directors include representatives from the agrochemical industry, remaining sugar and pineapple plantations, pesticide distribution companies, and the largest produce, macadamia nut, and ornamental farms, as well as smaller local farmers. Leaders of the Farm Bureau also sit on the state’s policy-making Board of Agriculture with heads of multiple other state departments. Several programmatic partnerships exist between the Farm Bureau and the state and county governments.

The Hawai‘i Cattlemen’s Council (HCC) is similarly regarded as representing cattle producers around the islands, and works closely with the Farm Bureau and its dominant interests. Like the Farm Bureau, it is consistently consulted as a primary “stakeholder” in official policy-making and state planning (DBEDT 2012b). HCC is also unified with the National Cattlemen’s Beef Association, the main trade association and lobbying group for the U.S. cattle industry.

Similar to the Farm Bureau, the Hawai‘i Chamber of Commerce hails itself the “Voice of Business,” and has an over 150-year history representing the island’s elites. The American Chamber of Commerce is by far the largest lobbying group in the United States, and is used as a proxy by agribusiness, pharmaceutical, tobacco, and oil companies through which to “pursue their less popular causes anonymously” (The Economist 2012, n.p.; Katz 2015; Hauter 2012). In Hawai‘i, the Chamber’s Advocacy Department: “works hard to protect employers from increasing business costs, support the progress of new industries and sectors, and create an environment that will attract new business, promote competition and stimulate expansion of the private sector” (Chamber of Commerce Hawai‘i 2015). On the island of Kaua‘i, its “gold sponsors” and board of directors include Dow, DuPont, and Syngenta. Its “silver sponsors” include the largest corporate landowner, First Hawaiian Bank, Hawaiian Airlines, and realty and construction companies.

Historically, the Hawaiian Sugar Planters’ Association was a critical institution for the sugar industry, carrying out research and coordinating everything from policy advocacy to wage control (MacLennan 2014). In 1996 it changed its name to Hawai‘i Agriculture Research Center (HARC), and expanded its research to include genetic engineering in particular. HARC runs education and outreach programs that are reflective of its history supporting dominant plantation
agriculture interests in the islands, championing monocropped “industrial” style agriculture while
dissing scientific concerns around pesticides (Valenzuela 2012, 12). Its board of directors
includes many overlapping Farm Bureau directors, as well as corporate landowner managers
and a previous director of the State Department of Agriculture.

Non-profit “economic development boards” were set-up in the early 1980s on the islands of
Kaua‘i, Oahu, Hawai‘i, and Maui (also serving Molokai). Their similar missions are stated as
collaborating between the public and private sectors to build economic “strength,” “balance,”
and “diversification.” Board memberships are reflective of the politically well-connected, and
indicate how power is maintained through social networks. The Kaua‘i Economic Development
Board (KEDB) executive committee is made up of: representatives from the largest corporate
landowners, managers from DuPont and Dow, past president of the Kaua‘i Farm Bureau, the
director of the county’s Office of Economic Development, the previous county attorney who now
heads a primary real estate law firm, president of the island’s coffee plantation (which leases
land to agrochemical companies), head of the Kaua‘i Visitors Bureau, two military contractor
companies, a commercial real estate manager, and the Chancellor of the Kaua‘i Community
College. The KEDB was contracted by the county to partner with it to develop the official Kaua‘i
Economic Development Plan 2005-2015, in which the political positions and investments of
dominant economic interests, including the agrochemical industry, are clearly reflected. The
KEDB also manages the government sponsored West Kaua‘i Technology Center, which hosts
only the agrochemical company BASF and military contractors.

Articulating the interests of capital in general, as opposed to specific factions, is a key function
of umbrella institutions like the Chamber of Commerce and island economic development
boards (Newell 2009). The business class often has different and competing interests, but also
consolidates around institutions to maximize mutual interests. This has been most notable in the
organizational capacity of the business elite over the past decades to change the wider
ideological and regulatory environment in the United States (Katz 2015). At the same time,
these institutions execute the specific interests of dominant capitals that populate (and fund)
their organizing. In this regard, they undermine less dominant capitals and tend to amplify the
power of the already powerful.

As indicated, the power that functions through the private institutions described above also
weaves through public state institutions. Most notable here is the Hawai‘i State Department of
Agriculture’s regular brokering of the interests of the agrochemical industry. The HDOA
consistently prioritizes promotion of the industry over its other mandates, which also include
regulation of the industry and promotion of other agriculture that is negatively impacted by agrochemical operations. The department's lobbying positions are remarkably similar to those of the industry, and in public debates the Chairperson of the HDOA has largely assumed industry talking points (see Hofschneider 2016a).

The pattern of interaction between industry, policy-makers, dominant institutions, and other power-holders goes beyond the distinct positions of various bodies, and to personal relationships within and beyond formal decision-making committees (see also Newell 2009, 25). There is widespread “close and privileged relationship” between those elements of capital benefitting from the industry’s involvements in Hawai‘i, and those bureaucrats “anxious to support them” (ibid, 49). Revolving roles within circles of the politically powerful are marked. To illustrate, around the time of introduction of Kaua‘i’s Bill 2491, several highly politically-connected women were hired as “community outreach” managers for the industry. These included the previous governor’s liaison, the CEO of the Kaua‘i Economic Development Board, and the previous general manager of a major hotel. Following Bill 2491, the Mayor’s top administrator and adviser was hired by Syngenta. This was after the Mayor went to significant lengths in attempt to derail passage of the Bill, and eventually vetoed it. She was later appointed by the Mayor to the decision-making Kauai Board of Water Supply. At both the state and county levels, official government boards and commissions are significantly populated with individuals from industry, the aforementioned institutions, landowners, and other political elite.

In Hawai‘i, there is a relative normalization of what in other places would be considered too intimate a relationship between regulators and the regulated. As a Hawai‘i Senator put it, it is an “open secret” that key power-holders within state government, including the chairs of committees that control a majority of legislation related to agriculture, have a close relationship with the agrochemical industry (Pala 2015). This includes many individual legislators receiving tens of thousands of dollars annually just in direct campaign contributions from the industry (Grube 2014). Previous Governor Neil Abercrombie (2010-2014), who himself was a primary beneficiary of industry funds, summarized this close relationship well in his proclamation to the industry: “I'm here lobbying you... You don't have to lobby me. You don't have to lobby Russell [Department of Agriculture Chair]. You don't have to lobby this administration!”

In these descriptions there is a danger of losing the complexity, nuance, and contradiction that is always present in the making and remaking of hegemony (Gilbert 2013). While lobbying and other alliances indicate the clear functioning of ruling circles, there is also persistent and growing contestation and contradiction within dominant private institutions. Conversations with
previous or current board members of the Farm Bureau, Cattlemen's Association, and Kaua‘i Economic Development Board, all indicate that internal dissent around the issue of support for the agrochemical industry has arisen frequently in recent years. In the words of one rancher, going against the grain “is like being a Buddhist in a Catholic church” (personal communication). Others also note being strongly ostracized by peers for “not towing the line.” The local networks, institutions, and actors that facilitate agrochemical industry occupation of the islands do not suggest a monolithic and uncontested power block or even uniformity of interests, but instead indicate the entrenchment of institutional designs, pathways, and mentalities that are also shaped by structural power and wealth.

The Social Landscape: Plantation Communities and Workers

While the preceding section should not suggest some conspiracy of local power or masses without agency, recognizing complexity in the functioning of power equally does not mean “retreating into some muddy realm of complete relativity” (Haiven and Khasnabish 2014, 34). There are profound differences in terms of who reaps the rewards and who bears the costs of agrochemical occupations, and complexity should not inhibit naming these. Moreover, this difference across the social landscape — Hawai‘i’s ethnicized class structure (Okamura 2008) — is a critical precondition of today’s agrochemical plantations.

When the agrochemical-seed-biotech industry expanded their operations in the islands, the former sugar and pineapple lands that they occupied surrounded communities created and subsequently abandoned by the plantations. Many of these communities are isolated from tourist centers, located in places where lost jobs, housing, and medical benefits were not easily replaced (Bacon 1995). When sugar exited the islands, unionized workers had wages far higher than in today’s resort industry (MacLennan 2014). Moreover, in some places like the island of Molokai, residents actively opposed and mobilized against development replacing plantations. Molokai activist Walter Ritte describes:

On Molokai we fought tourism so we could keep our subsistence and our way of life, our safety net. But that meant we supported ag. They [the state] told us diversified ag would come in, but then these guys [the chemical industry] did. And nobody knew what it was at first. It took a long time before we figured out what they were doing. (personal communication)
While new agricultural jobs in the seed industry were initially welcomed across the islands, many within these communities grew increasingly concerned about exposure to pesticides, dust, pollution of waterways, and other environmental impacts (Jervis and Smith 2013). These communities are predominantly working-class, with higher concentration of Hawai‘i’s most marginalized ethnic groups (Okamura 2008). The structural inequalities that they face, including narrow employment opportunities and spatial and socio-cultural separation from centers of political power, are continuations of plantation and colonial histories and hierarchies (ibid). The economic and environmental injustices endured are multi-layered and cumulative. The Westside of Kaua‘i, for example, is also host to the island’s landfill, several highly contaminated toxic waste sites left by sugar, and the world’s largest missile testing range (Siegel 2011). In comparison with the rest of the island, the Westside of Kaua‘i has the highest percentages of adults without a high school diploma, households receiving food stamp benefits, and children living in poverty (JFFG Draft 2016, 70).

Ethnicized plantation hierarchies are largely transposed onto today’s fields, with many field workers and managers having transferred directly from sugar or pineapple. As one person dealing closely with the industry put it: “same bodies, different boss companies” (personal communication). Companies offer some higher-paying managerial roles to local people, additionally serving to secure local allegiances, but most senior management roles are filled by internationally mobile white men (Shaw 2016a). Nearly all field-workers are from Hawai‘i’s most marginalized ethnic groups, including Filipina/o or Native Hawaiians, or migrants from other parts of Southeast Asia, Pacific Islands, and Latin America (Shaw 2016a; Hofschneider 2015b). Given Hawai‘i’s occupational inequalities, the wages received in agrochemical fieldwork are nominally higher than what would be earned at the bottom-rung of the service industry (Loudat and Kasturi 2013; Okamura 2008). However, according to the industry, nearly half of the around 1,400 jobs provided are part-time (Loudat and Kasturi 2013). Interviews suggest that the proportion of seasonal work may actually be higher and that third-party contractors typically bring in work crews for 8-12 weeks during busier winter and summer pollination and harvest months.

While the industry represents job creation as a primary contribution to Hawai‘i, they also speak in interviews about the need to use extensive migrant labor because “local people don’t want these jobs” (labor recruiter, personal communication). Workers on Kaua‘i allege being hired by companies initially, and then being laid-off in waves as companies replaced them with increasing numbers of migrant workers. In a rare acknowledgement of the role of white American men and migrant laborers in operations, one manager said of their workforce, “very
few people in the company are from here, … And I get it, it's a little weird, but it's how it works” (Shaw 2016b, 7).

A severe lack of public information and regulatory oversight exists regarding the conditions of migrant workers arriving through temporary guest-worker schemes, which by their very structure tend to deprive and undermine basic labor and human rights (Southern Poverty Law Center 2013). The situation is similar with Pacific Island workers that come to Hawai‘i through the Compact of Free Association, though such workers have more rights than those with temporary visas. Migrant contract workers have reportedly been sent back to their countries of origin after suffering acute pesticide poisonings.

As Amanda Shaw (2016b) argues, the incorporation of new migrant groups into agrochemical plantations is a direct result of U.S. imperialism. Micronesian migration to Hawai‘i, for example, is largely a consequence of the U.S detonating the equivalent of over 7,200 Hiroshima-sized bombs in the Marshal Islands (Letman 2013). Further, many of those who labor in Hawai‘i’s agrochemical fields have been directly displaced by policies deepening capitalist agriculture and the dominance of transnational corporate agribusiness. Labor contractors’ recruitment focuses on places most recently afflicted by capitalist dispossession. These laborers are also considered favorable for the agricultural skills they already possess. As Walia summarizes:

Migrant workers represent the perfect workforce in an era of evolving global capital-labor relations: commodified and exploitable; flexible and expendable…Migrant worker programs are the flip side of the transnational phenomenon of capitalist outsourcing…[they] depend on huge surpluses of labor from the South that capitalism itself has displaced. (2010, 76)

Recruiters refer to migrant workers in highly ethnicized terms, considering some “hard working” and others “lazy,” and reproducing many of the very same racial constructions that existed through the plantation era and motivated labor recruitment from some places and not others (Beechert 1985).

In her examination of labor practices in the Hawai‘i seed industry, Shaw writes that, “By segregating work along the lines of gender, citizenship, ethnicity, race and civil status, many globalized agribusinesses depend on a flexibilized, lower paid reserve of often female labour to meet production needs” (2016b, 4). Though there is no publicly available data about the composition of Hawai‘i’s laborers, women appear over-represented in some field work tasks.
Ethnicized and gendered hierarchies and oppressive labor conditions are pervasive throughout Hawai'i agriculture. The networks of power, actors, and discourses that emerge to guard systemic labor exploitation were made most evident in a series of 2010 legal cases involving hundreds of trafficked Thai workers. The migrant workers faced conditions described by the FBI as “modern-day slavery.” Companies implicated included several of the largest local produce, macadamia nut, and coffee farms, with bosses and managers all well connected in the power webs described above. When put on trial for trafficking 44 workers, owners of the largest produce farm in Hawai'i, the Sou brothers, were strongly defended by two previous governors, the State Department of Agriculture, the former head of the State Land Board, the head of the Hawai'i Foodbank, other farm owners, two banks, and at least 120 others who sent letters to the judge reportedly “prais[ing] their importance to Hawai'i's agriculture industry, their ability to provide up to 200 jobs at a time and their character” (Star Advertiser 2010a, n.p.). It was widely stated that the Sou brothers’ farm is of immense value to the islands' food security, the preservation of agricultural lands, and the “sustainability” of the islands, and that they therefore should be granted leniency. In the multiple connected cases that came to light during this period, the Farm Bureau issued a general defense of Hawai'i farmers, saying that their relatively small sizes made it hard for them to detect criminal labor activity because they don’t have human resources departments (David 2010, n.p.). The president of the Hawai'i Farm Bureau told the press:

If Hawai'i is going to increase its agricultural sector, somebody's gonna have to do the work in the fields...A lot of the local people don't want to do that type of work, so where is that labor going to come from?...A lot of our farmers are dependent on second and third parties to get their labor because they're not large companies. (Star Advertiser 2010b, n.p.)

Agrochemical companies were not directly implicated in the 2010 cases with Thai workers. However, what emerged is indicative of the socio-political conditions and relationships that also facilitate agrochemical occupations, and specifically the reproduction and justification of exploitative migrant worker schemes from which they benefit.
Beyond its workforce, the agrochemical industry establishes wide-ranging economic dependencies, funding social welfare where the state has abandoned people. Plantations past were also remarkable in this regard. As Kent observes of the sugar oligarchs, “It was a ruling class which retained enough of the missionary spirit to delight in lavishing money upon its favorite charities,” while violently refusing changes in policy that would facilitate better working and living conditions (1993, 83). While not to the same extent as sugar, agrochemical companies are notably generous in their funding of a wide range of programs and services in the islands, many of which are heavily relied upon. Just some of these include public school programs, community health centers, domestic violence services, food banks, conservation work, housing projects, sports teams, gardens, and community recreation (Monsanto Hawai‘i 2016). Like charity generally, local stories of “holiday toys for the underprivileged” (Fujimoto 2013, n.p.) rarely, if ever, “raise questions about the origins of the surfeit” (Thompson 2014, 393).

**Not-So-Different Transitions**

As capital incessantly restructures global food production systems to meet its commodification and accumulation imperatives, Hawai‘i has changed from a landscape consumed by tropical monocrops, to one of agrochemical-seed-biotech product development on the peripheries of a tourism-military economy. Though significantly different in the transnational capitalist class now ruling operations and the intensification of capitalist dependencies and compulsions, in many ways, today’s plantations by Monsanto and Dow also do not stray far from those of the sugar oligarchy’s. Much of sugar’s infrastructures, institutions, and ideas have been directly inherited, while agrochemical occupations similarly operate locally by way of consolidated resource control and power, undergirded by U.S. imperial interests. As with plantation sugar, benefits are privatized and costs are socialized, with disproportionate impacts across race and class. While for decades virtually every local politician has dutifully spoken to the need for “economic diversification” from single plantation-economy dependencies, this has largely been a “politics of irrelevance” (Kent 1993, 160) that negates structural inequalities and what it would mean to actually democratize and distribute Hawai‘i’s abundant wealth.

Critiques of today’s agrochemical-seed-biotech occupations must reach deeper and wider than the particularities of Monsanto. Structural injustice and inequity do not stem solely from one capitalist firm, or from a particular technology, and they cannot be addressed merely with straightforward substitutions of “local” for “global.” Indeed, some of the greatest abuses of workers and violations of pesticide laws take place on locally-owned farms producing local food
in Hawai’i (David 2010). Today’s most popular binaries — agriculture versus development, self-
sufficiency versus export, high-tech versus traditional, etc. — tend to miss the most fundamental
questions and actually reduce the scope of public consideration and debate. Rather, to consider
actual alternatives is to look to the very root conditions that continue to facilitate plantations,
oligarchies and oligopolies. It is to seek not a mere “diversification” of Hawai’i’s highly unequal
and anti-democratic monoeconomy — from a little less Hilton-Hotel-tourism to a little more
Monsanto-agriculture — but to disrupt the very systems and powers that preclude truly
alternative possibilities. Without doubt, material and ideological conditions of the present — not
the least being compulsions emanating from beyond the islands’ shores — restrict what can be
thought and done. But in opposition to the alibis of injustice and to the incessant realisms that
cast the current order as inevitable, justice demands claiming those very material limitations as
precisely the indicators that deep systemic change is most necessary. These are concerns to
which this thesis now turns in detail as it interrogates the contest over the possible in Hawai’i’s
agrochemical conflict.
PART III — THE CONTEST OVER THE POSSIBLE
CHAPTER SIX: RESISTANCE IS FERTILE

In September 2013, thousands of residents on Kaua‘i marched on its County Council Chambers chanting “aloha ‘āina” (love for the land), “pass the bill,” and “stop poisoning us, the garden island’s had enough,” marking the largest public demonstration in the island’s history. Under the banners of mothers, Kānaka Maoli, farmers, environmentalists, doctors and nurses, teachers, unions, and surfers, the event united diverse participation around demands for greater regulatory protections against pesticide use by agrochemical-seed-biotech companies (Images 6.1-6.5). Five weeks later, the Kaua‘i County Council passed unprecedented local government legislation mandating complete pesticide disclosure, buffer zones, and a health and environmental study on the impacts of Dow, DuPont, BASF, and Syngenta’s GMO field testing and seed growing operations. Battles reached greater intensity on other Hawaiian islands over the following year, with much current focus on statewide policies and wider movement building.

The final part of this thesis investigates Hawai‘i’s agrochemical occupation as a site of conflict and contest over the possible. This chapter sets the scene, describing Hawai‘i’s GMO Ground Zero Movement. It focuses especially on the eruption of politics around and following Kaua‘i’s Bill 2491 in 2013, where the most extensive fieldwork for this research took place. Though far from a complete story, what is covered here supplies context for analysis of the movement, counter-movement, and contest over the possible. Following this chapter’s background sketch, the subsequent two chapters detail forces that constrict change and collective imagination of the possible. Chapter Seven brings together critical literatures on interlinked matters of the inevitability of capital, the post-political, and anti-politics, while Chapter Eight builds on these themes to identify how horizons of the possible are narrowed in Hawai‘i’s struggle. After examining the counter-movement that aims to lock-in the situation and its injustices, Chapter Nine returns to a critical analysis of resistance and its possibilities. Questions of capitalism and the commons remain central in these examinations. The conclusions reached in the final two chapters signal the necessity of, and critical openings for, thinking and organizing beyond capital towards a more common, egalitarian, democratic, and sustainable future.

The Eruption of Politics: Bill 2491

A large and growing movement, interconnected with other agrifood and social movements, has been drawing attention to Hawai‘i as what activists dub “GMO Ground Zero.” While perhaps problematic in its centering of GMO technology, the description calls attention to Hawai‘i as an epicenter of agrochemical-seed-biotech industry research and development operations,
including the use of genetic engineering to breed pesticide-tolerant seeds. A smaller movement since 2002 brought to public attention a range of socio-political and ecological concerns with GE crops, including significant emphasis on the “seed… patents on life and corporations owning the basis of food, and the strategy of seed saving and seed exchanges,” as described by one of Hawai‘i’s first GMO activists Nancy Redfeather (personal communication; see also Black 2012; Currie 2006).

A wave of resistance led by Kānaka Maoli emerged strongly in 2005 to the patenting and genetic engineering of their traditional staple food crop kalo (taro). Considered by Hawaiians to be both their sacred elder brother and the “staff of life,” indigenous activist Walter Ritte likened the private ownership and genetic manipulation of kalo to the original enclosure of the commons, now robbing spiritual power: “Biotechnology is the second Māhele…the Mana Māhele” (Trask 2006, 24). Following tremendous pressure and eventually direct action by Kānaka Maoli to chain the doors of a University of Hawai‘i building, the University dropped and publicly destroyed its patents on three varieties of taro in 2006. Two years later, the first ordinance related to GMOs was passed by Hawai‘i Island County, banning genetically engineered taro and coffee on that island.

Agrifood movements in the islands also focus on development of “alternative food networks” (Goodman, DuPuis and Goodman 2012), local food production, place-based community food projects (such as gardens, seed banks, and educational sites), expanding organic and agroecological methods, food justice and access to nutritious foods, and indigenous rights to land, water, and subsistence practices (Gupta 2015). Connected to and partly growing out of these movements, since 2013 there has been an eruption of politics around concerns over the health and environmental impacts of intense pesticide use by the agrochemical-seed-biotech industry. This has corresponded to land expansion and a 548 percent “annual total value growth” of the industry since 2000 (Loudat and Kasturi 2013); a spread that has been accompanied by buildup of resident discontent over pesticide-laden dust, school poisonings, the appearance of rising health and environmental problems, and industry refusal to respond to concerns. While many activists are broad in their criticisms of the agrifood system, it is the issue of local pesticide use that has galvanized widespread public attention and mobilization in recent years.

Prior to Bill 2491, several events on Kaua‘i drew broad public attention and mobilization. Most notable were the series of school poisonings at Waimea Canyon Middle School in 2006-2008, and a class-action lawsuit filed by residents of Waimea over the impacts of excessive fugitive
dust and pesticides. Residents had raised concerns over high levels of dust blanketing their homes since 2000 and finally turned to litigation in 2011. Gary Hooser, the council member who co-introduced Bill 2491 with Tim Bynum, noted that the Waimea class-action lawsuit indicated widespread and deep public concern: “for local residents to sue the primary employer in a town like Waimea is unheard of. It really showed me that this issue has cut deep into the community” (personal communication, 2013).

Hooser had previously spent many years as a Hawai‘i State senator, where he introduced multiple pesticide-related bills following the school poisonings. However, such bills rarely made it to the first step of being scheduled for a hearing and none passed into law (Chapter Five). Hooser and activists heavily criticize the state for “dereliction of duty,” “incompetence,” lack of regulatory enforcement, and catering to industry interests (Hooser 2013b, n.p.). It was largely the inability to gain traction at the state level that motivated multiple county level initiatives in 2013 and 2014.

While the local motivations for and design of 2491 centered primarily on pesticide impacts, the concerns of core organizers are also situated in wider understandings of food system injustices. Reflecting the sentiment of many, one young early participant in Bill 2491 articulates that the local refusal is embedded in global concerns around:

> multinational companies seeking profit in our food system. Some of them are chemical companies, and they serve no useful purpose on this planet except for making profit for their shareholders. In Hawai‘i we have no business hosting these corporations who want to do their experimentation and patent their seeds.

Another initiator of Bill 2491 similarly describes that many who are involved have been “watching everything happening globally around Monsanto, and see it on the local level, and their place in it in the bigger picture.” Others distance their concerns from the global, and most especially from being “anti-GMO,” but express that “nobody can dispute that what is happening here [in Hawai‘i] is not a good thing” (elementary school teacher, personal communication, 2013). Through their involvements around local pesticide impacts, many of these activists have also broadened their agrifood system concerns. At the same time, organizers express their opposition as a simultaneous affirmation of what they do want, especially in regards to local resource use and the economy:
This is about what we want for our future, what agriculture means to us, what happens to our land in the long run, where we get our food and if our agricultural lands are capable of food production into the future. This is about what we create moving forward. (Fern Anuenue, Facebook post, 2015)

Bill 2491 began with a living room gathering of several friends in their twenties and thirties who asked council member Hooser to come speak with them and posted an invitation to others on Facebook. Most of these young activists had never been involved in activist or institutional politics at the time. For many, the experience was a rapid political education that broadened to much wider systemic concerns and initiated a longer commitment to activism. Hooser frequently describes the process of drafting and passing Bill 2491 as “true grassroots democracy in action.” Following the initial small meeting with Hooser, the group spent several months conducting extensive research, building a broad coalition, and reaching out to national organizations with scientific and legal expertise including Earthjustice, the Center for Food Safety, and Pesticide Action Network North America. According to Hooser, a long time politician, the process was more engaged than any he had previously witnessed: “it wasn’t just activists showing up, it was activists really doing their homework, like learning to read attorney opinions and pesticide Material Safety Data Sheets. They really took ownership” (personal communication, 2013).

The Bill was introduced in June 2013. In September, it was significantly amended to exclude a temporary moratorium and ban on open-air GMO research operations. It passed in October, and was vetoed by the Mayor and veto-overridden in November 2013. Over its nearly five month course, the Bill generated unparalleled public conversation, testimony, and controversy. Activists, workers, and council members sat through hundreds of hours of public hearings and meetings, with lines to get into meetings sometimes starting the afternoon before they began and involving multiple campouts through rain and thunder. In the largest public demonstration of the island’s history, an estimated 2,000-4,000 people marched for the “right to know.” Chemical companies also organized smaller sign-waving demonstrations with dozens of people.

The Bill itself offered a space for voices, information, and political coalitions to rise. As one mother living adjacent to chemical company fields expressed: “before this we were just banging our heads against the walls in our own homes…now we have somewhere to actually do something together about what is going on” (personal communication). While Bill 2491 was being heard, over 50 local doctors, nurses, and mental health providers formally submitted concerns, with many referencing their observations of “a lot of major health anomalies” in
communities living near fields (Surchatt Chatkupt MD 2013, personal communication; see Chapter Five). Increasingly, directly impacted residents were emboldened to tell their own stories. Information began to surface about workers’ health concerns, illegal spraying practices, violations of tax and land-use laws, the weakening of workers’ rights, and strange environmental occurrences (not all of it factual, and much that continues to be anecdotal). Moreover, the regulatory failures of the state’s Department of Agriculture and Department of Health were laid bare in public hearings. Over the course of Bill 2491, it became increasingly impossible to deny the seriousness of the situation, and those who were previously forced to speak only quietly amongst themselves were given a forum to be heard. It was “political activity” that made “visible what had no business being seen, and [made] heard a discourse where once there was only place for noise” (Rancière 2004b, 30).

The Bill, and the issue more generally, became a dominant focus in the state and soon caught the attention of the world. Headlining in the New York Times, and with stories in many major U.S. news outlets, Kaua’i was called in formal and social media a “true David versus Goliath,” “the little engine that could,” and “the hotbed of anti-GMO activism.” At the time of its passage, the Bill was widely heralded by national activists as a “tipping point” in the struggle against the agrochemical-seed-biotech corporations’ influence over the food system.

With the initial outburst of politics around Bill 2491, industry’s “solutions” — largely supported by state government — hinged on ideas of “working-together,” “better education,” “nonpolitical and science-based perspectives,” and eventually voluntarism. The ideological underpinning and significance of these discourses will be detailed in the following two chapters. Throughout deliberations over Bill 2491, chemical companies maintained, as they continue to, that there is decisively no problem with their operations and that no new actions are necessary. However, as regulation loomed, alternative routes of exit were also sought. Just days before a critical vote on the pesticide disclosure law, State Governor Neil Abercrombie announced that, working with a “Kaua’i delegation,” the state would “be putting forth standards and guidelines for seed/diversified agriculture companies to voluntarily comply with certain health and safety requests of the community” (Abercrombie 2013, n.p.). None of the impacted residents, activists, or policy-makers involved in advocating for Bill 2491 were included as part of the delegation, or ever consulted for feedback on the proposed “steps to address the concerns of the community” (ibid). In a nontransparent and anti-democratic process, its happenings were made public after the industry and state had arrived at their version of a solution. Reaction to the voluntary “Kaua’i Agricultural Good Neighbor Program” was strong, as it was seen as an attempted “derailment”
of county regulation. However, the state proceeded, introducing its proposed program on the eve of a critical county council vote over Bill 2491.

The “Kaua’i Agricultural Good Neighbor Program” is voluntary, includes only highly generalized monthly reporting of restricted-use pesticides, specifically exempts reporting that might compromise companies’ “trade secrets,” and requests buffer zones of 100 feet around schools and hospitals. Its pre-application notices of spraying go to only a handful of schools and hospitals, and are so generalized as to be useless. In contrast, Bill 2491 mandates legally enforceable weekly disclosure of all pesticide use, including precisely when, where, and what was sprayed, and wind speed and direction at the time of spraying. The county law additionally requires 500 feet buffer zones around homes, schools, and medical facilities, 100 feet buffer zones around waterways, detailed pre-application notification of spraying for residents within 1,500 feet of an operation’s property line, a provision for health care providers to access information about acute exposures, and a county-funded health and environmental impact study.

Despite the attempt to substitute legislation with voluntarism, and then a Mayoral veto of Bill 2491, it passed into law by a four to three council override on 16 November 2013. Its passage set national legal precedent as the first U.S. local government law to regulate the agrochemical companies at the site of GE seed cultivation and field trials. It was the most substantial regulation of large corporate agribusiness ever passed at the county level in Hawai’i, until followed in 2014 by a much bolder citizens’ initiative on Maui.

Not naive to its significance, within two months Syngenta, Agrigenetics (Dow), Pioneer Hi-Bred (DuPont), and BASF sued the County of Kaua’i to block its implementation. The lawsuit, filed in U.S. District Court, contends that Hawai’i State and U.S. Federal law preempt the county from action. In official testimony, BASF’s operation manager stated that the industry opposes the Bill so adamantly because it could have the “ramification” of similar laws being adopted in other places. A ruling on the lawsuit by U.S. Magistrate Judge Barry Kurren has temporarily blocked the Ordinance (Hofschneider 2014a). The ruling is on appeal before the 9th U.S. Circuit Court.

Though Bill 2491 is currently blocked in court, its continuing significance in galvanizing collective action around agrochemical industry operations in Hawai’i cannot be understated. The Bill gave people something to unite around, something that felt substantial and meaningful in its challenge to power and potential results. Most especially, the “win” in its passage was a moment
of empowerment and hope for both local organizers and worldwide onlookers. As described by an initiator of the Bill:

It was a seminal moment and a catalyst. It’s the pebble in the water thing. Some people were touched in a way they will never forget. We need more moments like these, we have to win more, because people are touched and they believe when they experience that. I’m sure those people that were part of winning will tell their grandkids. (personal communication)

**Subsequent Waves of Resistance**

Despite cynicism bred from continuing court battles and lack of success changing state policy, the ripples of 2491’s win have also grown into larger waves. During Kaua’i’s Bill 2491, Hawai’i Island County introduced and subsequently passed its own law that would prevent the agrochemical-seed-biotech companies from ever establishing operations there. The law also bans farmers from growing any new GE crops excluding papaya, which is already grown widely. It is also being challenged and blocked in court by the chemical industry. In his signing of the new ordinance, Hawai’i Island Mayor Billy Kenoi stated:

Our community has a deep connection and respect for our land, and we all understand we must protect our island and preserve our precious natural resources…With this new ordinance we are conveying that instead of global agribusiness corporations, we want to encourage and support community-based farming and ranching. (2013, n.p.)

The Mayor’s words are a testament to shifts in public discourse resulting from the movement.

Most remarkably, in November 2014 a Maui County (including Molokai and Lāna’i islands) ballot initiative placing a temporary moratorium on “all GE practices and operations” pending an environmental and health impact study was passed with 50 percent of the vote, despite Dow and Monsanto outspending advocates over 100:1 with a state-record of USD $10 million. More money was spent per vote cast than in any election in U.S. history. Like Kaua’i and Hawai’i Island, Maui County’s initiative is currently being blocked in the courts by a chemical company lawsuit.

Following the momentous passage of laws by three of four island counties in 2013 and 2014, battles are targeting the state legislature. Consistent with a tactic used widely across the U.S., the chemical companies are working vigorously for new state law that would preempt any
county regulation of pesticides and agriculture. Typically framed in the language of “right to farm,” many subtle and outright attempts have been made each year to abolish county regulatory rights. Other state legislative battles since 2014 have revolved primarily around pesticide buffer zones and disclosure, with nothing passing on either side as of 2016.

Both activists and the industry focused substantial efforts and resources on 2014 elections, perceived to have major policy repercussions at both the state and county levels. On Kaua‘i, several newly galvanized and politicized young people entered mayoral, county council, and state representative candidates’ races. Though none were successful, they shifted debates and were part of organizing efforts to enroll new voters, set-up new caucuses, and train candidates. The focus on electoral politics has continued with an eye to 2016 elections, with increased capacity and organization. The “Kuleana Academy,” for example, was established in 2015 with the goal of “progressive values based leadership development and candidate training.” The Academy is initiated and managed by the Hawai‘i Alliance for Progressive Action, which was “born of community struggles” on Kaua‘i against the agrochemical companies. Several graduates of the program are running in 2016 elections. As one longtime conservative politician remarked with regret during the 2014 elections, “it’s [agrochemical activism] changing the landscape of politics” (Eagle 2014, n.p.).

As policy, election, and legal battles are being fought, the movement continues to deepen and expand its work and influence. The movement is generating extensive activity across multiple sites. Just a few examples include citizens’ science and media production, speaking tours, contestation within the university about its relationship with the agrochemical industry, disrupting a Syngenta shareholder meeting in Switzerland (Image 6.7), developing local food “alternatives,” and expanding progressive farmer organizations that challenge the hegemony of the Farm Bureau.

Major public marches and rallies continue to take place across the islands, bringing together coalitions around land use, protection of sacred places, development, Kânaka Maoli political and resource self-determination, and general themes of “reclaiming democracy” and “people over profit” (Image 6.9). Leftist political organizing across the islands has swelled noticeably, articulating connections between and building solidarity around decolonial, indigenous, environmental, labor, and anti-imperial demilitarization struggle. The issue of agrochemical industry occupation and impact remains central to much of this organizing. The issue also persists in local media, showing up daily in articles, letters to the editor, and online commentary.
National and global recognition of Hawai‘i's place in the agrochemical industry's chains of production continues to grow alongside the movement. Initially, this was largely achieved through activists' persistence and strategy. During Bill 2491, organizers generated frequent press releases, used social media extensively, crafted their own articles for the media, and built relationships especially with progressive news outlets. Their success in reaching independent media pressured more mainstream outlets to pay attention, and ultimately the passage of major laws drew global headlines. To date there has been significant, in-depth pieces on Hawai‘i by The New York Times, The Guardian, Al Jazeera, and PBS, amongst others. Multiple documentaries have or are being made. This is not to insinuate that all of this media has been helpful to activists or the goals of justice, but to indicate the continuing significance of happenings in Hawai‘i to wider debates and politics.

Alongside the growth of the movement, the industry has also intensified the counter-movement as Hawai‘i has become a “ground zero” battle site over their role and impacts in the food system. Before analyzing the challenges and potentials of Hawai‘i’s movement in more detail, this thesis now turns to examine material and ideological forces that push back against change and confine collective imagination of the possible.

Images 6.2, 6.3, & 6.4: Kaua'i Mana March, 8 September 2013. Credit: Coalition to Pass Bill 2491.
Image 6.5: Kaua‘i Mana March. Photo credit: Coalition to Pass Bill 2491.

Image 6.6: March against the agrochemical industry in Haleiwa, North Shore of Oahu, 15 December 2013. Photo credit: Dylan Hooser.

Image 6.8 (right): Poster for 2015 Aloha ‘Āina Unity March, bringing together issues of protection of sacred places, Kānaka rights, development of agricultural lands, environmental stewardship, and agrochemical-GMO operations. An estimated 10,000 people marched in Waikiki on 9 August. Subsequent Aloha ‘Āina marches were held on other islands.
CHAPTER SEVEN: THE TERRAIN OF THE POSSIBLE

Understanding the contest over the possible within Hawai‘i’s agrochemical conflict requires first examining the wider ideological-social landscape. This chapter brings together a range of critical literatures on depoliticization and today’s “possible.” While the general focus is restriction of possibility with respect to the social order, for the purposes of this thesis the logics and processes of capital are central. Much of what is traced is most applicable to a global North context, especially to the United States, and cannot be uncritically universalized. The arguments made here provide the foundation for interrogating the constriction of social possibility within Hawai‘i’s situation, the subject of the following chapter. In turn, Chapter Eight’s empirical details of Hawai‘i’s contest over the possible contribute to the broader theoretical conversations of this chapter.

The Natural (or Inevitable) Order of Things

What unfolds in the organization of human societies is conditioned upon collective belief of what is possible. This claim is not an idealist one, in which history is made simply from the ideas in our heads, but a materialist one (Marx 1992, 193). Humans “make and maintain reality” (Graeber 2009, 523) through shared imaginations of capabilities and potentialities. The history of human societies, of social relations and structures, is one of monumental, dynamic, and untold change.

Today, while capital proclaims expansive possibility in techno-utopian futures and individuals are hailed to maximize their personal limitless potentials, horizons of possibility in regards to the social order appear constricted and immutable. Overarching structures that govern our lives are either invisibilized or concretized. Fundamental alternatives to a social order in which astonishing numbers of people live in utter deprivation and die from lack of access to basic and available resources is largely treated as fantasy. In the thought of Jacques Rancière, the ideological struggle between those who have much, and those who have nothing, is always played out in the realm of the possible: “The only song the bourgeoisie has every sung to the workers is the song of their impotence, of the impossibility for things to be different than they are or – in any case – of the workers’ inability to change them” (2011, 90).

In general, the logics and processes of capital do not gain legitimacy by presenting as “The Answer” — a fiction that would be too hard to sustain amongst abundant evidence to the
contrary (Duncombe 1997, 5). Instead, at local and global scales, and through a variety of intertwined ideological and material mechanisms, the mantra of the past decades that “There Is No Alternative” (TINA) is continually reproduced. A historically specific (and relatively recent) socio-economic system structured by competitive accumulation and exclusive control of commons is naturalized as all there is and all there could be, save perhaps totalitarianism. While struggles against inequality and environmental ruin abound, there is at the same time a strange, and dominant, acceptance of a social order that produces destitution and systemic compulsions that may well lead to planetary apocalypse. Debates about more or less (or rather, which types) of regulation take place, but “questioning of the basics” is marginalized (McChesney and Foster 2010, 1). These broad ideological operations of “no alternative” are concomitantly particularized. Whether in cutting government services, privatizing public institutions, eroding labor protections, or creating markets in pollution, a similar hyperbolic logic runs through — we cannot do it any differently, there are no other options, the market will not permit it, if we disobey we will end up like Greece. In Chantal Mouffe’s pessimistic warnings, we appear to be witnessing not the end of history as declared by Francis Fukuyama in 1992, but the end of politics, the end of public contestation over meaningful social choices (2002, 1).

Ideaology that naturalizes poverty and reconciles disparity has always been fundamental to capital (Ricardo 1951; Malthus 1798). While avoiding the tendency to say that everything now is necessarily unique and unprecedented (McCarthy 2013), much can be clearly identified and analyzed in the neoliberal project to “devastate the imagination” over the past decades (Graeber 2011a, 6). Most generally, debates over the “ideal society” have historically been much wider than they are today (Chomsky 1997). Along with many others, Mark Fisher identifies today’s “widespread sense that not only is capitalism the only viable political and economic system, but also that it is now impossible even to imagine a coherent alternative to it” (2009, 2). Fisher describes a collective psychic atmosphere taking hold especially since the 1980s as “capitalist realism,” a sort of invisible barrier that constrains thought and action. While Margaret Thatcher’s proclamation of no alternative to neoliberal capitalism was originally stated as a matter of viability, by the mid-1990s it came to mean no imaginable alternative to the marketization of almost all aspects of life and capitalism as a whole (Fisher and Gilbert 2013; Brown 2015).

What has especially been consolidated is the idea that the big ideological conflicts of the 20th century are over; that humanity has somehow moved beyond ideology (Žižek 1999; Fisher 2009; Jameson 2003). As Fisher notes, “of course, there is nothing more ideological than the idea that we’ve moved beyond ideology” (Fisher and Gilbert 2013, 90). This is precisely the power of neoliberal ideology — it “dismisses alternative positions as ideological while presenting
itself as non-ideology, or ‘realism’” (Lovat, Clewer and Elsey 2011, 14). What are actually profoundly political and ideological projects, “have successfully masqueraded as a set of objective, natural, and technocratic truisms” (McCarthy and Prudham 2004, 276). Useful for thinking more about the invoking of “realism” today, Alenka Zupančič offers a summary of the psychoanalytic notion of the “reality principle”:

The reality principle is not simply some kind of natural way associated with how things are ... The reality principle itself is ideologically mediated; one could even claim that it constitutes the highest form of ideology, the ideology that presents itself as empirical fact or (biological, economic ...) necessity (and that we tend to perceive as nonideological). It is precisely here that we should be most alert to the functioning of ideology. (2003, 77)

Critique of capital should not be conflated with specific practices and ideas of what is usually identified as “neoliberalism” (Mirowski 2013). However, TINA’s arrival within neoliberalism is a central aspect of today’s assumed immutability of the capitalist system generally, as well as the triumph of specifically neoliberal logics and policies as most natural and ultimately inescapable. Core to this is successful installation of “a ‘business ontology’ in which it is simply obvious that everything in society, including healthcare and education, should be run as a business” (Fisher 2009, 17; emphasis in original). Such ideas, which would have previously appeared impossible, are today presented as inevitable. As Jason Hickel points out, “for most of the 20th century, the basic policies that comprise today’s standard economic ideology would have been rejected as absurd” (2012, n.p.). Indeed, in regards to neoliberalism, what started as a “starkly utopian intellectual movement” (Peck and Tickell 2002, 381) has today grown into a starkly dominant imaginary of the world as a giant marketplace (Brown 2015).

The acceptance of global monopoly-finance capitalism and neoliberalism’s attempt at the marketization of everything is undergirded by a sense of resignation. Fisher describes this as a “pragmatic adjustment” to the truism that “this is the way things are now” (Fisher and Gilbert 2013, 90). The construction of consent folds in a cynical understanding that things are bad, but there is little to be done (Lovat, Clewer and Elsey 2011). There is a general feeling that whether one likes it or not, the world is now governed by both the mandates of capital and the expressed interests of the most powerful capitalists. While rejection of capitalist compulsions and culture (or more typically, “consumer culture”) is pervasive, it is largely detached from a politics that actually seeks to contest arrangements of capital. Fisher argues that individualized anti-capitalist sentiments and clichés can actually serve to reinforce the dominant order, further exacerbating symptoms of resignation and disempowerment. Awareness of the feeling that one
cannot do anything serves to deepen that feeling in a “reflexive impotence” that becomes a “self-fulfilling prophecy” (Fisher 2009, 20).

Capital’s inevitability is constructed in large part by coding aspirations for something better as dangerous openings for the worst of human capabilities. In Alain Badiou’s (2012, 94) words, “It is thus possible to ‘humanise’ capitalism and ‘develop’ democracy. But to construct a productive, institutional social order normed by equality and genuine popular command — that is completely impossible, a fatal utopia." The specter of “fatal utopia” demands a lowering of expectations in order to protect from terror and totalitarianism (Fisher 2009). Badiou says of this contradiction:

Sure, they say, we may not live in a condition of perfect Goodness. But we’re lucky that we don’t live in a condition of Evil. Our democracy is not perfect. But it’s better than the bloody dictatorships. Capitalism is unjust. But it’s not criminal like Stalinism. We let millions of Africans die of AIDS, but we don’t make racist nationalist declarations like Milosevic. (Badiou, Cox and Whalen 2001, 69)

Similarly, Graeber argues that worldviews which emphasize “forces of creation” are marginalized as neglecting the social and historical importance of destructive forces — “states, armies, executioners, barbarian invasions, criminals, destructive mobs, and so on” (2009, 514). The dominant view insists that to simply pretend such things do not exist will create far more horrendous destruction than to take a “realistic” approach to thinking about human capacities. Referring to centuries of ideological demoralizing (Hardin 1968; Locke 1970), Peter Linebaugh addresses such assumptions as they are deployed against the commons:

Capital derides commoning by ideological uses of philosophy, logic, and economics which say the commons is impossible or tragic. The figures of speech in these arguments depend on fantasies of destruction — the desert, the life-boat, the prison. They always assume as axiomatic that concept expressive of capital’s bid for eternity, the ahistorical “Human Nature.” (2014, 14)

Not only is “human nature” consistently disparaged as impossibly anti-commons, but it is also proclaimed necessarily capitalist in its drives and desires. Many thinkers of capitalist ideology suggest that the heart of the neoliberal project has been a revival and revision of classical liberal constructions of human nature (Locke 1970; Ricardo 1951; Wayland 1837; Malthus 1798). Following the tradition of liberal thought but also breaking from it in radical ways, neoliberalism “understands individual interests to be largely mutually exclusive, self-interest to be the only
motive force in human life and competition to be the most efficient and socially beneficial way for that force to express itself” (Gilbert 2013, 9). Crawford Brough Macpherson’s (1962) “possessive individualism” remains critically important for identifying the ideology according to which competitive individualism is the most innate human characteristic and the only logical basis by which to organize society. However, the “reprogramming of liberalism” has traveled far from its historical proponents, for whom “economic man” still had a life outside of the marketplace (Brown and Shenk 2015, n.p.). Drawing on the work of Michel Foucault, Wendy Brown argues that neoliberalism aims to reconfigure the human being as *homo oeconomicus*, “financialized human capital, seeking to enhance its value in every domain of life” (Brown and Shenk 2015, n.p.; see also Brown 2005, 40). Without treading too far into debates about how to best define neoliberalism, Brown’s conceptualization is useful for interrogating its reimagining of the whole of the human experience in an economized ontology:

> Human beings become market actors and nothing but, every field of activity is seen as a market, and every entity (whether public or private, whether person, business, or state) is governed as a firm…Neoliberalism construes even non-wealth generating spheres—such as learning, dating, or exercising—in market terms, submits them to market metrics, and governs them with market techniques and practices. Above all, it casts people as human capital who must constantly tend to their own present and future value. (Brown and Shenk 2015, n.p.)

While a lot of people “manage and navigate around neoliberalism without necessarily ingesting its values as their own” (Brown 2010, n.p.), its rationalities largely narrate belief of human possibilities.

It is beyond the scope of this thesis to detail antidotes to the alibi of incorrigible human capacities (provided extensively by feminists, anarchists, critical theorists, anthropologists, postcolonialists, neuroscientists, psychologists, etc.). However, it is important to state the fact that the majority of social organization that has worked in the past, as well as the many non-capitalist forms of relation in the present, are completely ignored in capitalism’s justifications (Shukaitis 2003; Graeber 2004; White and Wilbert 2011; Shannon, Nocella and Asimakopoulos 2012; Goldman 2009; Lappé 2013). As David Graeber (2011c) argues, the very condition of possibility of human society is a “baseline communism,” or a giving according to abilities and receiving according to needs. Or in the words of Rancière, “inegalitarian society can only function thanks to a multitude of egalitarian relations” (2006, 48). Mutual aid, solidarity, and voluntary collective action are the most fundamental aspects of sociality, antithetical to capitalist
apologies of self-interest, greed, and competitiveness. It is the very compulsions of capital (including violent, imperial impositions) that deny the flourishing of possibilities that it codes as impossibilities, while the alibi of human behavior is conditioned from within capital. Far from a utopianism that imagines complete liberation from the quandaries, dilemmas, and tensions of the human condition and power relations, this is a mere recognition that more equality, more democracy, and more justice, are clearly compatible with human capabilities.

While the spectrum of possibility in the domain of socioeconomic relations is extremely narrow and unidirectional in today’s dominant visions, the grandest of possibilities do still have a home. Capital and its apparatuses of consumer recruitment have gravitated increasingly to promising the impossible in the realm of self-realization and personal enhancement. Such promises align with techno-utopian projections and scientific advances that vow, in certain worlds, “nothing is impossible.” One can achieve anything they believe, look twenty years younger, travel to space if they can pay the ticket, perhaps even soon double their lifespan. Moreover, in corporate boardrooms, the language of impossibility might be cause for discharge. As Campbell Jones puts it, “thinking big, being big and acting big are today big business. This is the world of the world-beating creative thinking class, for whom innovations and the creation of unimagined product lines are the keys with which to unlock the future” (2012, 98). In some spaces, thinking the impossible is outdated, unrealistic, or fatalistic. In others, “it is the order of the day” (ibid, 99).

There are clearly important fissures in capitalism’s “seamless” occupation of horizons of the thinkable (Fisher 2009, 7), especially following uprisings in the Arab world, Occupy’s clarion articulation that “no true democracy is attainable when the process is determined by economic power” (New York General Assembly 2011; Graeber 2011b), and in subsequent mainstream public discourse at least asking questions about capitalism (Piketty 2014; Klein 2014; Pope Francis 2015). In Fisher’s assessment, “Before 2008, we couldn’t imagine an alternative to capitalism. But Occupy showed that we can now at least imagine imagining it” (2011, n.p). Indeed, in several recent major polls in the U.S., people appear to favor socialism about as much as capitalism, or at least “free-market capitalism” (Robbins 2009; Eichler 2011). In 2015 and 2016, a steady drum-beat of movements from the left are coincident with the rise of political candidates and parties attesting alternative visions to capital. In events of recent years, one might say that contests between the commons and capitalism, and democracy and control, are ramping up.
Disavowal of the Structural and Political

Dominant political discourse commonly disavows the structural, and thus the political, serving to naturalize capital. The matter of the political that is less than political has been commented on by a range of theorists. Glyn Daly describes the “infra-political,” which is essentially “fake” in that it “opens a certain space for contingency and subversion but in ways that do not fundamentally challenge the existing order within which it is functioning” (2007, 6). Daly gives the example of “business ethics,” whereby every facet of business — from environmental awareness to diversity in the workplace — can be drawn into question, “except the logic of business itself” (2007, 7). What is at work here is a filtering of the acceptable and non-acceptable, where what is typically disavowed are the very structures and logics that create that which is being challenged. For Daly, the infra-political ensures that nothing fundamental to the existing order should ever be addressed, or even brought to light. To give another example that illustrates the naturalization of capital, popular economist critics of certain neoliberal policies still retain its basic theoretical architecture, which more generally has become the governing logic of politics (Mirowski 2013).

Henry Giroux’s (2014) “discourse of disconnection” within the machinations of “disimagination” is also useful here. For Giroux, isolated issues are addressed separate from the broader relations and historical context that give them meaning, “narrowing our capacity to perceive the confluence of socio-economic-cultural interests and the prevailing issues of our particular political moment” (2014, 63). The fragmenting and disconnecting of issues largely serves to invisibilize operations of power.

Further insight into the disavowal of the structural comes from Badiou drawing on concepts from psychoanalysis. At a lecture held at the University of Auckland in November 2014, Badiou posited the “scandal” of the use of a “small bit of the Real” (for example, a little piece of corruption) to escape the Real (that corruption is the law, norm, and non-exception when profit is accepted as the sole driver of society). In a case relevant to this thesis, Monsanto is the highly-recognizable and widely-despised “little bit of corruption” — the imagined exceptional bad guy — that stands in for the Real of “Monsanto” as the law of the world (the structural situation that compels commodification of life, poisoning the planet for profit, subversion of government to demands of capitalist elite). Similarly, the financial crisis of 2007/08 is the fault of the small part of the Real that are “bad bankers” and other irresponsible individuals or single institutions. Generally in these “political scandals” that function finally as “propaganda” (Badiou 2014), social processes are reduced to the moral failings of individuals (Žižek 2013; Panayotakis 2010).
Likewise, in his investigation of environmental governance, Erik Swynedgouw charges that ecological problems are identified as stemming from the “pathological phenomenon” — the outsider or outlier — and thus solutions are said to reside inside the system itself (2009, 612). The commodification of air and marketing of CO\(_2\) is a prime example of the “procedure by which the very mechanisms on which ‘the system’ rests is believed to be able to cure itself from its pathological excess” (ibid). The outsider “enemy” is CO\(_2\), (or “poverty,” “hunger,” etc.), “always vague, ambiguous, socially empty or vacuous and homogenized…a mere thing, not socially embodied, named and counted” (ibid).

The blaming of the “pathological phenomenon” and assumption of no alternative to capital were on clear display in the aftermath of the 2007/8 financial collapse. A flatly exposed crisis of capitalism was accompanied by a full-throttle reassertion of more extreme neoliberal and austerity politics, to which there appeared no alternative (Panayotakis 2010; Graeber 2012; McNally 2011). Virtually all critique outside of the most radical circles was aimed at “bad” government or “bad” people, corrupted government or corrupted “pure” capitalism, with little space for coherent systemic response (Panayotakis 2010). Moreover, the manner in which dominant institutions and investors were able to coalesce and demand trillions of dollars in public money, then shamelessly disperse multi-million dollar bonuses to individuals, was a striking reminder of what is, and is not, considered acceptable, indeed “inevitable,” in the political-economy (McChesney and Foster 2010).

In theorizing the disavowal of the political, many suggest a “post-political” condition, in which “the depoliticised, socially objective, expert administration and coordination of interests” has become “the zero-level of politics” (Žižek 2008, 34). The post-political begins from the premise of consensus and cooperation, suggesting that all that remains is the mechanical, expert management of life. The dominance of a “managerial logic” (Swyngedouw 2010, 225) reduces the political to the technical, to questions of expert knowledge and mere management of the facts. Bülent Diken and and Carsten Bagge Laustsen write, “politics becomes something one can do without making decisions that divide and separate” (2004, 99). The possibility of conflict with and rearrangement of the existing order of the situation is smoothed over and displaced in the “staging of politics as a form of consensual management” (Swyngedouw 2010, 227). While some discussion and dispute are encouraged, it is only permitted within the general frame, in which problems are ultimately resolved through techno-managerial production of consensus (Swyngedouw 2011, 77).
In the thought of Rancière, “the essence of consensus is not peaceful discussion and reasonable agreement as opposed to conflict or violence. Its essence is the annulment of dissensus” (2010a, 42). It is the containment of all disagreement to fit within the existing social order, within “the partition of the sensible” (Rancière 2010a, 36). Rancière writes:

A culture of consensus is accordingly created that repudiates the old conflicts, accustoms us to dispassionately objectivizing both the short- and long-term problems that societies encounter, to asking experts for solutions, and to discussing them with representatives qualified in grand social interests. (2006, 75)

Further, the post-political tendency towards narrow production of experts that manage particular situations bankrupts ways of thinking that are global, theoretical, philosophical, oriented towards dynamism and interrelationship, and beyond the incohesive isolation of the particular (Žižek 2013).

McCarthy (2013, 19) and others express important reservations regarding the “analytical accuracy and political utility” of using the sweeping category of the “post-political” to characterize the present condition, as well as the corresponding narrowing of judgements of what constitutes “proper” politics (see also Goldstein 2013). Moreover, “mere management of facts” might be subversive in the context of climate denialism and corporate deception around products ranging from chemicals, to nuclear, to tobacco (Oreskes and Conway 2010). Indeed, Naomi Klein (2014) argues that in the case of climate, some corporations and right-wing think-tanks clearly understand that to accept the dominant scientific consensus would necessitate widespread and fundamental political change.

At the same time, and as McCarthy also suggests, this does not mean that ideas of the post-political are not useful for interrogating hegemonic political common sense and how it operates to foreclose the organization of dissent that is essential for politics. As discussed further below, conflict itself has clearly not been evacuated from the realm of politics; it is where and how that conflict does and does not function that is a matter of concern. Thus, rather than theorizing a post-political “condition,” what is most relevant for the purposes here are operations by which the structural, the political, and the fact of deep division in the social order are disavowed. In particular, the post-political identifies mechanisms by which politics is channeled in ways that do not disrupt the status quo, especially in the myth of the consensual. As a hegemonic discourse, the post-political operates in observable ways (including being strategically mobilized by actors with deeply political goals) to obscure choices that are always being made, power that is always
operating, and questions of “who decides?,” “why?,” “based on ‘facts’ constructed how?,” “from which knowledge(s)?,” “from within what worldview?,” and “to the exclusion of what / who?” (Leach, Scoones and Stirling 2010).

Central to the operation of politics as consensual management is the flattening of disparate interests. Swyngedouw argues, “whereas the proper democratic political recognizes the constitutive split of the people, the inherent antagonisms and heterogeneities that cut through the social…the post-political disavows these antagonisms” (2010, 225). That which recognizes antagonism (and its ineradicability) is vilified as “divisive.” The mere act of speaking inequality and division is relegated to the terrain of “unauthorized violence” (Swyngedouw 2010, 227; Rancière 2010a). In a range of current contexts, loud denouncement of “divisiveness,” “polarization,” and “hostility” seeks to contain challenge to the existing order. On the 2015 Greek referendum, Fisher writes:

“Polarizing” in most of these repeated uses means that the mass of people have been asked to consider issues fundamental to their lives…“polarizing” equals, likely to cause thought, debate, dispute and subject them to the stresses of political agency. How dare a government go to the people with such pressing and complex questions, when its job is to shield them from the difficulty of thought via technocracy. Polarizing here just means profound questions, questions that touch and demand action on fundamental aspects of social organization. (2015, n.p.)

Critical to the reinforcement of post-political logic is the recasting of past political processes as having been concluded through consensus and compromise. Such narrations perform a negation of the role of conflict in inscribing new axioms. For Rancière, while accommodation may take place at the end of a sequence of political action, this is not something that has been “offered,” but made through struggle (May 2009, 112). When this is denied, the necessity of antagonism for rupturing the social order is disappeared.

Post-political ideology is marked by the dominance of social change projects aiming to operate “outside” of politics (Shove and Walker 2007), or build apolitical “win-win solutions” to problems. Here, the post-political’s emphasis on annulment of disagreement can start to be linked also to what others identify in today’s “anti-political prejudice” (Bilakovics 2012; Guthman 2007). Disengagement from and even hostility towards the realm of politics has intensified especially alongside neoliberalism’s anti-statist and individualizing impulses. Many distance themselves
from the contaminated field of political conflict in a culture of atomized cynicism, disavowing both the inherent corruption of government and collective struggle for social change.

As McChesney and Foster observe, “With the economic system off-limits to criticism (even invisible in its main power dimensions), attention necessarily gravitates to government as the root of all evil. The state must therefore be the source of the peoples’ problems” (2010, 8-9). Indeed, most states have functioned less and less in the interest of people, and it is hardly surprising that individuals denounce “democratic” institutions that exclude them. As empirical evidence in the U.S. has documented, there is a profound disconnect between the stated policy preferences of low and middle-income Americans and what actually happens in Washington, a fact to which people are not ignorant (Gilens 2012; Gilens and Page 2014). Reflecting on this recent research, Paul Heideman argues, “the political passivity of neoliberalism’s victims reflects a real diminution of their political options” (2014, n.p.). While politics is irreducible to electoral processes, the steady decline of voting in western democracies is indicative of more general resignation, pessimistic disillusion, disengagement, apathy, and atomization. For their part, large corporations are “delighted” by anti-statist sentiment (Žižek 2013, 7), and invest heavily in its flourishing (Gilens 2010; Olmsted 2015; Katz 2015).

With the wider disavowal of the political (both outside of, and in relation to the state), notions of social solidarity and collective struggle for change are largely collapsed, replaced by logics of individualism. When extreme individualism foregrounds an understanding of the world, action for and by collectives is easily made unintelligible as such. In repudiation of all things “political,” those that engage in conflictual social struggle are often regarded with suspicion and disapproval. Well documented in corporate propaganda tactics, allegations of hidden personal motives and hypocrisy are frequently used to discredit activists. There is an assumption that if one cannot fully escape global chains of capitalist exploitation, then one is not entitled to speak about changing them. The only rational action, then, is made to be addressing one’s personal lifestyle choices, and to attempt wider socio-political change is chided as an inescapably self-righteous and duplicitous act.

In opposition to the political, and to the intrinsic imperfections and contradictions of collective social struggle, the ethical individual focused on their personal lifestyle is most celebrated. In contrast to the political subject, this individual is cast as non-ideological. Such characterization denies that neutrality is a stance of acceptance of the direction in which events are moving (Zinn 2002, 8), a most profoundly ideological position. Contra history, instead of social movements
and collective actors, entrepreneurs, philanthrocapitalists, and “socially-responsible” businesses are cast as the respectable agents that will address the world’s problems.

Divisive, confrontational, and antagonistic politics are not a thing left behind in what some call a post-political turn to consensual management — it might even be argued that they are most characteristic of a negative, personalized, and largely “informational politics” that descends into sound bites and scandals (Castells 2005, 162). Hateful political commentary blanketing the internet, or the proliferation of smear tactics in political and corporate campaigns, are illustrative of the personalized attack politics that has become so pervasive (Rohrer 2012; Mulvey and Shulman 2015). Such politics, and especially personal slander tactics, create a chilling effect that is hideously anti-democratic (Hager 2014). They work not only to silence, marginalize, and distort particular issues, but contribute to more general disaffection. They need to be understood as part of a wider phenomenon undergirded by anti-political and individualistic rationalities, and one that powerful interests have found extremely effective for stifling dissent and change (Oreskes and Conway 2010). Sheldon Wolin argues that it is the very trivialization of political discourse that stirs fragmented emotional outrage while leaving capital, empire, and the social order unchallenged. For Wolin, “It is all politics all of the time but a politics largely untempered by the political” (2008, 66). There is continuous squabbling between political parties, corporate powers, and rival media outlets, but what is absent is the political, the collective engagement in “finding where the common good lies amidst the welter of well-financed, highly organized, single-minded interests” (ibid, 66).

**Capital’s Trappings**

The ideas, discourses, and imaginaries focused on here are clearly inseparable from the material, day-to-day lived experiences of precarity, debt, oppressive apparatuses of the state, and immediate dependencies on the smooth functioning of the system (Lazzarato 2012). While neoliberalism and financialization give new expression to practical and perceived system lock-in, this is certainly not a fact new to capitalism: capital can “rely on his [the worker’s] dependence on capital, which springs from the conditions of production themselves, and is guaranteed in perpetuity by them” (Marx 1992, 899). As individuals within capitalist relations, all are dependent upon capital to meet their needs; this is true also of particular capitalist institutions that may be obviously exploitative, but become entrenched in the fabric of society.

Many today are increasingly integrated into financial circuits, their own insecure livelihoods bound to the stability of capitalist accumulation, growth, institutions “too big to fail,” indebted consumption, and the steady rise of land and housing prices. Leo Panitch and Sam Gindin
describe recent decades “material integration” of workers to financial capital, as access to new forms of credit has gone together with stagnating wages and higher job insecurity:

Workers reduced their savings, increased their debt, and looked for tax cuts to make up for stagnant wages; they cheered rises in the stock markets on which their pensions depended, and counted on the inflation of house prices to serve as collateral for new loans, provide some added retirement security, and leave a legacy for their children. (2012, 192)

The experience of individualized precarity is itself an obstacle to political mobilization against it. Debt ridden, over-worked, increasingly atomized, divided by racism, forced out of public spaces, robbed of critical education and other essential foundations of a democratic society, and lacking the time to engage with one another, the working class faces sizable difficulties to organizing (Lilley 2011, 14; Herman and Chomsky 2002; Chomsky 2004). Moreover, especially for subordinate groups, the practical and material obstructions to political engagement are substantial, often taking violent, punitive, and coercive form (Alexander 2010; Haiven and Khasnabish 2014; Abercrombie, Hill and Turner 1980). The state’s violence against those who disrupt power can be severe and is disproportionately applied against the non-white, poor, non-citizen, and queer (Ackerman 2015; The Counted 2015).

Some radical scholars also charge that system lock-in and impediments to radical organizing have been fostered by the rise of the professional-managerial stratum, which over past decades was afforded comforts and securities within the existing order. Much of the liberal-left belongs to this relatively privileged class, who have been both critical mediators of capitalist exploitation as well a force for more liberal politics (Ehrenreich and Ehrenreich 1979 and 2013). Of course, in past years, many within this class have themselves joined existences of precarity.

Capital’s trappings and contradictions are becoming more pronounced as inequality and planetary destruction reach unprecedented levels. The problem of TINA is actually a very real one when more radical alternatives to problems are not considered, especially as it becomes increasing difficult to conceive “moderate solutions” (Gindin et al. 2011). This is not to say that only “revolutionary” change matters, but that the systemic compulsions of capital must be seen for the limited circularity of possibility that they produce. As Joan Robinson (1962) famously put it, “the only thing worse than being exploited by a capitalist is not being exploited by a capitalist.” Workers must fight for their jobs, i.e. defend particular capitals even if they are antithetical to their long-term interests, desires, aspirations, or values. Capitalists only remain capitalists “to
the extent that they are loyal servants to capital” (Holloway 2002, 34; Harvey 1975). States only remain legitimate to the extent that they can supply capitalist growth and development, which often means adhering to the impositions of imperial capital. As Harvey writes, “Any slowdown or blockage in capital flow will produce a crisis. If our blood flow stops, then we die. If capital flow stops, then the body politic of capitalist society dies” (2011, 90). Moreover, as the 2007/08 crisis made all too clear, U.S. finance in particular has rooted itself in the core functioning of the entire global economy (Panitch and Gindin 2013).

There are very real, immediately practical facts that make not only the steady functioning of capitalist growth and accumulation “necessary” from within its structures, but entrench critical dependencies on particular capitals. Hawai‘i’s occupation by the agrochemical-seed-biotech industry indicates such trappings. When certain social arrangements are outside of the scope of consideration, declarations of “no alternative” as they are applied to capital universally and within specific situations find an abundance of evidence and realism. Capitalist realism’s intersection with anti- and post-political tendencies restricts collective capacity to imagine possibilities beyond the confines of the present and is profoundly depoliticizing. The following chapter examines these matters with empirical detail at the site of Hawai‘i’s agrochemical conflict.
CHAPTER EIGHT: RESTRICTING THE POSSIBLE

This thesis now turns to map ideological-material constructions of narrowed horizons of the possible from within the site of agrochemical occupations of Hawai‘i. These unfold within the wider landscape discussed in the preceding chapter — capitalist realism, disavowal of the structural, anti-politics, atomized cynicism and individualism, and increasing inequality and precarity. With all of its specificities, the local site can be understood within these contours. Concurrently, the local site supplies empirical detail about how these wider tendencies operate within particular situations. Thus, the analysis that follows contributes to both understanding the local situation and to broader considerations of how narrowing of social possibility is made and re-made from within particular sites. This chapter first describes the origins of narratives that erupt back against the possibility of change in regards to agrochemical occupations. It then briefly outlines such narratives before turning to a fuller discussion of them through themes and arguments developed in the preceding chapter about capitalist realism, anti-politics, post-politics, and structural dependencies.

Origin of Narratives

The narratives outlined in this chapter manifest from within a site of conflict and social movement resistance. It is the conflict itself that has made the operation of ideology and the functioning of power more plainly visible. However, this is not to claim that industry and its supporters are the sole source of ideas that serve its interests — this is far from the case. Moreover, the intent here is not to categorize or dismiss the ideas below as either merely ideological or industry myths. Rather, the concern here is what makes these ideas, or at least aspects of them, function as reasonable and sometimes even common sense. The narratives identified are also entangled with critique that claims skepticism of the industry and allegiance to social justice, but perhaps counterproductively locates only imperfection and contradiction in collective struggle for social change, or impossibility in any substantial change in the social order. As such, they are fruitful spaces of investigation for the insight they provide into the depth of depoliticizing and individualizing neoliberal logic today. As will be discussed in Chapter Nine, elements of the larger ideas mapped here are also reproduced by social movements contesting agrochemical operations themselves. How this complex interlacing of ideas and structural processes come to lock-in particular situations and define the possible is the wider concern.

While acknowledging the contradictory entanglements and origins of the narratives below, it is critical to specify that their far-reaching dissemination has also been accomplished, overtly and
covertly, by way of large industry investment and coordination. Interwoven with highly coordinated lobbying and legal efforts, agrochemical companies work closely together to employ a strategic network of idea production. Embedded in an extensive international ideational production network, concerted resources are spent producing and disseminating Hawai‘i-specific narratives (as in other localities; see Schnurr 2013 and Freidburg and Horowitz 2004). To illustrate just a few mechanisms, at least 4-6 journalists, bloggers, farmers, and other people from Hawai‘i have been sponsored to participate in Cornell Alliance for Science trainings or are now associates or contractors. The Cornell Alliance for Science was launched by a Gates Foundation grant in 2014 with the stated goal to “depolarize the charged debate” about GMOs; it is called “an aggressive propaganda tool for corporate biotech and agribusiness” by Stacy Malkan (2016, n.p.). All of the individuals associated with the Alliance now blog, publish, and comment prolifically on articles in Hawai‘i and are affiliated with various industry-related groups. It appears that for at least a few this has become a full time occupation, with daily editorializing that most frequently consists of highly personalized attacks on activists. Some are also “independent experts” for GMO Answers, a website created by Ketchum PR firm and funded by the industry.

In another example, multiple original publications and organizations cross-posting media material have sprung up since 2013. With names like “Farmers & Friends,” “Family and Friends of Agriculture,” and “Kauai Farming and Jobs Coalitions,” none are forthcoming about being industry appendages but all play an integral role in dispersing its narratives. Some have their own glossy, well-funded reporting and print material. Well-established island journalists frequently publish articles sponsored by these groups in the islands’ leading newspapers. These are sometimes more subtle than blogs or direct industry PR in their narratives, but distinctly aligned in their communications. Other organizations function more like astroturf groups, appearing as broad and grassroots based, but primarily conceived and funded by industry or public relations firms. In 2014, an internal Hawai‘i Farm Bureau memo announced a USD $400,000 annual budget for “a comprehensive public relations campaign” to counter “extreme activists” with “targeted messaging delivered by print, electronic (radio, TV and internet) and social media that utilizes guerrilla marketing techniques” (Manfredi 2014, 2). Some of the new publications and astroturf groups appear to channel their funding through this Farm Bureau campaign, which was designed for, by, and with the resources of the agrochemical industry.

In essence, a small group of actors has created a communications infrastructure that appears diverse and delinked, but is actually highly deliberate and coordinated. Despite unquestionable difference between the actors that converge to implement this communications network, all are
indisputably tied to one another by actions initiated by the industry. The resources behind these efforts are vast: just on PR against Maui County’s GMO ballot initiative, Monsanto and Dow spent at least USD $10 million, more than any group or individual has spent in any Hawai’i election (Kerr 2014). While there is much more to be said about industry tactics, this thesis only touches on their messaging as part of a more general investigation of depoliticization and foreclosure of social possibility.

To identify these narratives, and the power that operates through and behind them, is not to entirely reject the aspects of critique in them that are relevant and useful. Some of these critiques are discussed further in the following chapter. Of particular challenge in this regard is the way in which important critique is appropriated by those seeking to marginalize dissent, and thus has the effect of silencing debates within a movement or forcing rigid dismissal of “industry talking points” that may include constructive elements. Thus, rather than a repudiation, the primary interest here lies in how the following narratives are constructed in ways that foreclose the possibility of politics and ultimately serve to hold in place injustice and the power of capital.

**Summary of Narratives**

Quotes and verbiage below are from blogs, opinion pieces in newspapers, social media, comments sections in online publications, public testimony (both written and oral), and county council hearings. Quotations not specified can be assumed as frequent remarks in media or other visible spaces of public conversation. The narratives identified here are amongst the most developed and extensive, and consistently appear across multiple forums. These are drawn most especially from the moment of political controversy over Kaua’i’s Bill 2491.

**“There Is No Alternative.”** Both at the local and global level, the industry presents as that which we cannot live without. Globally, feeding the world and modern society are said to be made possible through capitalist agriculture’s industrialized international productions and the agrochemical-seed-biotech industry’s products in particular. Locally in Hawai’i, the industry professes to provide irreplaceable jobs, taxes, economic “ripple effects,” investment in infrastructure, and support to small local farmers whose supply chains would “collapse” if not for their presence (Loudat and Kasturi 2013; Misalucha 2015).

Any change affecting the industry is suggested to have uncontrollable negative consequences: “Bill 2491 will destroy local agriculture,” “it will hurt farmers in poor countries” (Save Kaua’i Farms 2013), and it could “cripple” the economy. The story of looming catastrophe took vivid form in testimony against Bill 2491, speculating that the pesticide-disclosure law could lead to
hospitals and schools being forced to shut down, agricultural lands being replaced by luxury
hotels, a bankrupting of the county, and loss of individual freedom in the slippery slope of
government intrusion into the lives of farmers.

In addition to potential disaster, the impossibilities of regulation are pronounced as cemented in
law and government's irreparable incapabilities: "The same county [will enforce 2491] that can't
seem to keep the bus stops with garbage cans, sidewalks clear of bushes or a handful of public
bathrooms clean" (anonymous online comments in The Garden Island Newspaper); "No
legitimate objective will be realized" (chemical company attorneys); "[Bill 2491 has done] absolutely nothing. It has got us in court and a huge attorney bill" (Kaua'i County Council
member). A range of regulatory initiatives are categorically lumped together as hopeless: "bad
bill," "flawed measure," "administrative nightmare." Even if one wanted to do something about
the local impacts of mega-corporations, they are too big, too powerful, and everything is
hopelessly corrupted beyond being able to challenge them. In the end, they will just sue, casting
further burden upon struggling taxpayers.

"Politics are Disrupting Aloha." Division, disruption, and ignorant public “hysteria” is said to
be the fault of those engaging in “deliberate fear-mongering” and “manipulation…to advance a
political agenda” (Conrow 2014a, n.p.). A “radical minority taking over” is blamed for “dividing
the community” and destroying the islands’ “spirit of aloha” (Take Back Kauai Facebook group;
No GMO Means No Aloha 2014). Erosion of virtue, violence, and juvenility are associated with
the “No GMO = No Aloha movement,” including frequent reference to “mobs” and behaviors
described as “rude,” “threatening,” “temper tantrums,” “rabid,” “vandals,” “spoiled brats,” “yelling
and screaming,” “obnoxious,” “immature,” and “low-level discourse” (Eagle 2014, n.p.; Kamiya
2014, n.p.; Conrow 2014e, n.p.). In particular, “outsiders” or “newbies” with a “cynical agenda”
are accused of driving division and politics (Kester 2014, n.p.; GogoGMO 2013, n.p.). Leading
newspapers headline the “wealthy mainland philanthropists” purportedly “underwriting” the “anti-
GMO” movement (DePledge 2014, n.p.; Hofschneider and Grube 2014, n.p.). Blogs and letters
to the editor repeatedly tie the movement to people owning “natural food stores,” the “organics
industry,” and “[those] who profit by spreading misinformation and fear” (Conrow 2014d, n.p.).
Speculations about ulterior motivations of movement leaders, politicians, and outside
organizations widely circulate on the internet and in island gossip.

In the controversy, the interests of workers, the industry, and the island as a whole are made
synonymous and united in a narrative of victimhood in the “war without evidence” by those
engaged in “group think totalitarianism” (Conrow 2014d, n.p.). “We fight for our friends, we fight
for our jobs, we fight for our families, *we fight for our way of life* proclaims a youtube video populated by images of working-class locals and their families (Save Kaua‘i Farms 2013).

“Overcoming Politics and Hysteria.” While agrochemical-seed-biotech corporations and their local operations are continually formulated as simply necessary (or at minimum, inevitable), concerns about their environmental and health consequences are disparaged as having no basis in fact or science, driven instead by emotion, fear, and politics (Von Mogel 2013). In contrast, the industry claims to offer a “science-based perspective.” A broad and heterogenous range of concerns are lumped into a singular and monolithic “scourge of paranoia,” comprised of subjects that warrant the unsavory characterizations of hysterical, fanatical, Luddite, paranoid, delusional, and conspiracy theorist (Conrow 2014a and 2015a; Harmon 2014; Kamiya 2014; Kloor 2012). Anecdotal evidence of harm is said to be nothing more than a “scare tactic,” while citizens are incapable of literacy beyond “selected beliefs as claimed in Google searches” (KauaiEclectic blog comments). Casting certain affairs into the realm of the “complicated,” lay voices are said to be ignorant and uneducated, and only those with specialized “expertise” are assumed to possess valid knowledge.

As activists are repudiated as perpetrators of divisiveness and makers of myth, the industry claims desire for collaboration and the expert knowledge to bring life back into unified harmony. In constructing their unity with a wider undifferentiated public, industry describes itself as “neighbors,” “part of the local community,” “just people” who have “worked the land for many generations” (Save Kaua‘i Farms 2013). Images of local workers examining beautiful stalks of corn and children playing at industry sponsored events come to represent Dow, DuPont, and Monsanto themselves. A perception of equality and openness is manufactured with invitations to “come see our farms” and “get educated about what we do.”

Calls for “common middle ground” appear most sensible: “through cooperation among government, community and the growers” (Kester 2014, n.p.), “nonpolitical” and “science-based solutions” can be reached. Such solutions are said to lie in voluntary action, better “education” of the public, “neutral fact finding” involving “stakeholders” and “community mediators” that can discover and manage “the truth” of the situation “without politics” (County of Kaua‘i Resolution 2013-72). The restoration of harmony, aloha, and local ways and values will be realized by expunging politics and rabble-rousers:

Many of the anti GMO folks are using the bill as a cause of strife to drive out the corn companies. Their anger and hysteria are causing a great erosion of our aloha spirit. We
have a duty to protect and nurture our aloha spirit, so we hope that you will help to restore the Hawaiian value of *Lokahi*: unity and harmony, by working cooperatively toward agreement instead of litigation. (Public testimony, Bill 2491)

**Agrochemical Realisms**

When Hawai‘i sugar baron Samuel Castle responded to critics of the contract labor system as “striking a serious blow at every interest in the country” (1869, 3), he gave clear illustration of mechanisms by which capitalist injustice is constructed as inevitable. Indeed, by certain indicators it was true, as a 1905 Congressional study remarked, that “directly or indirectly, all individuals in the Territory of Hawaii are ultimately dependent upon the sugar industry” (in Baker 1911, 28). The fundamental question too often unasked, and always easier to ask of the past than of the present, are the means by which dependence on not only the plantation economy but to the plantation oligarchy was manufactured, sustained, and tangled-up in ways that gave the appearance of indistinguishability between common goods and select private interests.

Today, most Hawai‘i residents, from the lowest-paid hotel cleaners to oligarch-descendant landowners collecting rents on oceanfront properties, are reliant on the steady flow of millions of visitors annually. Equally, it is well understood that Hawai‘i’s model of corporate tourism creates incredible vulnerabilities and that an economy that offers low paying jobs but drives up the cost of living has resulted in high rates of poverty, homelessness, and displacement from the islands (US Census Bureau 2010; Witeck 2001; Kelly 1994; Aoudé 1993). The compulsions of endless development and rural gentrification, and the huge sacrifices made to the environment and valued “island lifestyle,” are widely lamented facts even amongst those who benefit financially.

In a severely narrowed discourse of social possibility, the solutions to such systemic problems are most typically presented as better planning and creation of niche tourism markets, while the search for “economic diversification” remains ongoing, dominantly defined as facilitating new forms of overseas capital (CEDS 2010). From within this extremely limited horizon of possibility, agrochemical operations appear as a welcome diversification, a contribution to the economy that cannot be sacrificed, and the most important preserver of agriculture in its loss to development. As previous head of the State Department of Agriculture Russel Kokubun put it, the plantations left a huge void to which the seed industry provided an alternative: “It’s created an opportunity to view agriculture as a viable industry” (Voosen 2011, n.p.).

The dominant narrative that agrochemical companies have spared farmland and livelihoods assumes as immutable the social arrangements that give shape to Hawai‘i’s monoeconomy and
make transnational corporate agribusiness the most viable addition. Beyond wider relations of capital and empire, such arrangements include numerous forms of local public subsidy that exacerbate and extend capitalism’s general privatization of benefits and socialization of costs. The local and global conditions that give rise to the agrochemical industry and its occupation of Hawai‘i are invisibilized or taken for granted. As arrangements at all scales that could be different are obfuscated, what corporate agribusiness systematically supplants and precludes is clouded or naturalized, most typically as the force of “the market.” Moreover, in today’s tales of a plantation past as evidence of the need for “Big Ag,” a selective history neglects the direct marginalization and often violent displacement of alternatives, including the near entire devotion of natural resources and government treasury to very particular business interests.

As this history repeats in corporate tourism and chemical companies, desires for something other are treated as naive misunderstanding of constraints. Material limitations from within the conditions of the present are taken to represent the entirety of possibility, guarded as evidence of the immutability of the situation. An endless list of particular realisms — state tax dependencies, a shortage of public funds, a population lacking the skills for preferred economies — all come to stand in for the whole and draw attention away from the active reproduction of the very structural limitations that give testimony to non-possibility. In what Giroux describes as a “discourse of disconnection,” issues are fragmented and treated as isolated dilemmas, narrowing collective capacity to perceive and respond to structurally and ideologically inseparable socio-economic-cultural problems (2014, 65). In this regard, dominant ideas of necessity and inevitability are accurate — it is true that only very particular forms of capitalist agribusiness can outcompete other capitalist agribusiness within particular market arrangements. It is taken to be true that only this form will sustain local livelihoods, infrastructures, and agricultural lands when treated as a single issue detached from other systemic features that must also be changed.

For purposes of analysis, it is useful to detail constructions of realism and no alternative around the specific example of “Big Ag” being necessary to sustain local and “Small Ag.” Agrochemical operations are described as the “anchor” of all agricultural potential in the islands (Misalucha 2015). Evidence for such a claim is taken from the fact of their large leases on agricultural lands that keep such lands from potentially being used for other purposes, their subleases to local farmers, their contributions to maintaining irrigation and other infrastructures in places like West Kaua‘i, the scale of their purchases of agricultural products that stimulate local markets upon which other farmers depend, and their funding of agricultural scholarships and institutions (Hervey 2012; Gordines 2013).
To detail one of these examples, with the demise of sugar plantation irrigation infrastructures were largely abandoned, idled, and left to deteriorate. Antiquated, damaged, overgrown systems are badly in need of safe dismantling, repair, or technology update (Wilcox 1998; Brower 2010). Many of the most powerful voices from within agricultural institutions consider large agribusiness that can replicate plantation management to be the most favorable or only available option for keeping certain systems maintained for agriculture. Some of these people have worked for decades to ensure that systems can be used by local farmers and ranchers, and many have grown cynical about government support and leadership. Agrochemical companies are viewed as capital-intensive operations that can maintain irrigation systems for smaller farmers and local food production.

The case is similar with the issue of land subleases made to small farmers by the agrochemical industry. Access to affordable long-term land leases is a most substantial barrier to local food production in the islands. Reasons include interrelated factors of consolidated land control, highly inflated land costs, speculation and development, land use and zoning laws, and state land leases that go to the highest bidder — in short, poorly-regulated capitalist markets in land and a history of concentrated ownership (Brower 2010). The intention here is not to detail core problems or what could be changed, or to suggest that those who are “realistic” about options immediately available within the confines of the present are simply thinking “too small.” Rather, what is being indicated are situations that are both complex and difficult to challenge, as well as completely interwoven with the compulsions of global capital to which local “solutions” are in short supply. From within these confines, many things appear immutable, and agrochemical offerings necessary or a best alternative.

It is helpful to delineate layers of “realism” that operate for clearer insight into constructions of possibility. Some realisms are pervasive, largely invisible, and are also partly reproduced by those who seek to challenge the existing order of agrochemical occupations. For example, the arrangements of capital and imperialism that shape the global corporate food system are typically naturalized as “the market” and “just the way things are.” It is hardly considered that fundamental alternatives grounded in the struggle of global social movements could exist. This is the depth of capitalist realism discussed earlier.

At a more superficial level, realism dismisses even immediately available, relatively straightforward and “politically acceptable” possibilities for a more ecologically regenerative local agricultural economy that supplies decent livelihoods. Some examples that circulate in
mainstream public discourse include making public lands and subsidy supports available to local growers, shifting public university research funding in ways that enhance agroecological food production and farmer education, policies to assist and incentivize workers cooperatives, changing or enforcing existing land and water use policy, raising the minimum wage, and strengthening labor protection laws. Such options, and many others, are frequently cited as too difficult, doomed to fail, potentially causing some unforeseen problem, or some other instantiation of “not possible.” To this can be added the pitched fatalism around a pesticide disclosure bill that supposedly the county would be utterly incapable of enforcing, would be an opening for government intrusion into personal liberties, and might cause economic collapse. Unraveling deeper and wider capitalist realism takes also confronting some of these seemingly lesser, cynical realisms that are undergirded by neoliberal rationality of what is possible, what is natural, and what the best way to organize society is.

What also requires briefly extricating from constructions of inevitability in Hawai‘i’s agrochemical conflict is the global context by which consolidated corporate agribusiness and its attendant capitalist processes are continually reformulated as imperative to feeding the world and making modern society possible. There is a sense that one does not have to “like” the consequences of a corporate capitalist food system, but society cannot live without it (Fisher 2009). Fundamental to such logic are ideologies of agricultural productivity and social progress, originating especially in the justification of enclosure of common lands across England and elsewhere as a transformation of “waste” into “improved” land. The “improvement” literature that emerged in the seventeenth century focused especially on peasant evictions and the commercialization of agriculture as necessary to the process of modernization and increasing grain yields, thus purportedly contributing to the common good (Ross 1998; Wood 2002). As described in Chapter Three, such rationality vindicated colonial endeavors and persisted in Hawai‘i’s plantation development and capitalist enclosures 150 years ago. Only slightly repackaged today, the restructuring of the food system towards increased financialization, privatization, corporatization, and industrialization takes place within a moral discourse of increasing grain yields to “feed the world,” while neoliberalism has made synonymous “social progress” and private sector technological change (Newfield 2008). The agricultural biotechnology project is wholly immersed in such constructions of solving hunger through capitalist markets, innovations, and technologies.

As a space central to development of such technologies, Hawai‘i is imagined as playing a virtuous role in feeding the world.
If Monsanto is pushed off this island…it will affect people here, and around the globe. This company discovers more productive ways to grow healthy crops from the rich, fertile soils in Iowa to the hard-baked lands of South Africa. Monsanto seeds survive droughts and hardships to feed multitudes. For me personally, I will lose a job I feel has allowed me to impact the world for good, and helped me to ease the suffering of many people.

(Monsanto nursery supervisor, in Stoltzfus 2014, n.p.)

In Hawai‘i, as elsewhere, “privileged” and “well-fed” activists are accused of being implicated in the starvation and death of poor people in the third world (see also Chopra 2015). The invocation of morality in this context works to silence debate, while the ideological hegemony of a particular capitalist trajectory of progress and productivity makes it “difficult to muster the discursive resources to challenge them” (McAfee 2003, 215). The critique here is not of productivity or technological innovation in their own right, but what is justified or neglected by such logic as it operates with regard to capital. As an extensive literature has shown, many of the very projects purportedly aiming to increase agricultural productivity and innovation — from land grabs, to “free trade,” to seed patents — are directly implicated in the causes of global hunger and are more fundamentally about privatization, commodification, and capital accumulation (De Schutter 2010 and 2011b; Magdoff, Foster and Buttel 2000; Lawrence, Lyons and Wallington 2010; Holt-Gimenez and Patel 2012).

Anti-Politics

As discussed in the previous chapter, disavowal of the structural and the narrowing of what it means to be “realistic” is attended by a high degree of suspicion or outright rejection of collective political engagement, especially as it aims to change the state towards redistributing capital’s benefits and burdens. Neoliberalism’s emphasis on the individual and hostility towards collective action makes self-evident the reprehensibility of activist “mobs,” their “divisive” behavior and self-serving agendas. The ethos of individualism is not only a barrier to collective action, it disparages it. Rather than the historical force necessary to social change and justice (Zinn 1980), social movements, like any other collective subject, are messy, contradictory, populated by objectionable characters, and prone to the “totalitarianism” of “group think” (Conrow 2014d).

Encouraging people to join together in a rally on the opening day of the State Capitol, the Kaua‘i council member who introduced Bill 2491 posted a blog site titled “A Million Little Fists”: 
A million little fists waving in unison can have a huge impact. Keep it waving. When you get tired of waving, pound it against governments door. Pound it in the face of corporate greed and abuse. A million fists pounding on government’s door and in the face of corporate greed and abuse can perhaps change the world. (Hooser 2013a, n.p.)

Following the blog post, “fistee” was made into an indictment of “jackboot mentality,” with frequent disparaging references to “the fistees.” Comments in social media make declarations like, “I’m no fistee, but I think the chemical companies are criminals,” or similar rejections of being identified with a collective but sharing the sentiments of its political mobilization. Such statements express both repudiation of collective political action, as well as a desire to avoid an unsavory group categorization that might hijack one’s individuality.

In the renouncement of activist mobs and their “group think,” complex entanglements of diverse and contradictory subjectivities and ideas are treated as monoliths. The dynamic and disparate singularities that join in mobilization of collective political aims are reduced to their most objectionable characters. In Hawai‘i’s movement challenging the agrochemical industry, conspiracy theory, chem-trails, and reactionary fringes come to stand in for the whole. To be clear, the point is not to gloss over real problems, inconsistencies, or less-than-liberatory threads that circulate around and within the movement. The concern here is how such elements come to characterize and substitute for a complex collective mobilization. Rather than “recognizing, respecting and amplifying” liberatory aspirations within such movements (Goldstein 2013, 32), the focus is on innate imperfections, contradictions of collectivity, and the worst excesses of “political being-together” (Rancière 2004b, 137–8).

Of course, selective or distorted focus on the most fringe and objectionable happenings or characters within a movement is a classic strategy of vilification and marginalization, also connected with media sensationalism. To give just a few examples, during and following Kaua‘i’s Bill 2491 much was made of activists’ “attacking workers.” This appeared to be more of a practiced accusation emanating from companies than a dynamic that was actually present. Similarly, during the 2014 elections, occurrence of destroyed candidate signs was held as affirmation of the “ugliness” and “hostility” of the “anti-GMO” movement, though there was no evidence of who the “vandals” actually were (Eagle 2014). Most generally, repudiations of activists are based almost entirely on Facebook discussions between small groups of people. Such events are almost always emphasized by the industry, blogs, and astroturf groups, before being adopted in wider public discourse. The verbiage of this popular blogger, who also has a contract with Cornell Alliance for Science, has become widespread:
Their [activist] comments, though distasteful to thoughtful, intelligent readers, speak volumes about their immaturity, their unwillingness to accept facts, their dogmatism, their speculation and ignorance and their sheer nastiness. This is the core of the anti-AG/anti-GMO movement, in all its ugliness revealed. (Conrow 2015a, n.p.)

What is most repudiated is that which is tagged unruly and disruptive, or outside of the boundaries of proper participation in institutional politics (Khanna 2012). In one example, during an important county council meeting over Bill 2491 a few young activists stood up angrily and left the room in protest, making loud comments of dissent as they exited. Two years later, tales of their disrespect, juvenility, and temper tantrum continue to be referenced frequently in characterization of the movement. During and following deliberations over Bill 2491, division, confrontation, and never actually occurring violence were more discussed in media than the policy debate. The “problem” was increasingly recast as controversy itself. Generally, there is strong disapproval in Hawai’i for what is interpreted as stirring disagreement. Rather than bringing to light the conflict that already exists in the social order, activists are seen as the originators of conflict themselves.

Denouncement of the unruly behavior of mobs is predictable in media coverage of any protest or other collective political action (Graeber 2013). Of course, such marginalization is also not unique to this moment of history. The casting of not only particular tactics, but collective disruption in general, to the terrain of “unauthorized violence” (Swyngedouw 2010, 227) negates the very structural violence that such forms typically draw attention to. It is also ignorance of the historical fact that “when justice comes and when injustices are remedied, they’re not remedied by the initiative of the national government or the politicians. They only respond to the power of social movements” (Zinn 2012; 293). In today’s rejection of collective political engagement, social movements of the past are cast as respectable and necessary, while those of today are treated as if they have taken a fundamentally different, objectionable course. As David Wong remarks in his article “5 Ways Powerful People Trick You Into Hating Protesters”: “…while deriding every single African American activist or cause, insist that you’d have been marching right alongside MLK if you’d been around in the 1960s. You know, back when the movement was respectable” (2015, n.p.).

The recasting of history and the role of social movements take a specific local form. The central importance of militant labor, anti-colonial, anti-development, and anti-military struggle to Hawai’i’s past and present are erased in condemnation of political action that is not “local
style” (Horne 2011; Silva 2004; Goodyear-Ka’ōpua, Hussey and Wright 2014; Kent 1993; Beechert 1985). This takes place in celebration of a supposedly more harmonious multicultural post-statehood, post-oligarchical “era of consensus” (Kent 1993, 122). Resistance is said to belong to the days “when vicious plantation lunas [were] on the prowl, non-whites couldn’t vote, U.S. naval officers lynched Hawaiian men” (Isaki 2010, 11). In today’s era of consensus, resistance is no longer appropriate. An article in the publication Farmers & Friends exemplifies this narration of a consensual post-political moment in history, and its troublesome disruption by activists:

Not so long ago, progressives in Hawaii’i believed in progress. They thought that innovation boosted the human prospect. Call it the “Burns Years,” post-statehood. There was a lively sense that Hawaii’i’s people could accomplish great things as they shed the plantation era yoke of “subtle inferiority.” As equality took root, an easygoing collaborative style blossomed. It tasked the Democratic Party to develop a new, diversified economy … People might disagree – and often did – but it was understood that bad blood was bad manners. People knew when to say, “Eh, no act, brah.”

Now, a new variety of progressive politics has seized Hawaii’i. It is confrontational and employs the organizing logic of California-style initiatives. Sign up like-minded true believers on Facebook and storm city hall with legions of testifiers. Its energy is self-replicating and it is enjoying a heyday…Rather than sort through our differences via dialogue, real fact-finding and problem-solving, we are playing guerrilla theater war games. (Flynn 2014, n.p.)

The charge of “no aloha” is central to these criticisms of the GMO Ground Zero Movement. A campaign “Aole GMO Means Aole Aloha,” which translates roughly to “being against GMO means having no aloha,” states the mission of “not letting local ways get overtaken” (Aole GMO 2014, n.p.). Following an eruption of “no aloha” rhetoric, a Sunday special to Kauai’i’s newspaper asked the question “Adios to Aloha?,” equating controversy around Bill 2491 to a potential “loss” of the character “that expresses the charms, warmth and sincerity of Hawaii’i’s people” (The Garden Island 2013, n.p.). Discourse around “aloha” has a long historical relationship to the discouragement of dissent, most especially of Hawaiian nationalist movements (Ohnuma 2008). Most generally, the discourse of aloha is a vehicle by which the personal comes to substitute for the political. In hegemonic advocacy for “aloha spirit,” attention is deflected away from anger over inequality and injustice, towards one’s internal feelings about it (ibid, 388). When activists are chastised for being “no aloha,” they are being both reprimanded
for breaching a moral code of behavior, and being instructed to change their individualized feelings about a social situation.

Related to the local denunciation of “no aloha” and following liberalism, neoliberal ideology celebrates replacement of political engagement with “looking within” to change individual consciousness and lifestyle. Written by a critic of the movement:

We can't blame government, or even corporations, because they are merely a reflection of us. We've created them through our belief systems, our voting, our consuming and lifestyle choices. Nor can we expect those entities to fix anything for us. We've got to engage in the hard, dirty work of consciousness change ourselves. (Conrow 2014b, n.p.)

By such logic, there is no social structure, no power imbalance in the existing order that must be challenged; rather, there are only individuals who are all complicit in societies’ ills.

Collectivity and human solidarity are unintelligible in the logic of this individualism — some form of self-interest inevitably exists. By such rationale, activists must be driven by self-gain, a desire for conflict, by “personal ideology,” or by some hidden agenda. Activists themselves frequently denounce “activism” in attempt to distance themselves from such characterizations. In such context of strong suspicion of activism, politics, and collective struggle industry smear campaigns targeted at individuals find enthusiastic audiences and have widespread effect in marginalizing, silencing, and depoliticizing. Collective political goals are made personal in what becomes an ultimate distraction.

Organizations in Hawai‘i, some part of larger national organizations, similarly face widespread allegations of: “hidden agendas of wealthy outside philanthropists,” “intruding in local politics,” disguising an “industry versus industry battle,” being financed by real estate agents with cynical motivations, “hijacking” the environmental movement, and “well-funded campaigns of misinformation” (Hofschneider and Grube 2014; DePledge 2014; Manfredi 2014; Conrow 2015b). Several blogs and news articles in Hawai‘i have given extensive coverage to “following the money” in the “anti-GMO” movement (Hofschneider and Grube 2014; DePledge 2014; Entine 2013; Kamiya 2013; Conrow 2014c; Farmers4Choice Facebook group). Such discourses reduce a diverse and broad social movement to the activities of a handful of organizations. Moreover, the magnified attention on organizations’ funding obscures extreme difference in proportionality of resources. Contradictorily, and revealing of general consent towards capital, it
is largely assumed that industry will spend tens of millions on political campaigns, propaganda, and lobbyists.

As above, these discourses are especially sown by industry. It is a well-rehearsed corporate tactic to “diminish moral authority” of “opposition” and foster public distrust of “political agendas” by targeting “wealthy do-gooder, left-wing” organizations and their funders (Berman 2014, n.p.). Recently the extensiveness of these corporate campaigns has been revealed in issues like the Keystone pipeline, climate change, fracking, reproductive rights, and animal rights (Berman 2014; TransCanada 2014). The intention here is not to dismiss the wide-ranging and deleterious impacts of funding structures and the “non-profit industrial complex” on “the practice and imagination of the political left” (Incite! 2007, n.p.). Activists face real structural challenges and contradictions in trying to establish sustaining modes of organization that can carry them forward, part of the “crisis of reproduction” of social movements (Haiven and Khasnabish 2014, 94). Rather, what is being indicated is the cynicism that is nurtured around “special interest groups” that are “presumed by definition to have an interest opposed to that of the public” (Graeber 2007, 403).

When wealthy organizations and group think “fistees” have colonized the streets and chambers of governments, corporations become victims. Just as Chevron is being “bullied” without “fair hearing in a world brainwashed by environmentalist propaganda” (Wong 2015; n.p.), and the tobacco industry is in “class warfare” and it is the “underclass” (Oreskes and Conway 2010), chemical corporations are “under attack” by “extremist activists” (Manfredi 2014, 1). As written by an industry attorney when filing a lawsuit against the County of Kaua’i:

Bill 2491 is simply hodge-podge legislation, linked only by the fevered imagination of self-proclaimed environmental activists… No legitimate objective will be realized by the forced public disclosures under the ordinance, only the illegitimate targeting of GMO crops by vandals and eco-terrorists. (D’Angelo 2014a, n.p.)

In their victimhood, it is often not chemical corporations that are framed as the targets, but rather, workers and their families, farmers, ranchers, agriculture as a whole, and a local “way of life” (YouTube, Save Kaua’i Farms 2013). Moreover, “attacks” on corporations are attacks on hungry people in the third world, modern society, progress, the market, science, and intellect itself (Manfredi 2014; see also Dibden, Gibbs and Cocklin 2013). The Hawai’i Farm Bureau warns its members:
Across the nation, farmers and ranchers have been caught off guard by the extremist activists that will stop at nothing to realize their utopian, misinformed and unsustainable visions of how you should farm... farmers and ranchers are demonized to the point where young people are further dissuaded from entering careers in agriculture — while activists selfishly attempt to advance their own agendas and political careers. … these efforts are aimed at driving modern production agriculture out of business… if successful [they] would destroy more than two centuries of evolution in agriculture practices in Hawaii… Its success would cause the collapse of agriculture in Hawai‘i and have reaching impacts beyond our shores… food and energy prices would negatively impacted worldwide. (Manfredi 2014, 2-3)

Political conflict and “attack” of agriculture, farmers, workers, and “local way of life” is attributed especially to “non-locals.” Alicia Maluafiti, lobbyist for the pesticide trade organization CropLife America, summarized this narrative well in statements that proponents of pesticide buffer zones around schools are “21st Century missionaries,” now in the form of “mainland activists… trying to save us from ourselves” (Eagle 2016, n.p.).

The identity “local” emerged in Hawai‘i out of a shared experience of Asian oppression on the plantations and in opposition to the haole elite. In the 1970s, “local” became an important stance of resistance to development (Fujikane and Okamura 2008), an attempt to “retain or to regain control of the social, economic, and political future of Hawai‘i from various outsiders who are believed to be leading Hawai‘i irreversibly in a direction it should not go” (Okamura 1980, 137). While originating in class struggle and opposition to white racism and foreign capital (Isaki 2008), the “local” tends to conceal ways in which both haole and local elite secure their interests with, through, and alongside “external forces” of global capital and American empire (Ohnuma 2002). As Bianca Isaki writes, attention must be paid to “the ways that modes and histories of resistance become vehicles for an updated U.S. neoliberal hegemony” (2008, 11). While the “local” is an “ongoing project” perhaps still containing decolonial potentials (Isaki 2011, 86), in dominant discourse around agrochemical operations it has “become a cipher for new conservative impulses” (Isaki 2008, 139), serving to mask power and structural injustice, subvert resistance, and fuel divisions between potential allies. Today’s sentiments against “non-local” activists and “outsiders” influencing “our way of life” (Save Kaua‘i Farms 2013, n.p.) also tap into reaction to hardships under neoliberalism, and increasing migration of white people from the continental U.S. alongside displacement of multi-generational brown and indigenous people from the islands.
Entwined with the rejection of politics and activism (and their arrival with “outsiders”) is provocation of anti-government and anti-regulation sentiment. The following quotes, taken from public testimony against Bill 2491, serve to summarize strong themes:

There is enough government oversight. We do not need the county’s involvement and another layer of regulations. I cannot imagine a department of our county government overseeing the pesticide educational and regulatory program and the funding this would require.

You will destroy a viable agricultural community that contributes millions of dollars to the economy of Kaua‘i and you will have to create a huge government bureaucracy just to enforce this bill at great taxpayer expense should it become law.

Bill 2491 is ready-fire-aim government at its worst.

**Getting Past Division and Politics**

Against division, controversy, and the harmful impositions of regulators, are calls for consensus, middle-ground, and working together. The intention in what follows is not to dismiss desires for harmony, collaboration, and finding more amiable ways to live together. It is also not to neglect that sometimes positive social change unfolds partly through projects that are framed around post-political notions, or that these discourses can at times be utilized for a progressive politics. Moreover, it cannot be ignored that the types of division that erupt around issues, including agrochemical occupations, can be contrary to goals of social justice as discussed in further detail in Chapter Nine. The critique here is instead aimed at the ways in which the idea of consensus politics and the presentation of unity work to obscure division already existing in the social order and depoliticize, i.e. function as “the annulment of dissensus” (Rancière 2010a, 42). As Diken and Laustsen contend, “Politics … is the ability to debate, question and renew the fundament on which political struggle unfolds, the ability to radically criticize a given order and to fight for a new and better one. In a nutshell, then, politics necessitates accepting conflict” (2004, quoted in Swyngedouw 2007, 25). Disavowing political conflict is “violent” in its performance of “radical closure” (Swyngedouw 2009, 604) of challenges to structures of inequality and exploitation.

The operation of anti-antagonistic ideology negates disparity in interests; it is the appearance of non-difference between the worker, the impacted resident, the local landowner, and the chemical corporation. The presentation of unity denies “recognition of conflict as constitutive of
the social condition” (Swyngedouw 2009, 616), and places those who are structurally at the top of social hierarchy in the same plane as those who are at the bottom. It is a “mode of the partition of the sensible that recognizes neither lack nor supplement” (Rancière 2000, 124), and instead is a performance of false suturation. “We’re in this together” proclaim chemical corporations (Save Kaua’i Farms 2013, n.p.), in a count of unity that necessarily excludes (Badiou 2005).

The “undifferentiated moral and technocratic discourse” of global sustainability (Taylor 1997, 163) that is the agrochemical-seed-biotech industry’s pretext — “We face daunting challenges in feeding the world today...DuPont and its collaborators has already made great strides in meeting the challenge...Because, quite simply, feeding the world is everyone’s business” (DuPont 2016, n.p) — is matched locally by their communitarian voluntarism. Agrochemical companies claim, “We value the island, raise our families here and want to preserve the land and lifestyle for future generations. We’re in this together. Kaua’i is our home” (Save Kaua’i Farms 2013). The target of concern — “daunting challenges,” hunger, “preserving” land and lifestyle — is “continuously externalized and disembodied” (Swyngedouw 2009, 213). The “enemy” is vague, not something that can be named and counted.

A strictly populist politics emerges here, one that elevates the interest of an imaginary ‘the people’, ‘nature’ or ‘the environment’ to the level of the universal rather than opening spaces that permit the universalizing of the claims of particular socio-natures, environments or social groups or classes. (Swyngedouw 2009, 213)

In this suturation, corporations are personified as people, with thoughts, desires, and morals, delinking them from the structures to which they are bound. Chemical companies speak either as if they are living, caring entities themselves, or are reduced to embodiment in the individual “good people” (Stoltzfus 2014, n.p.) that work for them.

The presentation of unity is particularly marked in the notion of a singular “local agricultural community” that requests the public’s undivided and unquestioning support of “agriculture” (Family and Friends of Agriculture 2015; see also Hawai’i Farm Bureau Federation 2016, Farmers & Friends 2014, Save Kaua’i Farms 2013). From an imaginary of a homogenous “voice... of working farmers of Hawaii” (Farmers & Friends 2014, n.p.), that which raises questions and negations (Badiou 2005) is guilty of attacking farmers, being anti-agriculture, or simply lacking in literacy (Rancière 1991 and 2010b). The operation works to obscure inequality, while simultaneously coding those who speak to fundamental division as the cause of such
division (thus also recasting division elsewhere, outside of the structural and into the personal). It is a view of singularity that is “radically conservative and reactionary” (Swyngedouw 2009, 611). Structures of inequality are flattened in the presentation of a “diverse” but aligned “agricultural community” (Hawai‘i Farm Bureau Federation 2016, n.p.).

In these unifying frames that necessarily exclude and fragment, local partnerships and “coexistence” come to stand in for the universal of global dispossession, exploitation, and difference. Such presentation refuses recognition of the processes by which agrochemical-seed-biotech corporations are made — and made extremely powerful and wealthy — to be the same processes by which equitable food production and distribution is made impossible. The disembedding of the particular from the universal allows for a presentation of the possibility of localized consensus and “working together” that obscures how situations of inequality and displacement are sustained. Laments that local farmers cannot compete with cheap global imports are entirely divorced from the role that transnational agribusiness plays in mediating such an arrangement. Instead, corporate agribusiness becomes the local saving grace for their charity to niche local food markets. Similarly, migrants displaced from their homes by the capitalist corporate food system are equal parts in a “local agricultural community,” said to be most grateful for their jobs from chemical corporations. How they arrived at such a position relative to arrangements advanced by the same corporations is a link that remains outside of view.

These “together” count-as-one (Badiou 2005) operations especially employ the language of non-exclusion. The state’s hosting of an agricultural policy conference sponsored by Monsanto, Dow, and Coca-Cola is in support of “all agriculture,” a non-exclusion that necessarily excludes (NASDA 2015). Everything must be “supported” because “we are in this together,” and only “together” are “win-win” arrangements possible (Save Kaua‘i Farms 2013; Kaua‘i Mayor Bernard Carvalho in Cocke 2013d). To object to some element in the counted one of “local agriculture” is to be an enemy of inclusion, coexistence, harmony, and collaboration. To raise the inexistent — the already excluded, the divisions, structural inequalities, and universals — is to betray “Island-style…in this together” (Farmers & Friends 2014, n.p.).

With appeal to “working together” and “unity,” and from a backdrop of realism, inevitability, and hostility of the political, industry’s version of “consensus” is proclaimed the way forward. As the chemical companies sue the County of Kaua‘i over Bill 2491 to block its implementation, their participation in the voluntary Kaua‘i Good Neighbor Program is hailed as evidence of their “spirit of collaboration” (Nagaoka 2014, n.p.). Syngenta assures, “the fact that we are doing this on a
voluntary basis underscores our commitment to transparency and keeping the community informed” (Phillipson 2015, 1). Despite clear differences between laws that have been passed by county governments and the voluntary Good Neighbor Program (see Chapter Six), it is consistently referenced as evidence of why democratically deliberated regulatory action is unnecessary and what course should be followed in its place.

Given chemical companies’ legal successes thus far blocking regulatory action, the voluntary program has in fact provided some of the most important currently available information about the volume and types of pesticides being used. With lack of any other pesticide disclosure except through a lawsuit and a single Freedom of Information Act request, it has been a critical source of data. Though disclosure remains incomplete, the voluntary reporting has come to stand in for the solution and correct course of action. This is not uncontested, with activists using the program’s data itself to argue the need for further information and actual regulation. However, there is a strong appeal of amiable voluntarism in today’s political environment.

In this appeal, there is critical interplay between “the impossible,” and capital’s utopian promises of harmony and expert management in “our” best interests as everything naturally progresses towards better ends without meaningful change in the social order. The intertwining operation of these ideas was marked in the position of the Mayor of Kaua‘i, who vetoed Bill 2491 on the grounds that: 1) the chemical companies should not be antagonized because the island depends on them for jobs and agriculture; and 2) the threat of lawsuit indicates the impossibility of regulatory action in the first place; so 3) the preferable (and only) option is to work with the industry to find “common ground” through a voluntary solution involving all “stakeholders” that will “neutrally” implement the “facts” (see press releases and newspaper articles following the veto of 2491, court ruling, and implementation of the Good Neighbor Program). The chemical companies’ triumphs in court thus far have been the vindication of this line of reasoning, and of the Mayor himself. As he told the press following the U.S. District Court’s ruling, “the county could have avoided the $175,000 court case if state, county and various stakeholders had come together” (Hofschneider 2014a, n.p.).

In 2015, following major struggles at the State Capitol over proposed pesticide regulations (none of which passed), there was a push to extend voluntary pesticide reporting statewide. The potential program is being designed by industry and the State’s Department of Agriculture, whose Director Scott Enright states that “we have been listening to the communities” while simultaneously categorically dismissing all concerns as “not the case” (Hofschneider 2015c, n.p.). Congruent with industry, the Department has lobbied extensively against proposed
regulations as they move to implement a voluntary program. Instead of democratic deliberation, industry and the state vow to “share” what they have decided “once we have something in place” that will especially include expanding “our education and outreach efforts to ensure the public that we are using the most updated farm stewardship practices to care for the health of our neighbors, communities and our land” (ibid, n.p.). Always held in tandem in this industry-state discourse is disregard for oppositional concerns, with willingness to dictate the non-transparent and non-democratic consensual solution to such concerns. Making the public more literate to industry “facts” is typically part of these solutions. In essence, the position posits that the illiteracy of the masses requires the termination of democracy to capital-state decisions and proper education (see Daellenbach 2015).

Voluntarism is a well-defined characteristic of neoliberalism, as well as a strategy commonly employed to avoid regulation. As McCarthy and Prudham describe:

State functions aimed at curbing socially and environmentally destructive effects of capitalist production are ‘rolled’ back… ‘restructured’ in a variety of ways, including… shifts from binding to increasingly voluntarist, neo-corporatist regulatory frameworks involving non-binding standards and rules, public-private co-operation, self-regulation, and greater participation from citizen coalitions, all with varying degrees of capacity and accountability. (2004, 276)

Capital’s self-regulation goes hand-in-hand with “rhetoric of a ‘gentler’, socially responsible or human capitalism” (Christiansen 2011, 198). Business ethics, voluntarism, corporate responsibility, and “good neighborliness” are regarded as both substitute for government regulation and indication of capital’s morality and trustworthiness. They offer the possibility of better futures, colonizing social horizons with their structural impossibilities. In chemical corporations’ visions for Hawai’i, they choose the facts and data that the public deserves to know, they provide the expert science, they dictate what is “win-win,” and anything that challenges this is not in “cooperation.”

Capital’s version of good neighborliness emerges as the only thing we could do, should do, and indeed the very thing we should have done in the first place (Star Advertiser 2014). As this narrative creeps into public common sense, the fact that disruption triggered any action in the first place is negated. Likewise, residents’ direct pleadings with companies for over a decade for more “neighborliness” are forgotten in the reprimand of the eventual turn to “non-cooperative” politics. It must be asked then, what ever justifies politics? When is capital’s capacity for “good
neighborliness” and “working together to meet community concerns” finally able to be called into question? Ten years of dust blanketing people's homes daily, multiple school poisonings, and parents’ concerns that they are noticing much higher rates of asthma in their children appear insufficient to demand more than what was voluntarily offered.

Cooperation, harmony, “win-win,” and being “in this together” do also express the very best of our human sociality. They speak to the highest of human capabilities, and run contrary to rationale of inevitable hierarchy and competitive individualism. How these utopian ideals, practices, and potentials, are harnessed instead in the interests of capital and solidification of the existing social order is of utmost importance. If truly alternative possibilities are to be invoked, direct attention must be paid to the matter of how the very aspirations for fairness, inclusivity, and getting-along become primary justifications against rearranging systemic exploitation and exclusion.

Science and Experts to the Rescue

Getting past division and controversy — and especially the messy, contradictory, and subjective world of politics — is especially said to require science and techno-managerial experts to mediate the truth. With Bill 2491, discourse of consensus and science-based policy took shape especially around the formation of a “Joint Fact Finding Group” (JFFG). In its passed form, Bill 2491 mandated formation of a JFFG comprised of community members to determine the scope and design of a comprehensive Environmental and Public Health and Impacts Study (County of Kaua‘i Resolution 2013-72). It was to be a two part process comprised first of the JFFG gathering information and determining the scope of the study, and second with JFFG oversight of an independent impact study. When Bill 2491 was blocked in court, the Kaua‘i Mayor’s Office and State Department of Agriculture jointly funded a year-long JFFG to review already existing literature and data related to pesticide use and potential impacts of the agrochemical industry. In essence, what was offered by the HDOA and Mayor was the “consensus” based community “expert” group to review available data and present “conclusions” about the “facts,” without the follow-up environmental and health study that would have conducted original research. The agrochemical industry publicly supported the initiative, with collaborators in the Farm Bureau, Department of Agriculture, and Mayor’s Office issuing similar statements about “fact finding” being “the type of work that should have been done before [Bill] 2491” (Board of Agriculture Chairman Scott Enright, in Star Advertiser 2014, n.p.; see also Moriki 2014).

The Mayor’s Office and HDOA approached Peter Adler of Accord Network 3.0 “strategic public policy consultants” to implement the JFFG. Adler’s specialty is described as “multi-party
negotiation and problem solving.” As Project Mediator, Adler was given the authority to choose JFFG members with the consultative advice of three “selection advisers.” Nine community members were selected to serve as members of the JFFG. Two worked for agrochemical companies, and one was a retired CTAHR administrator with close relationship to the industry. Others had publicly expressed skepticism of the industry and some had lobbied for passage of Bill 2491. According to communications from Adler, “Final considerations in the selection had to do with background expertise in agriculture, pesticides, public and clinical health, land use, environmental science, a demonstrated ability to work well in a collaborative deliberation, and a willingness to look at the issues with fresh eyes” (JFFG Update #1 2014, 2). All were described as “science-trained” (JFFG Draft 2016, 14).

The “consensual fact finding” of the JFFG was structured by mostly closed and not entirely transparent processes, especially in regards to the selection of participants, design of investigative processes, and meetings and discussion of the group. Such structure was deemed necessary to making the JFFG “non-political.” Activists and the general public, including the council members who introduced Bill 2491, were invited at various times to share their opinions and knowledge with the fact finding group. The extent of their participation was mediated by Adler, and they had access only to information given in periodic public updates by him. Members of the JFFG were asked not to discuss anything publicly until a full report presented by the entire group had been concluded. This was also deemed necessary to the privacy of group members and their ability to deliberate openly amongst themselves without external pressure. Periodic updates to the public included information about the types of meetings taking place, including who had participated. The public was invited to contact Adler at any point to discuss information relevant to the group or request visits with members of the JFFG.

Undergirding design and implementation of the JFFG were assumptions that politics and contestation could be removed from the process, that the industry could as equal “stakeholders” participate in a neutral matter to deliver facts, and that results would reveal to the expert bureaucracy how to best move forward. A description of “why is this [the JFFG] necessary?” by Adler highlights foundational assumptions:

Thus far, debates over pesticides and other related issues have been pursued primarily through litigation, legislative proposals, and political lobbying. Missing from the picture have been safe spaces where people with knowledge and goodwill who may disagree with each other can meet, review, discuss, interpret evidence and deliberate. The JFFG
will provide a forum for rigorous consideration, evidence-based debate, and collective fact-finding. (Adler 2014, 2)

While the JFFG can be critiqued for its “post-political” discourse and approach, including for providing a mechanism of potential recuperation and depoliticization, it should not be reduced to this critique. From its inception, it remained a space of contestation around which divergent interests and ideas were mobilized. Here it is useful to examine the complicated mix of viewpoints that influenced the JFFG process, as well as its unconcluded outcomes.

The primary council member who conceived of the JFFG believed strongly that as a public health issue, any community member, including corporate representatives, could participate with the same interest of seeing things resolved in a way that protected people’s health first and foremost. While she consulted with activists in her design of the JFFG, she remained adamant in her positions that industry must be included, that the process could be stripped of politics, and that consensus could be found through mediation and fact finding. Concurrently, she remained strong in the stance that regulation could not be replaced by voluntary actions. For her, the JFFG would assess information that would reveal whether or not, and what kind, of regulatory action should follow. As indicated by her support for Bill 2491, she saw the study as a complementary process to mandatory pesticide disclosure and buffer zones.

Several, if not the majority of members of the JFFG were prompted to participate because they perceived the potential for gaining accurate information in an environment where distortion is the norm. It appears that Project Mediator Peter Adler remained committed to “fact finding,” including holding the industry and government accountable to respond to questions and present information in a straightforward way. This is not insignificant in an environmental health controversy where industry misrepresentation is widespread and government JFFG funders accused of complicity with industry.

From the outside, activists remained both hopeful about the potential of the JFFG to gather information that they had not been able to acquire, as well as suspicious of its processes and participants. Upon announcement of its commencement, a well-circulated critique noted that its initiators from the County Mayor’s Office and State Department of Agriculture had opposed Bill 2491, that the JFFG was distinct from the Environmental and Public Health Impact Study mandated by Bill 2491 which included original scientific research, that meaningful study required mandatory disclosure of pesticide use, and that the JFFG was being used by industry and its government funders to argue that “further study” should precede and substitute for regulatory
action. As throughout deliberations over Bill 2491, activists rejected the narrative that “facts” and “science” were completely absent, and continued to cite strong existing scientific evidence about the harms of pesticides used by agrochemical operations. Instead of waiting for harm to human health and the environment to clearly reveal, activists advocated that enough was known to warrant greater protections. The organization Hawai‘i Alliance for Progressive Action, whose president Gary Hooser co-introduced Bill 2491, issued the statement:

While HAPA fully supports further study, this should not delay regulatory action to protect people and environment from heavy pesticide use by the chemical companies. There is a robust scientific literature on the dangers of the pesticides being used in very large amounts on Kaua‘i and other islands, and greater protections are common-sense. It is worth noting that in environmental justice issues around the United States, “further study” is often used as an excuse to delay action. While we absolutely need local studies, including epidemiological analysis, we should pursue this information while also ensuring protections from what we know are harmful chemicals being sprayed next to our homes, schools and waterways. (HAPA 2014, n.p.)

In March 2016, the JFFG issued its draft report with similar conclusions to many activists. The primary conclusion reached was that incomplete data and lack of study make the extent of human health and environmental impact unknown and urgently require government action. The group was not able to obtain adequate information to evaluate links between adverse health and environmental impacts and pesticide use, or the extent to which drift is occurring. Thus, it issued an extensive set of recommendations involving increased data collection, monitoring, and regulation. These include targeted and well-defined recommendations for: buffer zone policy; pesticide drift and surface water monitoring programs; air, soil, and dust sampling; updating health surveillance data; voluntary blood and urine tests for students; testing wildlife for pesticide exposure; and overall to “undertake a major update of Hawai‘i’s pesticide laws and regulations” (JFFG Draft 2016, 93-105).

The JFFG process decisively exposed the lack of data and surveillance regarding pesticide impacts in Hawai‘i. Its report made plainly apparent government negligence, severely lacking regulation, and industry and state refusal to publicly disclose critical information (JFFG 2016, 15-17). As such, it reaffirmed, in a methodology that it posited as “non-political” and “fact-based,” much of what lays at the very heart of the political controversy.
Moreover, the “science-based approach” of the JFFG itself recognized the changing and contested nature of science. It explicitly discussed “ongoing controversy and active scientific debate related to pesticide use, regulation, and health impacts” (Draft 2016, 81), and the “messy” nature of both the science and politics (JFFG Update #9 2016). At times, it attempted to note the different assumptions that informed different scientific conclusions. While failing to fully consider the social context of scientific dispute, and carefully avoiding the topic of power, the acknowledgement that “science” is neither monolithic nor neutral is noteworthy.

While rhetorically aiming to avoid “politics,” the JFFG has been central to the political battle, especially since its draft recommendations were issued. The unavoidable disagreement implicit to the Joint Fact Finding Group and process itself erupted most publicly following release of the draft report, upon resignation of both industry representatives and the member of CTAHR. In resignation letters, industry members charged that the process was “biased and conducted with an unscientific agenda in pursuit of an indefensible outcome” and that it had “failed in its mission to remain ‘fact-based’” (available at Hofschneider 2016b). Adler expressed surprise at the “unexpected, poorly timed, and completely unnecessary” resignations, noting that they came after public issuing of the draft recommendations that the members had been a part of formulating (Hofschneider 2016c, n.p.). Official industry statements likewise called the draft recommendations “not based on scientific findings” and charged that “the draft report continually raises unfounded and unsubstantiated fears about chronic exposure and chemicals in general” (HCIA 2016, 2). Selectively choosing language from the draft report, the industry asserted that its primary finding was “no negative impacts on the health of our community” from agrochemical use (HCIA 2016, 1).

Chair of the State Department of Agriculture similarly told media within a day of the draft report’s release that its most important finding was of no statistically conclusive evidence of harm, and criticized its recommendations. Following the release of the full report in June 2016, multiple state departments have reiterated the inaccurate narrative that the report’s key finding is of “no smoking gun” of harm (Cocke 2016, n.p.). As such, the state has attempted to dismiss the JFFG’s extensive conclusions that clearly articulate profound lack of information and claim that the recommendations “aren’t useful” (ibid).

Activists continue to contest these obfuscations and pressure the state to take action on JFFG recommendations. In spite of the post-political ideas that bear upon the JFFG design, process, and evolving outcome, it has also been a mechanism to contest the situation. More than merely a post-political exercise or maneuver of recuperation, the JFFG enabled a deepening of public
probe into agrochemical industry activities. In environmental health conflicts, facts and scientific information are almost always partial, confused, and intentionally distorted, and getting closer to truth is critically important. In this regard, the JFFG indicates the need to be both entirely suspicious of the reduction of politics to “consensus” based “fact finding,” more study, and negotiation between “stakeholder groups,” while also holding open the potential that not all processes that use such languages are merely instruments of depoliticization and can be mobilized towards emancipatory political aims.

Broadening away from the JFFG, what requires investigating further here are ideas about science and especially the notion that science could (and should) operate as an “alternative” to politics. An overarching narrative around agrochemical controversies, and an underlying assumption of the design and presentation of the JFFG, is that fact and science have been lost to politics and controversy. By such logic, there is only “science” and “anti-science,” and facts are clear, only waiting to be interpreted or discovered by experts. Moreover, in the wider discourse around agrochemical industry activities, the masses are largely illiterate to science, irrational and hysterical in their environmental and health concerns.

Scientific knowledge is neither neutral nor strictly the territory of scientific experts, but rather, a location through which different interests and ways of knowing come into conflict. Far from an argument for relativism, scientific knowledge and the uses to which it is put “never comes free of social interests or implications” (Wynne 1992, 281). Science is itself a space of struggle between deep-seated social assumptions, material interests, and class positions; it is molded by human agency and cognition (Montenegro De Wit and Iles 2015; Narayan and Scandrett 2014). As Shiela Jasanoff writes, “facts and artifacts do not emerge fully formed out of impersonal worlds” (2005, 251); or in Haraway’s popular phrasing, knowledge is always “situated” (1988).

Ideologies of science often obscure the contestation and social embeddedness that is innate to science. Scientized discourse treats science as “a singular source of truth,” separated from its “human-made character” (Montenegro De Wit and Iles 2015, n.p.). As scholars of science have pointed out, notions of “pure” science — an ideal of “autonomous, value-free, and disinterested science” — remain somewhat of an “American Eden” (Jasanoff 2005, 228). Hegemonic notions of scientific neutrality, singularity, and the superiority of particular specialist knowledges frequently work to silence the voices of those who question powerful institutions, as well as to erase inherent value judgements and conflicts in what is presented as purely “scientific.”
Kaua‘i’s JFFG is firmly rooted in dominant ideas around science, and particularly in a “Public Understanding of Science” (PUS) model. PUS discourse and projects stem from the assumption that the public is lacking in scientific education and that there will be little variation in perceptions of scientific knowledge as long as people are properly informed. In contrast, scholars of science have shown how the same “facts” can lead to radically different conclusions, and that much divergence in their interpretation revolves instead around normative, intrinsically political matters. Moreover, Jasanoff summarizes the work of social scientists to empirically document the inaccuracy of dominant narratives about ignorant publics in need of rescue by science:

Instead of a faceless member of the public, whose engagement with science falls on a linear axis from knowing (for the few) to unknowing (for the many), Wynne and others present a more complex and competent human subject: one who struggles with ambivalence in the face of competing cognitive and social pressures, robustly copes with ignorance and uncertainty as well as “the facts,” and reserves the right to make moral choices about the purposes and governance of technology. (2005, 254)

Following most notably the work of Brian Wynne (1992) around radiation and Chernobyl, social scientists have shown that in environmental health matters especially, lay citizens may be better than experts at making room for the unknown and contribute specialisms of their own. “Non-experts” may undertake “rigorous accumulation of knowledge of the physical world” through both their experiences and access to “official” scientific knowledge (Narayan and Scandrett 2014, 564). Despite empirically rich documentation of “citizen science” and the insights of “lay knowledge,” communities impacted by polluting industries are seldom considered generators of scientific knowledge (ibid).

Repetitious anecdote about publics ignorant of science presumes a division between the literate experts who can legitimately know and the illiterate subject (Rancière 1991 and 2010b). From ignorance of science, a more general ignorance is cast upon the masses, and especially those whose ignorance disrupts the existing situation:

Who/what is being hurt by the anti-GMO movement, the first casualty is civil discourse, followed by reason and critical thinking. (Conrow 2015a, n.p.)

Shouldn’t we know the type of lunatics we seem to be surrounded by? After all, they’re taking over….elected officials are pandering to their endless whining and complaining,
policies and laws are being made to address their paranoid fantasies, and in their hysteria, they are ruthlessly going after farms. (KauaiEclectic blog comments 2014)

It is a conflict between rational perspectives on agriculture and an extremist fringe. (Parachini 2014, n.p.)

Any normal, sane human being would see that there is a clear difference in sanity between the two groups [for / against Bill 2491].” (Testimony in opposition to Bill 2491)

In Hawai‘i’s agrochemical controversy, those who march with the “mobs” in their “mob behavior” are characterized as, at best, misguided followers, non-thinking individuals, “people who have been frightened and brainwashed” (Conrow 2015a, n.p.), masses who have succumbed to the fanaticism of the crowd. There is also a highly gendered politics to the casting of reason versus emotion. Accusations of hysteria, emotionalism, paranoia, and irrationality are strongly feminized, reading unintelligence along gendered characteristics in ways that have a long history in oppression and patriarchy (Seager 2003). Not without irony, women — “hysterical housewives” (Seager 1996) — have historically been most instrumental in discovering and forcing attention to environmental sources of health problems (Seager 2003).

The agrochemical-seed-biotech industry appeals to notions of homogenous and certain science (there is only “science” or “anti-science”), while simultaneously manipulating the fact of always existing scientific uncertainty in order to delay, distort, confuse, and manufacture doubt (Oreskes and Conway 2010). Ideas about what science is and does are used in paradoxical ways to both foreclose what are actually political conflicts between different social interests, and to create the appearance of wide spectrums of scientific debate where there is actually a notable amount of agreement (on the dangers of certain pesticides, for example). While identifying patterns of ideas that are mobilized in the interests of capital, it must also be recognized that these ideas themselves are often in contradiction (from science as “anti-hysteria” to calling scientific majorities themselves hysterical), as capital’s search is not for “purity” or truth, but instead for science and technology that serves its accumulation imperatives.

In considering the contradictory ideas about science that subvert agrochemical industry regulation in Hawai‘i, a final note is warranted on the discourse of science and GMOs. Most current regulatory and social movement activity in Hawai‘i focuses on pesticide use, undergirded by a strong body of scientific evidence around harms. While it is true that resistance related to agrochemical operations is often intertwined with a range of social and
ecological concerns around GMOs, the dangers of pesticide use are intentionally conflated by industry with murkier scientific debates around genetic engineering. In policy conflicts related strictly to pesticide use, the industry criticizes “ideological bias” against genetic engineering as the motivation of resistance, and then claims “scientific consensus” around the safety of agricultural biotechnology. This serves to distract from core concerns over pesticide use, and position the industry on the side of “science” where they actually have little to no scientific evidence of pesticide safety to stand on.

Assertions of scientific consensus around GMO matters are themselves highly partial and misleading, and neglect the complexity of and conflict between scientific views. As with other environmental issues, scientists themselves disagree to a wide extent on matters of safety and risks of genetic engineering, even when answering seemingly well-defined questions (Carolan 2008a; Hilbeck et al. 2015). More broadly, much scholarship has critiqued the scientized and “objectivist risk discourse” (Heller 2002) surrounding agricultural biotechnology (Jasanoff 2005; Levidow and Carr 1997; Wynne 2005; Carolan 2008a). Such discourse reduces debate to narrow sets of risk, where policy outcomes can be best decided through expert measurements of these risks. The role of the public is mere uptake of these scientized assessments. And yet, contra Public Understanding of Science (PUS) models, much of the public’s concern over agricultural biotechnology has been shown to lie in matters that exceed narrow risk quantifications, such as normatively “front-end” questions like whether such technologies should exist and to what end they ought to be directed (Carolan 2008a, 74; Wynne 2005). While it is outside the scope of this thesis to elaborate on the topic of public perception of GMOs, what is important to emphasize here are the ways in which diverse contestations around the agrochemical industry in Hawai‘i are continuously reframed as anti-scientific rejection of a particular technology. “Science” is contradictorily cast as the realm that holds answers to conflicts ranging from whether chemical companies should have to disclose pesticide use, to how and by whom land should be used, to whether patents should be granted on food crops, to whether and how life should be manipulated at the molecular level.

Depoliticizing ideas about science, techno-managerial post-political consensus, and voluntarism, are powerfully intertwined with anti-political tendencies and the pervasive notion that capital’s logics and processes constitute the horizon of possibility. Capital’s utopian promises of consensus, harmony, and expert management in “our” best interests take hold in a context of multitudinous realisms that assert the impossibility of substantial change. As this chapter has shown, the matrix of these ideologies serves to bolster the current order and make overcoming particular situations of injustice appear impossible or undesirable. Resistance must
challenge not only the specificities of situations of injustice, but wider and deeper ideas that depoliticize and limit the possible. This thesis now moves, then, to ask whether and how Hawai‘i’s powerful GMO Ground Zero Movement is opening the possible.
CHAPTER NINE: OPENING THE POSSIBLE?

As indicated in Chapters Six and Eight, the contest over the possible is far from being subsumed by logics that buttress injustice. In Hawai‘i, recent waves of intertwined environmental, social justice, decolonial, anti-corporate, and democratic struggle give hope, practicality, and realism to the fact that things could be very different from the way they are. These contemporary struggles are seeded in soils laid by generations prior, including powerful anti-colonial, radical labor, and racial justice movements, as well as Kānaka Maoli epistemologies and practices that have long refused erasure by colonial-capitalist rationalities and intrusions (Goodyear-Kaʻōpua, Hussey and Wright 2014; Silva 2004; Horne 2011). As much as plantations and oligarchies define Hawai‘i, so do these glimmers of other possible worlds.

This chapter explores in greater depth the matter of the possible as it is contested and reproduced by social movement actors in Hawai‘i’s GMO Ground Zero conflict. It provides an analysis that is at once critical and hopeful, committed to the ethos of “militant ethnography” as a “process of collective wondering and wandering that is not afraid to admit that the question of how to move forward is always uncertain, difficult, and never resolved in easy answers that are eternally correct” (Shukaitis and Graeber 2007, 11). Following theoretical and empirical themes developed in the preceding two chapters, this chapter begins by arguing that agrochemical activists resist depoliticization, and in so doing also inject politics into U.S. agrifood debates that have tended to be dominated by neoliberal ideology. It then examines interconnected matters related to race and class, decolonial struggle, wider systems change, and universalism, indicating both limitations and potentials. It is argued that the movement’s greatest potentials lie in its relationship to wider systemic struggle and development of intersectionality of struggle. Moreover, it is shown that capitalist common sense is being challenged by logics that emerge around Hawai‘i’s movement. Expanding limited horizons of possibility requires engagement with imperfect but hopeful post-capitalist and egalitarian ambitions in Hawai‘i’s GMO Ground Zero Movement and beyond.

Refusing Depoliticization

Hawai‘i agrochemical activists struggle on a terrain that is shaped by deep suspicion of politics, conflict, social change, and universalist visions of justice, and frequently appeal to neoliberal common sense in complex and contradictory ways. At the same time, they work around and between narratives that foreclose politics and strongly assert that they will not be absorbed back into the existing order (Badiou 2005; Rancière 2010a). In short, they insist on both the
recognition of injustice and the “truth of the fact” that more just social arrangements are possible (Badiou 2012, 87). Action is framed around an emboldened belief in meaningful social change through collective efforts, including a language of determinedness and refusal to be disappeared through defeat or appropriation. In its bold challenge to global chemical companies, the movement illustrates the imperative of politics and inspires belief in the possibility of change.

Scrambling post-political consensus, activists appeal to a common good “we” that excludes chemical companies and their capitalist drive to put “wealth before health” and “profit before people.” While they antagonize the agrochemical-seed-biotech industry for “poisoning paradise,” activists frame their opposition as rooted in a morality of collective care for place and people, with slogans like “protect what we love” and invocation of Hawaiian ethics of kuleana and aloha ʻāina. As the industry positions activists against the very things they value, including cooperation and harmony, activists reclaim and politicize notions of “unity” as being principled by social justice, solidarity, and “never compromising all of our health and our common air, water and soil” (popular pamphlet 2013). In opposition to narratives of neighborliness, voluntarism, and apolitical consensus, activists show agrochemical corporations to be corrupting democracy, evading health and environmental concerns, and part of the ongoing colonialization of Hawai‘i. Turning to the perpetrators of harm for solutions is rejected as implausible.

Activists use scientific knowledge on pesticides to articulate their concerns, while also drawing attention to inherent unknowns and unknowables and complicating assumptions of science divorced from social context. They show environmental health and precaution (the obligation to prevent harm before it occurs) to be political matters and demand participation in the exclusive domain of policy and science “experts.” As such, they work to politicize and democratize spaces that are constantly under threat of being subsumed by discourses of science that erase power, conflicting interests, and judgements.

In bringing pesticides, producing communities, and collective political engagement to the forefront, Hawai‘i’s GMO Ground Zero Movement works to shift a conversation that, in recent years, has been somewhat dominated in the United States by individualized consumer concerns, market-based action, labeling campaigns, and what has been critiqued as the reproduction of neoliberal logic in agrifood activism (Guthman 2008a). To briefly summarize, agrifood scholars in the U.S. have critiqued much food activism for its reproduction of neoliberalism’s “possible,” and for contributing to a less equal, classed, and racialized food system (Guthman 2008a; DuPuis and Goodman 2005; Allen et al. 2003; Alkon and Agyeman
A rapid rise in gardening and farmers markets, organic and fair-trade, and public attention to “food matters” (Bittman 2009) coexists alongside global hunger highs, exceptional land and water grabs, unprecedented market concentration, and ever-new bioenclosures (Borras et al. 2011 and 2012; Hauter 2012; Howard 2009). Capitalist agriculture’s imperatives to accumulate, consolidate, dispossess, and exploit appear ever-expansive and hardly threatened, even carving new terrain in recuperation of social ideals as Walmart goes “local,” Nestle goes “fair,” and organic dollars go to Coca-Cola, General Mills, and other food processing giants (Guthman 2004; Fridell 2007; Jaffee and Howard 2010; Hauter 2012). Mainstream food activism’s attempt to locate social change in individual behaviors, markets, entrepreneurialism, and a turn to the local that can obscure the structural, allude to a moment marked by depoliticization, neoliberal norms, and scarcity of thought about or beyond capital (Guthman 2008a; Allen et al. 2003).

Further, some have argued that the centrality of individual pleasure and personal health — a NIMBYism that has morphed into “Not in My Body” — can serve to weaken collective motivations for justice, and point to spaces in which the “good food movement” is less concerned with good food for all (Liu and Apollon 2011, 2). Themes circulating in the more “mainstream” food movement can work to maintain and reproduce social inequality by universalizing and elevating particular ways of eating as ideal in an individualized “politics of perfection” that is racialized, classed, and gendered (DuPuis and Goodman 2005; Johnston and Baumann 2010; Guthman 2008b; Johnston 2008). The peripheral visibility of food system workers and producing communities is perhaps most emblematic of individualistic, neoliberal, and largely white middle-class engagements in food, though these more mainstream dynamics have in recent years been influenced and challenged by food justice and food sovereignty movements.

While mainstream U.S. activism around GMOs has centered largely on consumer health, individuals’ “right to choose,” and corresponding campaigns to label GMO-containing foods, Hawai‘i has begun to bring to the forefront things that have been somewhat sidelined. First, it makes clearer the ways in which a handful of colluding corporations are using GMO technology to entrench a pesticide intensive, industrial style agricultural system in which they control both the seeds and the chemicals. Second, it draws attention to producer communities and environmental justice concerns. And third, it illustrates the need for and inspires the possibility of collective political action. These are critical openings, as they orient a more systemic critique and attention to issues of justice while also challenging neoliberal rationality that justice can be achieved through the market.
While Hawai‘i’s movement resists depoliticization in many ways, it is at the same time embedded in wider neoliberal context, influenced by more mainstream and dominantly white U.S. agrifood engagements, and brings a unique but also more generalizable set of both challenges and potentials to emancipatory struggle. Attending to contradiction and complexity in Hawai‘i’s heterogeneous GMO Ground Zero Movement, the remainder of this chapter examines interconnected challenges related to race and class, decolonial struggle, wider systems change, and universalism. This critique is woven through in a dialectical fashion that aims to renew rather than to reject (Brown 2005, x). Many co-activists are co-theorists in these critiques, and the more problematic dynamics discussed are also being actively challenged from within. My comments do not stand outside of the movement, but are very much embedded in a milieu of collective thinking, organizing, and imagining.

**Whiteness and Class**

While resistance to agrochemical operations takes a multiplicity of forms including “everyday tactics” (Scott 2008) and more subtle defiance, in the most visible spaces of the movement (in media, at public events, leading organizations, using paraphernalia, etc.), white bodies and white cultures tend to dominate. This dynamic can be understood within the wider U.S. context of white middle-class agrifood concerns as discussed above, and the embedding of much conversation around GMOs in consumer anxieties and “right living” discourse (DuPuis and Goodman 2005, 362). While Hawai‘i’s struggle is also clearly distinct, these spaces of whiteness and class privilege do come to bear locally and coincide with unreflexive white and settler practices. To highlight these matters is not to delegitimize activism that emerges from relatively privileged social actors (Haiven and Khasnabish 2014). The problem is not that white people, some multi-generational and other recent settlers, are concerned with and mobilizing around pesticide use by agrochemical companies in Hawai‘i. Rather, obstacles to an emancipatory politics converge around the failure on the part of some haole activists to “learn the oppressive role white cultural imperialism has played and continues to play in Hawai‘i” (Trask 1991, 1212), to confront their own structural privileges and complicity in forces of displacement, and to be reflexive about whiteness in ways that go beyond desires for more brown bodies in white spaces.

Many white activists do not recognize long histories of racial hierarchy and violence in the islands and how their own racialized discourses energize rather than dismantle racism. As Leong describes, “condescending” and “patronizing attitudes” have been woven in with structures of racial oppression since white colonists arrived in the islands; local “bitterness,
resentment, and anger” expressed toward haole is a reaction to white supremacy (1997, 220). Reminiscent tones of racialized superiority are experienced today when haole activists speak for, speak over, victimize, or instruct those living near agrochemical fields. White movement participants frequently comment on “plantation mentality,” disparaging the agency of working-class people of color and erasing a long history of radical resistance by “plantation people” (Horne 2011; Beechert 1985). As one resident living in a most impacted community summarizes, “we know the chemical companies aren’t good, but better them than haoles telling us what to do” (personal communication).

Communities most impacted by agrochemical operations are also most dependent on them for jobs. While not the core of the movement, classist tendencies are reflected in elements of the movement that express lack of concern for precarity and livelihood dependencies. Remarks of the nature, “they should get other jobs” indicate an absence of consideration for the severe shortage of options many working-class people in the islands face, especially in communities where agrochemical companies are most established. Most problematic, though fringe to the movement, is not only a disregard for but blaming of rank-and-file workers, who themselves face the greatest dangers of pesticide use. Accusations of “your jobs are poisoning us” have arisen at public hearings and on social media, and have a permeating effect. The classist and racist undertones to these antagonisms are skillfully manipulated by (mostly) white agrochemical bosses, who are practiced in the vocation of nurturing division.

The entanglements of many white and middle-class movement participants in systemic processes of rural gentrification and displacement of working-class people from the islands complicates solidarity around a land-use and economic issue, especially when these parallel injustices are not also directly confronted. Many white residents do not account for their own positions and complicity in processes of displacement, or how their very presence can be interpreted as a continuation of forces pushing folks out of their homes (Shaw, personal communication, 2014). As is analyzed by a wide literature, even new settlers’ projects to “improve” places, through community gardens for example, can be connected to processes of gentrification and making spaces more white (Hall 2011). In Hawai‘i, what often goes unnoticed by white activists working to change the agrifood-scape are histories of local struggle and resistance, past landscapes of vibrant local food growing by plantation communities, and continuing practices of “alternative” food economies that are not white. Most generally, there has been a paucity of movement consideration about how anti-agrochemical and agrifood activism is linked to systemic processes that are also part of the whitening of the islands and impoverishment of (mostly brown) locals.
Many white agrochemical activists long for a “colorblind” movement, or even complain of “reverse racism.” Both expressions naturalize and universalize whiteness while eliding structural racism and difference (Frankenberg 1997; Rich 1984). Related, there is a tendency on the part of white activists to seek enhanced “participation” and “representation” without actually changing the struggle itself. In the “rush to inclusion,” whiteness in the movement is typically viewed as “a problem to be solved rather than as a thing to be explained” (Thompson 2010, 13). Broadening and “diversifying” the struggle requires not the inclusion of racialized bodies, but actually shifting the contours of the movement.

When a politics of race and class are not centered in struggle, they implode back at that struggle’s emancipatory potentials and can actually serve to reproduce race and class cleavages. None of this critique should take away from the dedicated focus of many activists to dismantle racism and classism and to build transformative relationships of solidarity (Featherstone 2012). There is strong organizing work taking place within the movement around privilege, whiteness, and interrogating the place of settlers’ in colonial Hawai‘i. There are also important convergences of struggle that indicate deeper solidarities and commitments to wider change, including about fundamental matters of structural inequality. While not minimizing real problems of race and class in the movement, it also must be emphasized that the agrochemical industry nurtures already existing racial conflict in the islands, often in highly manipulative ways that distort critical work being done by the movement to confront racism, classism, and inequality.

Decolonial Struggle

Decolonization possibilities are perhaps expanded by GMO Ground Zero resistance, while at the same time sticky contradictions arise around dynamics of political-resource-settler-cultural colonialism. Nodes of decolonial and agrochemical struggle are entwined in ways that are not always straightforward, with complicated relationship to differently positioned Kānaka Maoli and their own heterogenous interests. Just some of these nodes include water rights battles between Hawaiian taro farmers and chemical companies (Henkin and Moriwake 2013), the leasing of “state” (seized) lands to agrochemical operations, biopiracy and intellectual property patents (Kanehe 2014), place-based indigenous food practices (Gupta 2015), and demands for political and resource self-determination (Goodyear-Ka‘ōpua, Hussey and Wright 2014). Agrochemical occupations are inseparable from colonial context, and resistance brings to surface the long and continuing history of the imbrication of capitalist agriculture and colonialism. It also brings to the surface questions and tensions around settlers, displacement of
indigenous people, land ownership, national identity, race and ethnicity, and ultimately political sovereignty (Goodyear-Kaʻōpua, Hussey and Wright 2014). Insufficient grappling within parts of the GMO Ground Zero Movement with matters of colonial settler practices and entanglements and the ongoing dispossession of Kānaka Maoli undermines solidarity, emancipatory and decolonial potentials (Trask 1991).

The complexity of these matters can be examined further in the use of “aloha ‘āina” by the movement. Though most typically translated as “love for land,” aloha ‘āina is mutually a political concept with a long history in Hawaiian anti-colonial struggle (Silva 2004). It is a concept that encompasses spiritual belief and the reciprocal relationship between people and ‘āina, as well as the protection of land and “Hawaiian native rights and sovereignty to achieve the political standing necessary to protect the ‘āina” (McGregor 2007, 265). Deep anti-colonial, historical, political, and spiritual meanings are not consistently understood in widespread use of the concept by the movement. Casual use of the concept also illustrates the problematic dynamic of western tokenizing, exoticizing, and essentializing of Hawaiian culture in ways that extend cultural imperialism and colonization.

Yet at the same time, “aloha ‘āina” has been a beckoning call uniting a multitude of recent struggles around land and environment, development and urbanization, protection of sacred places, indigenous rights, and sovereignty. In this, Kānaka activists remain the most visible and respected leaders and sources of mana'o (thought, idea, theory) and 'ike (knowledge, to see/perceive) (Kanehe 2014). Veteran Kanaka activist Walter Ritte asserts:

If we don’t come together, if we don’t unify, we are going to lose [our natural resources]….We can conquer everything if we can come together…. The banner that puts all of us in the same room, under the same coalition, is aloha ‘āina. If we all love the land, we can be on the same team, no matter what nationality you’re from….That’s the end goal, to build our coalition under the banner of aloha ‘āina. (2015, n.p.)

Resistance to agrochemical operations has been salient in these widening aloha ‘āina struggles. Given the significance of large capitalist agribusiness to Hawai'i's continuing colonial history and power structure, its centrality in recent struggle is not inconsequential. Moreover, it is in the “intersectionality of struggle” as witnessed in recent aloha ‘āina mobilizations that single issue based activism might transform into radical consciousness (Davis 2016). The following sections further show both the need for, and seeds of, deepening systemic consciousness and struggle.
The Political Economy

In its intertwinement with other struggles and demands for “people over profit” and “health before wealth,” Hawai‘i’s GMO Ground Zero Movement confronts certain systemic conditions around capitalism, democracy, and colonialism. However, it is not generally a radical political struggle and there is a shortage of orientation towards structural political economy critique. While statements like “the whole system needs to change” are common, these are rarely grounded in analysis that takes capitalism and its logics as requiring fundamental change. In general, there is a sense that exploitation is not the logic of capitalism itself, but the result of some form of corrupted capitalism, bad government, or aberrant corporations (see Panayotakis 2010). What is structural comes to look particular, be it in Monsanto, a crooked politician, or a technology. Agrochemical company actions are seen not as the rational response to structural incentives, but as the evil-doing of moral outliers. Such moral critiques serve not only to detract from structural critique, but contribute to capitalism’s “human nature” justifications and “realism” (Fisher 2009).

The substitution of the structural for something apparently aberrant is notable in the movement’s mobilizations around “reclaiming democracy” from bad corporations. It is true that moneyed interests have largely captured the U.S. state, and that this is a most critical battleground over democracy and capitalism generally. Where these discourses become problematic is in the assumptions that democracy and capitalism are compatible in the first place, or that policies honestly designed in the interest of the public good can escape the imperatives of capital accumulation (Panayotakis 2010). The point here is not to issue an argument for or against the potentials of capitalist social democracy, but to call attention to avoidance of structural matters in platitudes that bad politicians or bad capitalists are to blame for bad capitalism. By such logic, good capitalism can exist once the government is made good; capitalist logic itself is not up for critique. Most problematically, this is expressed on both the left and the right as trying to expunge “politics” from the economy to create a more pure capitalism, often underlying denunciations of “crony” and other “corrupted” forms of capital. Or, and often simultaneously, a progressive political agenda comes to be defined solely by government intervention void an alternative, more egalitarian and democratic social logic (ibid).

Relatedly, agrifood movements in Hawai‘i and nationally, like other environmental movements, frequently argue today that what is green is actually profitable. For instance, there is a widespread assertion that removal of government subsidy to Big Oil or Big Ag would allow innumerable clean energy and food enterprises to flourish. Such arguments suggest that if the market was truly “free” and “fair,” “green” and “clean” would win out. It is a critique of monopoly
power that unwittingly calls for greater marketplace competition (Huber 2015, n.p.). Not only is this a mischaracterization of capitalism that reproduces the myth of a self-regulating market (Polanyi 1944), it also solidifies the neoliberal idea that “pure” capitalism is a viable strategy for meeting social goals. Such logic works against an understanding of the critical need for the state to “subsidize” societal development pathways in radically new environmentally sustainable directions (Parenti 2011).

The movement’s shortage of thought about the necessity of wider system change is most strongly encountered in the apparent choice between jobs and health/environment. While this is not a binary framed by the movement itself, the inability to counter this most pernicious trap stems partly from lack of structural consideration about capitalism, economic dependencies, and inequalities. It is only in capital’s colonization of horizons of possibility that livelihoods are necessarily in contradiction to a future of life on the planet. In Hawai‘i, insufficient attention has been paid to building solidarity with labor and developing class-based system critique as a starting point to addressing this most pressing and widespread challenge of social movements today.

In considering alternative economies and livelihoods, Hawai‘i activists most typically propose local food production as the straightforward and uni-dimensional substitute to agrochemical operations. The local is celebrated as innately carrying forth particular values that oppose those of exploitative global capital (Allen 2010; DuPuis, Goodman and Harrison 2006). There is a shortage of thorough consideration for political-economic constraints to meaningfully scaled local food production or, ultimately, to how focusing on localization as a value in and of itself will deliver more liberating futures if still embedded in capitalist structures and compulsions. Competitive accumulation equally structures local economic relations (Sharzer 2012). As Clare Hinrichs aptly points out in her study of local Community Supported Agriculture schemes, while on one level such direct producer-consumer arrangements represent a step towards decommodifying food, on the other level they still have to “get the price right” (2000, 301). For local food businesses restricted by capital’s compulsions — or not intending to challenge its logics in the first place — profit generation, customer retention, and capital efficiency must take at least equal priority to more qualitative and justice-based concerns (DeLind and Bingen 2008).

McCarthy (2006) rightly notes that the goals of these alternative food networks is typically to create spheres of capitalist production and consumption that are more caring, but not in opposition or external to capitalism. Also applicable to Hawai‘i activists, Alison Alkon (2008) shows in her study of Northern California farmers markets that in order to maintain a narrative of
creating sustainable and equitable food systems through local economic development, participants must distance the kinds of economics they promote from those of the corporate capitalist system. They do so by “positing local economics as morally embedded in concern for the local community while aligning larger business with the need for ever increasing profit that characterizes the treadmill of production” (Alkon 2008, 494). Again, exploitation is linked to individual (corporate) behavior, rather than the logic of the capitalist system.

A wide literature critiquing agrifood localism has suggested that the strategy of localizing production can keep intact structures of inequality and oppression, even facilitating neoliberal devolution and a less equal food system that reinscribes privilege within and between localities (Allen and Wilson 2008; Hinrichs 2000 and 2003; Allen 2010; Allen et al. 2003; McIntyre and Rondeau 2011; DuPuis and Goodman 2005; DeLind and Bingen 2008). Moreover, agrifood localism is often accompanied by neoliberal ideologies of individual responsibilization and consumption as politics (Guthman 2008a). For David Harvey, “the contemporary emphasis on the local, while it enhances certain kinds of sensitivities, totally erases others and thereby truncates rather than emancipates the field of political engagement and action” (1996, 353).

When it comes to local food, as Patricia Allen argues, “workers as actors and justice as principle are often missing in both theory and practice” (2010, 306). In Hawai‘i, a subset of farms producing local food have proven to have worse labor conditions than transnational corporate operations; larger studies elsewhere have also shown that there is nothing inherently less oppressive about small or local for farmworkers (Allen 2010).

In more egregious moments, scalar discourses are exploited for regressive political and economic ends (Whitehead 2003). Indicative of this potential, when several farms in Hawai‘i were found to be using trafficked “modern-day slave” labor, farm owners were defended with arguments for the necessity and morality of local food production, including assertions that its success requires cheap labor to remain competitive (Park 2010). It was stated by a well-known activist and retired university professor: “The incarceration of [farm owners] Alec and Mike Sou would threaten our food security and could endanger our future sustainability on Oahu” (Star Advertiser 2010a). Most generally, as documented by social scientists in a range of situations, “support for local economy” can be expressed with no regard for labor, the environment, or social justice (Winter 2003).

The turn to the local partly reflects a distrust of large scale politics that has effected disengagement and depoliticization, and itself must be confronted rather than reproduced by social movement strategy (Allen 2010). Parallel to rejection of large scale politics is the trend
away from “big-picture thinking” that bankrupts explanation for how local food production is undermined by wider socio-political context, thus aiming to solve a perceived problem without addressing many of its core, non-local dimensions (Harvey 2010, 254). None of this is to suggest that all local food activists are bound-up in such problems. Instead, the point is to flag a number of challenges and limitations while noting that focusing merely on matters of scale is not inherently emancipatory.

Not ignoring these problems, critique must go beyond Jodi Dean’s oft-repeated, now internet meme, that “Goldman Sachs doesn’t care if you raise chickens.” While structurally true in certain global North cases especially — and also observable in Monsanto Hawai’i’s sponsorship of school gardens and local agricultural parks — there is also more going on in such spaces than trivial diversion of food dollars from corporations to the neighbor farmer. A diverse literature, much of it from activist-scholars, makes the case to varying degrees for local agrifood initiatives as offering a partial “re-embedding” of markets in systems of social and moral relations (Kloppenburg, Hendrickson and Stevenson 1996; Starr et al. 2003; Jaffee and Howard 2010; Friedmann and McNair 2008; Holt-Gimenez and Shattuck 2011; Morgan, Marsden and Murdoch 2006; Hendrickson and Heffernan 2002). Many argue that localizing food production can take power away from centralized global capital and place wealth, power, and livelihood control within the hands of “communities” (Community Wealth 2016). Useful distinctions have been made between neoliberal, reformist, progressive, and radical movements related to geographies of food production (Holt-Gimenez and Shattuck 2011), or between “corporate, weak alternative food networks” and “strong” ones that seek to challenge the “foundations of the conventional food system” (Follett 2009, 31). In more radical form, movements like food sovereignty (based primarily in the global South) view regionally-based food systems as part of wealth and resource redistribution, producers’ rights to the means of production, democratization, and dismantling transnational agribusinesses’ monopoly power (Holt-Gimenez and Shattuck 2011; Via Campesina 1996). Many also argue that alternative local food system visions reflect a reorientation of values that sees joy and pleasure in greater connection to both other people and the non-human world, implicitly or explicitly questioning the fulfillment of “market-driven lifestyles” (Soper 2000, 129). It is beyond the scope of this thesis to detail important debates about structure and subjectivity as related to diverse local food initiatives; what is mentioned here merely provides a dialectical departure point for examining their place in Hawai’i’s movement.

While containing limitations and contradictions, there is also symbiotic relationship between food localization efforts in Hawai’i and widening social possibilities. Local food projects are often
layered with anti-corporate and sometimes post-capitalist ambition, a language of the commons, concerns for equity and the environment, and immediate food justice implications (for example, in distribution of local nutritious food to economically marginalized communities, as in some school garden or farmers market food stamp initiatives). Most observably, localizing food production has the potential to offer tangible and prompt environmental benefits, positively contribute to fossil-fuel reduction and climate change solutions, provide livelihoods outside of the service economy and military, and remove some decision-making from global capital. For geographically isolated islands currently importing close to 90 percent of their food, local production is typically more ecologically and economically resilient within current systems (Leung and Loke 2008). While often critiqued for being an apolitical and market-based approach to social change, many food activists are highly engaged in working to change policy to restructure the food system towards the local. In the case of Hawai’i, rejection of agrochemical plantations typically goes hand in hand with visions of a local and agroecological food economy alternative, with many activists engaged politically to push for a transition through changes in land and water use policy, state spending, university research, etc. Alternative local food initiatives are created alongside and as part of political struggle over the state, not merely a market strategy.

In more subjective terms, local food initiatives can provide spaces for both “incubating and imagining” a more just food system (Allen 2010). Place-based food projects, such as community gardens, seed banks, and direct consumer-producer schemes frequently play an important role in growing values, hopes, and visions that challenge colonial and capitalist logic. They can be sites of political subjectification, grow networks and relationships that collectively seek to change the food system, and act as spaces of prefigurative otherness. Interestingly, there is notable effort by the agrochemical industry to participate in many community-based local food projects. While partly a green-washing, there is also more going on in the industry’s desire to harness the direction of such spaces; it is not unknown that they can be sites of growing political awareness and participation. To give a specific example, projects like community gardens in neighborhoods surrounded by agrochemical operations are synergistic with campaigns for pesticide regulation. Plant and seed giveaways lead into conversations about patenting and privatization; organic methods spark dialogue about pesticide hazards; free food invokes the possibility of plantation worker communities being sustained by their own use of productive surrounding lands; Kānaka Maoli growing practices are modeled alongside stories of loss of sovereignty to colonial plantations; and dialogue about the food system acts as a window to wider politics.
It is problematic to make generalizations about the diverse and divergent projects that fall within the rubric of local food initiatives in Hawai‘i. Though distinct from much of what could come under this rubric, the role of Kānaka Maoli food practices in decolonial, sovereignty, and land struggles is critical and also influences other island food movements. For Kānaka, political activism has historically been inseparable from cultural and resource practices, including growing food and taking care of one’s land and people (Goodyear-Kaʻōpua, Hussey and Wright 2014; Gupta 2015). For colonial subjects, the continued existence and assertion of practices that ontologically disturb colonial-capitalist logic is a most important mode of resistance and reminder of something “other” (Moreton-Robinson 2015). Kānaka food projects often directly challenge and remedy structural plantation-economy inheritances and colonial dispossessions, including water diversions, knowledge and genetic expropriation, and land restoration. Moreover, Gupta (2015) argues that a growing number of Hawaiians today view food sovereignty as a pathway towards sustainable self-determination. Kanaka educator Manulani Meyer (2014) sees cause for inspiration in the rising number of creative projects across Hawai‘i’s food sovereignty and indigenous education movement, which are dedicated to perpetuation and practice of Hawaiian environmental stewardship values and knowledge. As she notes, they affirm and teach a Kānaka view of land, described by Pulama Collier:

‘Āina momona/Fertile land. The land is our ancestor, teacher, parent, provider and nurturer continually shaping and defining us. Hawai‘i is an island nation protected, preserved and nurtured by our oceans, lands, sky and heavens. Land/‘āina is abundant, rich, and living. We connect to our land as we connect to ourselves. To see our land as ‘āina momona is to also see ourselves as full of life, fertile, abundant, and healthy. (Meyer 2014, 100)

These principles, practices, and decolonial aspects of “local food” in Hawai‘i also effect non-Hawaiians and the consciousness and praxis of island agrifood movements and “relocalization” efforts.

Returning to more general food localization movements, an important task is to make local food projects not the end points of struggle themselves but aspects of building for wider structural transformation. For those concerned with equity and sustainability through local food, it is critical to keep these spaces oppositional in the sense of asserting difference and the impossibility of “coexistence” with the drives that manifest the corporate food regime (McMichael 2005). In this regard, such projects must move beyond mere development of niche ponds of good food or models that stay contained, and instead invoke possibilities that are incompatible with today’s corporate capitalist food system. The creation of truly environmentally and socially just food
production systems that are geographically embedded depends on negation of the current order.

Working from what is already immanent in the situation, a critical turn might be marked by bringing together widespread demands for “people before profit” with goals of local food production in ways that involve more socializing and democratizing political change. Rather than opposing capitalist logic as applied to agrochemical corporations while valorizing local markets as their antithesis, the movement might consider what a local food system by different logics could look like. For example, under the rubric of developing ecologically sustainable local food production, more emphasis could be put on democratizing ownership and workers’ cooperatives, government food support schemes, public procurement policies, and free public research, seeds, and education. More boldly and broadly, ideas might shift from niche alternative production units to food as an aspect of wider aims to socialize the economy, take international institutions under popular control, and embed science and technology in open-source principles (Jansen 2015). These themes are not absent from the movement and there are perhaps important turns in increased attention to the use of public lands and water, often with an eye towards production that will benefit more marginalized groups.

Leaving for now “the local” and continuing with other matters of the structural, it is worth briefly interrogating discourse around GMOs. While activist concerns related to genetic engineering are broad, they are often framed as problems of the “thing” itself (“anti-GMO”), rather than problems of the social conditions, relations, and paradigms that make a technology function as it does. This is not to dismiss that many are concerned specifically by potential consequences of cutting and splicing DNA, or of the science and knowledge regimes that condense around agricultural biotechnology (Jasanoff 2005). Rather, the point is that discourse and possibilities for systemic change remain limited when the social is not clearly centered as a subject of critique. Capitalist enclosure, commodification, exploitation, and power come to look like problems of a technology, rather than the basis from which particular uses of technology materialize. In activists’ most problematic focuses, the endpoint might be an agricultural system purged of genetically engineered foods, but thick with patents on conventionally bred plants, colonized by a few mega chemical-seed companies, and continuing to incentivize highly environmentally destructive practices and technologies in the pursuit of profit.

Further, a limited “pro” versus “anti” framing closes potentials of a technology embedded within different social relations (Stone 2002). There is a lack of consideration for how technologies might unfold in radically divergent ways if structured by logics of open sharing, democratization,
and meeting egalitarian and just social and environmental goals. This reflects a more general failure on the left to “help make science something other than it currently is,” as Noel Castree criticizes (2015, 5). None of this is to neglect that much rejection of agricultural biotechnology is in fact a critique of dominant science paradigms that have marginalized other knowledges and over-determined the future in highly anti-democratic fashion.

Finally on the subject of the structural is the question of the commons. Generally, GMO concerns are strongly embedded in belief of and demand for the commons. Most notably, social movements are rejecting the idea of seeds, genes, and life as ownable. In Hawai‘i’s movement, these calls for the commons extend to air, water, and land as elements of existence that all of humanity must be stewards of. Often grounded in Hawaiian epistemology, the movement declares that people have a collective kuleana to mālama (take care of) these commons, for both future generations and the non-human world. A language of the commons undergirds criticism of the agrochemical industry’s use of land and informs alternative visions of using land in ways that serve the common good. These are important discourses that indicate critical possibilities.

At the same time, discourse around the commons remains abstract and often contradictory. The movement is also tied to a resurgent American agrarian populism that glorifies propertied small farmers (Guthman 2004; Roff 2008). These ideals stem from Jeffersonian doctrine that was fundamental to the United States’ original creation myth, positing that a morally virtuous and economically independent society is best realized through a nation of small farmers (Liu and Apollon 2011). The continuing appeal and romanticization of American agrarianism erases an actual history of white male ownership, non-white and often slave labor, and dispossession of indigenous peoples. Agrarian politics in much of the U.S. continues to entail a landlord class whose interests typically oppose those of a producer class (DuPuis and Goodman 2005), and farming continues to be based primarily on white land ownership and non-white labor (Guthman 2008b). The dominant movement belief that a sustainable and fair agrifood system should be based upon a family-farm agrarian structure obscures American agrarianism’s historical and current contours and entrenches deeply held American ideals about private property. In these ideals, private ownership is linked to stewardship, with the yeomen farmer tied to their land and standing in opposition to “large,” “industrial,” and “corporate” farmers that have turned from an ethic of care to economic rationality (Roff 2008, 74). Resistance to industrialization and corporatization, then, is in the small family farm — “a spatially ill-defined productive unit managed by a single family (and an indeterminate number of hired labourers)” (ibid, 74). In the
colonial settler state of Hawai‘i, it might be asked who is entitled to private property stolen from Kānaka Maoli and who will work the land in agrarian imaginaries of a family farm economy?

Given the growing centrality of decolonialization in Hawai‘i’s movement, these matters of land control and private property are perhaps better dealt with than in agrifood movements in the U.S., and agrarian imaginaries in the islands cannot be reduced to their continental counterparts. There are clear differences, for example, in the way that stewardship is discussed most typically within a Hawaiian epistemological framework that precludes commodification and ownership. However, notable tensions and contradictions remain in movement discourse and dynamics around the commons, indigenous land rights, private property, and agrarian imaginaries that are especially strong amongst white American settlers.

The Universal

On matters of the local and structural, there is more to be asked about limitations and potentials for universalizing frames of justice. Hawai‘i’s agrochemical resistance is primarily a local political struggle that, while challenging a node of global capitalist power, is not consistently rooted in overarching global solidarity and visions of structural change. While focus on the particularities of the local situation is critical to immediate and urgent environmental justice, including relief from pesticide exposure, the movement’s wider emancipatory potentials lie in at the same time advancing global analysis and frames of justice.

Activists face real, strategic difficulties making demands for change within the particularities of local struggle while simultaneously affirming globalized refusal. Especially in mobilizing for policy change that is necessarily local, discourse becomes confined to localized concerns. Universal political claims for justice and equality are frequently “particularised in forms which disavow their universal kernel” (Jaques 2015, 154). At times activists feel the need to separate themselves from universal claims in order to argue the case for addressing local impacts. Often this is a distancing of oneself from “ideological” and “political” agendas, instead identifying with more acceptable expressions like “concern for community.”

The problem is not the focus on local particularities to inform local policies, but the declaration of local concern as the sole interest driving change. As with much activism today, there is a widespread sense that motivating change requires appealing to personal self-interest and proximate community concerns, and that the plight of the global “Other” escapes most people’s frame of care and responsibility. Whether activists agree with such logic, they frequently feel confined by it. In one expression of this, the language of internationalism and global solidarity
has flamed accusations of exploiting local communities to advance a global agenda that is assumed to be at odds with justice for local communities. Especially in framing issues to the broader public and policy-makers, there can be a tension between what will apparently serve immediate practical local goals of justice and what will serve more universal aims and principles. How to advance a politics that is responsible to both those who suffer most proximately and most distantly from oneself can be a real dilemma, and one in which the ideological hegemony of localism is pronounced.

Dealing with these challenges by opting for an unreflexive localism is highly problematic (DuPuis and Goodman 2005). Confined within the particularities of the local, distortion and recuperation are probable. Void a global frame, the local can adjust to the situation and absorb its resistance. For instance, the agrochemical industry’s local benevolence comes to stand in for the universal whole of exploitation. Moreover, fragmented and highly localized resistance opens the door not only to cooptation but to NIMBYism and more reactionary politics. Even in often unintended ways, localism can invoke conservative communitarianism (Gilbert and Fisher 2013) and nativist sentiment (Allen et al. 2003), and work to narrow frames of care and responsibility.

In one poignant example, Hawai’i activists frequently counter agrochemical industry narratives of “feeding the world” with the retort to “feed ourselves first.” Rather than challenging the very supposition that the industry is contributing to solving global hunger, activists opt for a line of argumentation that privileges one geographically bound group of people over any other. As might be noted more generally in social movement struggle today, capitalism’s use of the language of global morality is countered with a language of the local rather than a global-local politics that claims a universal ethic. In these localist politics, which are also notable in discourse around developing local food systems, a most problematic expression of “defensive localism” can arise that encourages responsibility and care within demarcated boundaries and pits regions against one another (Hinrichs 2003; see also Allen 2010; Harvey 1996; Allen et al. 2003; DuPuis and Goodman 2005). Given capital’s competitive and divisive dynamics, these tendencies are not unexpected and their appeal in social movements indicates normalization of capitalism’s possible and openings for regressive politics.

Considering activist strategy in these matters, it might be asked whether the setting aside of universal themes in order to seek immediate reliefs from harm can build an emancipatory politics as new local norms are instituted, or whether local appeals that disavow the global entrench anti-universal tendencies. It seems that a complicated mix of both is often at play. The
challenge is for the movement to continually seek ways to change the local situation that simultaneously involve instituting new, more emancipatory universal norms.

Anti-centralization and the matter of mobilizing for social justice through localist policy also requires comment. Devolution has served a wide variety of inegalitarian and racist local agendas in the U.S., particularly in housing, finance, schooling, and agriculture (DuPuis, Goodman and Harrison 2006; Cohen 2003). Moreover, ultimately capital thrives upon differentiation; devolution serves its interests of moving between localities of more and less exploitative potential (especially when coupled with international law that standardizes property rights, enshrines ceilings on regulation, etc.). In the case of pesticide drift in California, Harrison’s (2004) work shows that a devolved regulatory structure has exacerbated exposure and environmental injustice. By locating much regulation at the township and county levels, California State’s powerful agricultural interests have been able to keep pollution issues disconnected and operate without challenge in the most politically disenfranchised farmworker communities.

The case is different in Hawai‘i, where activists have focused not on policy that shifts regulatory power to lower levels, but on protecting local municipalities’ ability to regulate while also pushing for stricter regulations at all levels. However, while a focus on regulation at the municipal level is done with the intent of increasing overall regulatory protections, activists must also be cautious about the discourse of “home rule” and “direct democracy.” These localist policy discourses also informed the Progressive Era reforms that currently structure California’s pesticide drift policies (Harrison 2004). In the U.S., it has often been higher levels of government that defend civil rights, social equity, and the environment against lower levels. There is a danger of “home rule” becoming an axis of struggle in itself, working against more progressive policy at higher levels in the future. Agrochemical activists are not unaware of this and make demands for policies that enshrine the principle “floor, not a ceiling” in regards to pesticide protections. What is being flagged here is the potential for “home rule” to be regressive and the troubles of these discourses when they become a defining narrative. That said, home rule sentiment is also intertwined with decolonial struggle and its anti-imperial aims, and the points made here are somewhat limited in their application to policy battles around the agrochemical industry within a colonial U.S. regulatory framework.

There is also a need to be reflexive about trends privileging engagement at the local level to the neglect of thinking and mobilizing at broader scales. As touched, “the local” is not only the dominant frame of concern but is also the assumed most effective space of political action.
Moreover, and as above, there is a general celebration of the “local” as a pathway to realizing the ideal society, economy, and political life. And yet, addressing environmental problems in the U.S., ranging from air pollution to endangered species, has historically required higher levels of government working at broader geographical scale (Platt 2005; DuPuis, Goodman and Harrison 2006). Further, the global nature of today’s environmental crises requires a universal agent. That said, global, national, and metropolitan responses to environmental problems have come about primarily due to local mobilizations and often localized concerns, including local government units taking action and pushing new norms (Platt 2005; Elliott, Ackerman and Millian 1985). In environmental policy-making in the U.S., industry has worked to counter local policy largely through preemptive lawmaking at higher levels, be it federal, international, or state (Elliott, Ackerman and Millian 1985). Capital — and here specifically the agrochemical industry — works at all levels to capture policy, and it is also upon activists to maneuver strategically and engage at multiple scales.

Activists’ choices to mobilize at the local level for policy change cannot be reduced to a lack of understanding of the need for higher levels of change or a belief in the preferability of piecemeal and home-rule policy. Instead, local government is often the site that appears most accessible, and engagements frequently take place in strategic relationship to pushing other scales of change. While fighting for county ordinances, many Hawai’i activists are directly using this work to feed into state and national policy change. This work has increasingly brought Hawai’i activists into international activist networks as well. Rather than evaluate activists’ strategies in linear and straightforward ways, the complexity of their thinking and multiple-scalar engagements must be considered.

In all of this, it should be clear that the argument here is not for privileging either the “local” or “global” in activist mobilization and focus. Neither are clear categories; particularized and universal discourses and resistances are inseparable. It is through the particular that the universal is expressed, as the universal is not some ideal category but a materialist one. Thus, the considerations here are aimed towards a most emancipatory politics that is at once global and local. This involves looking at what challenges a more universalist local politics, as above, and also how internationalism emerges from within the local, to which this section now turns.

It would be a mistake to characterize even highly localist engagements as necessarily lacking internationalism. The movement in Hawai’i is product and aspect of a constant global circulation of ideas, strategies, experiences, and relationships. The ever-increasing connections and collaborations amongst activists worldwide is an often under-appreciated element of academic
critique (Shukaitis and Graeber 2007, 30; Klein 2000). Especially in proliferating food sovereignty, energy and climate, mining, and local environmental and resource struggles, sites of resistance are frequently globally linked in praxis (Klein 2014; Via Campesina 1996).

Moreover, internationalism and systemic struggle often emerge from within resistance that is initially impelled by what is proximate and immediate. This dynamic is perhaps occurring in Hawai‘i as connections with international food sovereignty and justice movements are being made. A notable internationalization has also opened space for more radical critique as voices and struggles of the global South come to inform Hawai‘i’s movement. In one example, a locally organized 2016 "International Food Justice Summit" brought frontline activist women from Nigeria, Mexico, Malaysia, and Switzerland on a speaking tour through the islands. They received wide applause as they spoke in radical terms about issues of agrarian land reform, U.S. imperialism, trade, gender oppression, poverty and inequality, migration and agricultural workers, and capitalist theft of the commons. These are notable expansions, especially given the fact that much imperial capitalist and global agrifood policy originates from within the U.S. but most American citizens’ awareness of food issues is contained within U.S. borders (Brower 2011).

Further, people’s engagement with the local is often itself a response to desire to effect the global. What happens in Hawai‘i has repercussions far beyond the islands. Today’s globally integrated supply chains create points of extreme vulnerability for capital (Panitch, Henwood and Lilley 2011) and Hawai‘i is a strategic node of resistance to the agrochemical industry’s global productions and power. Many activists are neither oblivious nor ambivalent to this and often even highly localized discourse is undergirded by goals of global justice. A most important matter becomes how to take cross-border solidarity to a level beyond knowing and caring about the plight and fight of others, to articulating common cause and coordinated struggle.

Localist identity is not in itself exclusionary, and the local can serve as an ideological foundation for either a reactionary or liberatory politics (Harvey 1996). Localist discourses and mobilizations often reflect important desires for democratic participation, freedom from oppressive global forces, a stronger sense of connection to other people in an atomized world, and a care for place. Moreover, as indigenous decolonial struggle in Hawai‘i emphasizes, there is need to claim particularity against the universalism of imperial powers and “mono-empirical” views of the world (Meyer 1998), while simultaneously advancing normative claims of the global possibility of a more just, egalitarian life for all. These subjects cannot be detailed here, except to say that it has become a most pressing matter to articulate a politics that is at once universal and local,
enhancing democratization and autonomy while embedded in global egalitarian frameworks and organization that also work against capital’s differentiated predations (Pantich, Henwood and Lilley 2011). In both critique and activist mobilization, this requires thinking more about social relations and less about physical and scalar configurations (ibid, 85).

**Augmenting the Emancipatory**

In general, within Hawai’i’s GMO Ground Zero Movement there is much work to be done building the solidarities and analysis that orient engagement in more radical system change. Particular capitals are the subject of resistance, rather than the logics and processes of capitalism itself. The problem of TINA becomes actual when there is a void of radical alternatives (Gindin et al. 2011), and as with other sites of environmental justice conflict there is a real danger of capitalism’s anarchic war on the planet and humanity being battled out between defense of livelihoods and defense of life-earth. The bankruptcy of the collective radical imagination severs potentialities beyond the lesser-of-evils — hotels, agrochemical plantations, or the military are all that are on offer. When certain social arrangements are assumed natural or unchangeable, it is accurate that regulating capital could result in lost jobs, economic deprivation, and cemented over agricultural lands. These effects are racialized, though Hawai’i’s movement often fails to grapple with the centrality of race to structural injustice and inequality.

The movement’s greatest possibilities lie in inspiring and engaging wider systemic struggle, both organizationally and ideologically. This is not an outside narrow prescription but an observation of much that is already happening — from the politicization of individuals, to the development of solidarities across issues that are marching in the streets and engaging long-term political organizing together, to the invoking of values and possibilities that upset capitalist rationality, to policy changes that directly confront Hawai’i’s plantation history and offer protections to those who have long suffered its consequences. Though typically more pragmatic than ideological, Hawai’i’s agrochemical resistance nevertheless can arrive at systemic understanding out of its experience (Harvey 2010). Most especially, in the development of “intersectionality of struggle” radical consciousness can emerge (Davis 2016).

Moreover, capitalist common sense is in fact being challenged by logics that emerge around Hawai’i’s movement. While often partial and contradictory, critique must not be separated from its emancipatory goals. When we end with the story of recuperation and ideological hegemony, we risk obscuring things worth engaging (Brown 2005). Even Occupy was not a coherent anti-capitalist movement but engaged a strange mix of ideologies and actors, from Libertarian conspiracy theory, to anarchism, to social democracy, to permaculture (Goldstein 2013, 32).
radical activist-academic, then, might work as Goldstein (2013) suggests to identify the confluence of desires to see the world fundamentally change in more egalitarian directions, and participate in amplifying liberatory aspirations. Following Goldstein, and by way of concluding summary, several elements that might be amplified from within Hawai‘i’s struggles are listed.

First, in demanding “health before wealth” and “people before profit,” and in opposing the destructiveness of the “corporate food system” in its insatiable “appetite for profit,” there is a calling attention to capital’s core drives and an invoking of antithetical values. In this, there is articulation of the fundamental conflict between the logic of capital and the very things most would claim to value. Second, the movement is a call for the commons — for some things as belonging to us all and the earth as humanity’s collective responsibility to steward. These principles are often guided by indigenous epistemologies, especially involving an ethic of love and care for land (Meyer 2013 and 2014). Third, the movement suggests the possibility of systems of production structured by logics different than capital. Specifically, there is an attempt to embed food economies in values of environmentalism and equitable access to nutritious food, as well as to escape chains of capitalist exploitation. While laden with challenges as described above, what people are aspiring for is a production system that is about meeting human needs rather than about the accumulation of profit. Fourth, the movement insists on people’s rights to participate in the decisions shaping their lives and society, and draws attention to capital’s grip over what presents as democracy. Fifth, the movement exposes and challenges the intimate connection between colonialism and capitalism, and feeds back into long struggles over land, water, and Hawaiian self-determination. And finally, Hawai‘i’s agrochemical struggles incite both collective responsibility and power. In activists’ bold challenge to global chemical companies they have inspired belief in the possibility of political change and illustrated its necessity. By invoking responsibility to be both stewards of place and to participate in shaping a better future, co-dependencies and collectivity are emphasized.

Most broadly and beyond Hawai‘i, increasing public engagement with food issues offers critical openings for radicalization of thought and action as collective values and desires collide with capital and are politicized. While tangled with problematic themes and surely not a monolithic field (Holt-Giménez and Shattuck 2011), current attention to agrifood issues is also a space ripe with conditions for “revolutions at the level of common sense” (Graeber 2012). At a moment when TINA is on shaky ground, the battle over rapidly changeable common sense is a most strategic field of struggle (Graeber 2012). Ambitions that run contrary to capitalist logic and presentation of immanent alternative capabilities can be made to weaken capital’s ideological pillars (Shannon, Nocella and Asimakopoulos 2012). In food activism, recognition and
exclamation of desires for augmenting our more cooperatively-oriented capabilities begin to render capital's various realisms untenable (Fisher 2009). As this coincides with illumination of the brutal dynamics of capital in the food system, it can become increasingly evident that capital is denying the very possibilities that it codes as impossibilities. Pushing the boundaries of collective thought towards wider horizons of possibility requires engaging, and indeed nurturing, seeds of justice, equality, democracy, and human solidarity in the rocky soils from which they are attempting to grow. There is no purity, no moment of leftist utopia. If the task of radical critique is to open new possibility, the post-capitalist and egalitarian ambitions within food activism are one space to focus some attention.
Consolidation, market expansion, and enclosure of what was common march on in the capitalist seed, agrochemical, and biotechnology industry. In 2016, after a failed bid for Syngenta, Monsanto is considering a pair-up with Bayer, while Dow-DuPont and Syngenta-ChemChina mergers are looming (Snider 2016). The “Big Six,” perhaps soon to be four, are seeking new frontiers of growth in ever-expansive commodification of plant genetics, the continual transformation of peasants into new consumers, and the harnessing of novel science and technology. While the capture of the seed and agrochemical markets by a handful of oligopolistic corporations is remarkable, it is only one piece of the business plan of these ever-larger agglomerations of capitalist power, some of which also branch into pharmaceuticals, plastics, finance, insurance, oil, and a wide range of chemicals. Such conglomeration is increasingly the norm of today’s global monopoly-finance capital, and has created “private tyrannies” antithetical to democracy and the commons (Chomsky 1998).

Capital’s movements, growth, creative destruction, and transformation are incessant. Capital has compelled rapid changes in Hawai‘i over the past century, from an outpost of U.S. plantation sugar production to a tourism-military monoeconomy with “diversified” agrochemical-GMO operations at the periphery. In 2015 and 2016, global maneuverings by the agrochemical oligopoly are again changing Hawai‘i’s landscape. DuPont, Syngenta, and BASF all abandoned significant portions of their Kaua‘i operations, consolidating facilities, shifting global research and product focus, and perhaps contemplating escaping Hawai‘i’s growing resistance. The voids left will be filled by the next corporate barons if not seized for other purposes. The industry will merely relocate its exploitations, likely to places where oppression is greater and resistance is met with a heavier hand. Puerto Rico and other tropical islands appear as prime candidates.

This thesis sought to answer two primary questions: What are the social, political, historical, and geographical conditions and dynamics that give rise to a global agrochemical-seed-biotechnology oligopoly and its local occupation of Hawai‘i? And, how is the existing order reproduced and challenged and what does the conflict around agrochemical plantation indicate about dominant logics of social possibility today? Its first task was to “destroy the appearance of a ‘natural order’” (Fisher 2009, 16) in the existence of a global agrochemical-seed-biotech oligopoly and its occupation of Hawai‘i. This has been an exercise not just of probing the particularities of the situation, but also what it reveals more generally about late capitalism and the politics of the possible. As this research has shown, the agrochemical-seed-biotechnology industry emerges out of the past decades’ intensification of capitalist logic, which has been a
breeding ground for oligopolistic corporations that increasingly function transnationally by way of state support. The conditions for its existence are multi-layered state-backed enclosures of both natural and cultural commons, and in particular imperial capitalist policies of the United States. Through amassed wealth, these major capitalist conglomerates hold political power that in cyclical fashion engineers ever-growing concentration of wealth.

The oligopoly’s local occupation of Hawai‘i is likewise conditioned upon a historical imperial relationship to the U.S. state and capital, including a socio-political and physical landscape partially remaining from oligarchic sugar plantation days. Consolidated resource control and power — reflected in and reinforced by the local state — facilitate the industry’s operations today, and more generally constrict thinking beyond a corporate monoeconomy and highly classed society. Public lands, waters, infrastructures, tax dollars, and research and education institutions are diverted from other possibilities to support the industry. These are flagrant gaps in the dominant narrative that sunshine is Hawai‘i’s “competitive advantage” for growing patented seeds engineered to withstand pesticides. Such omissions are never politically neutral (Jones and Murtola 2012a, 133).

The benefits and burdens of the industry’s occupation are grossly uneven and deeply racialized. Migrant workers and plantation communities shaped by sugar and pineapple face the highest exposure to dangerous pesticides used by the industry. As with other sites of environmental-health conflict, those living, working, and going to school near agrochemical fields experience a “miasma of uncertainty” (Steingraber 1997, 71). There is no mandatory disclosure of when, where, and what types of pesticides are used, making the extent of resident exposure unknown and complicating study of impacts. As Kaua‘i’s Joint Fact Finding Group concluded in June 2016, the task of evaluating the extent of harm cannot be satisfied due to “patchy and fragmented information; incomplete and often important but proprietary data; small statistical samples; confounding demographic variables; a lack of solid human and environmental health exposure data” (2016, 6). Observations of elevated rates of health conditions and multiple incidents of school and worker poisonings demand information, study, and regulation that both the industry and state have resisted. The manufacturing of doubt has been a primary tactic to delay regulatory action and avoid culpability.

Obfuscation of underlying, socially determined conditions that give rise to the situation naturalizes plantations, oligarchies, inequality, and injustice. In a critical analysis of the agrochemical industry’s placement in Hawai‘i, rather than sunshine, competitive advantage, free markets, human nature, and other claims of innateness, what emerges are capitalist
dispossession, imperial violence, state facilitation, monopoly markets, and constant maneuvering by the powerful to maintain their interests. To demystify and denaturalize plantations and oligopolies is to assert the possibility of a break in this trajectory.

Although it is possible, in factual terms, to construct alternative social arrangements, ideological and material forces work in dialectically-related universal and particular ways to continually reproduce the existing order. As such, detailed examination of the politics of the possible is most pressing and the task to which this thesis turned in Part III. As this research has shown, from within a wider moment marked by capitalist realism, disavowal of the structural, depoliticization, anti-politics, atomized cynicism, and increasing inequality and precarity, agrochemical operations can appear inevitable and resistance futile or objectionable. When issues are fragmented and treated as isolated dilemmas, collective capacity to perceive and respond to structurally and ideologically inseparable socio-economic-cultural problems is severely delimited (Giroux 2014). Disavowal of the structural and the narrowing of what it means to be “realistic” in a neoliberal era is attended by a high degree of suspicion or outright rejection of collective political engagement. Against disagreement, conflict, and the unruliness of democratic engagement is the appeal of “consensus,” voluntarism, and techno-scientific management as defined and led by those who hold power. Notions of consensus and the presentation of unity work to obscure division already existing in the social order and to depoliticize, performing a closure of challenges to inequality and injustice.

The story of Hawai‘i’s agrochemical conflict is not one of depressed imaginations that agrochemical industry exploitations are impossible to overcome. Many believe in and are mobilizing towards alternative futures. Bold regulations have been passed in three of four island counties despite record industry expenditure and attempted derailments from within government. Though all county laws are currently blocked in court, the movement continues to make remarkable strides in changing public discourse and galvanizing political participation. Different from much other U.S. GMO activism, Hawai‘i’s movement has drawn attention to producing communities, the inextricability of pesticides and current uses of genetic engineering, and the need for politics. While struggling in a moment marked by skepticism of and even disdain for political conflict, Hawai‘i activists work within and around ideas that foreclose the possibility of politics.

As this research has also shown, alongside rising resistance the moment in Hawai‘i is at the same time illustrative of the strict confinements of capital and dominant ideas about its inevitability. It is these hegemonic ideas that are too often unattended to, even reproduced, by
social movements themselves. The problem of "no alternative" is legitimized when there is a void of systemic alternatives. Jobs and livelihoods appear opposed to human health and the environment, and real material limitations from within the conditions of the present come to represent the entirety of possibility. Not only is the steady functioning of capitalist growth and accumulation “necessary” from within its structures, but immediate dependencies on particular capitals are entrenched. While alternatives are typically sought in exchanging local for global, or small for large, these frequently fail to consider structural compulsions of the political economy or to center social relations in what they seek to transform.

At the same time, in Hawai’i’s GMO Ground Zero Movement are hopeful seeds of transformative possibility not entirely knowable in how they will grow. Colonialism and capitalism arrived in the islands largely in relation to plantation agriculture and the possibilities for something anew are beginning to be thought in ways that until recently remained marginalized. The movement is central to a wave of organizing that unites decolonial, environmental, democratic, and increasingly labor and economic justice struggle, with potential for development of more radical consciousness. Correlatively, it is part of expanding intersectionality of struggle globally. Similar to many other struggles today, it interrupts powerful transnational capital at a localized node of exploit, extraction, and enclosure. In this resistance, it is linked to and an element of a global production and circulation of ideas and practices, especially having to do with land and resources, food production, energy, and extractive industries. Values antithetical to capital and expression of alternative possibilities are continuing to unfold. Matters of power, democracy, and the commons are at the center and there are strengthening trends that recognize “everything” must change (Klein 2014).

Indeed, though this thesis has investigated the heights of anti-politics, depoliticization, capitalist realism, cynicism, and anti-change — inseparable from the measurable expansion of neoliberal policy, global monopoly-finance capitalism, increasing inequality, and ecological destruction — there are also events that signal the possibility of radical breaks in cruel trajectories. Concurrent with the 1990s hegemony of neoliberalism, Latin America embarked bold anti-empire and anti-capitalist alternatives, the alternative globalization movement derailed the WTO, leftist activist organizing grew more transnational, La Via Campesina and the international peasant-led movement for food sovereignty emerged, and IMF Riots and countless battles were waged against the assaults of neoliberalism (Walton and Seddon 1994; Petras 1997). Since the global financial crisis began in 2007, a rising leftist tide has been marked by events across the Arab world, Occupy, anti-austerity movements in Europe, revolts against the market especially by the poor and hungry, and radical resource struggles. While such events signal widespread
challenge to capital and rupturing of neoliberal logic, resistance was never entirely extinguished in the late twentieth century defeats and demoralizations of the left, especially for the most destitute in the global order (Taylor et al. 2016).

In 2016, at the heart of capitalist empire, gaping cracks are being carved and exposed in capital's colonization of the social imagination. Riding a swell of social movements and protest including Occupy, Black Lives Matters, Blockadia and climate justice, Idle No More, Fight For 15, Dreamers and immigrant rights, trade-union revolts, Democracy Spring, and many others, democratic socialist Bernie Sanders' bid for U.S. president broke through flagrant suppression by corporate media and the political establishment. The campaign offered an alternative to more neoliberalism or racist nativist reactionism and revealed strong left-wing sentiment in the bastion of capitalism, empire, and white supremacy. The leftist populism that erupted around the Sanders' campaign galvanized organizing and imagination that has the potential to reach far beyond the election cycle.

It has become increasingly pronounced worldwide in 2016 that this is a historical moment of decision. Fascism and xenophobia, more extreme austerity and neoliberalism, and fattened empire are all scrambling to claim power from crisis, while alternatives are being spoken and witnessed in ways that they have not for some time. The pace of change is quickening; the direction of that change is up for grabs.

Emergent democratic and egalitarian political visions must be expanded. They must assert that not only are we capable of different sorts of futures, but that systemic change is the only "realistic" option. When the ideological instruments of "no alternative" or a "natural" order of things are removed, what we are left with is a society in which the 62 richest people are as wealthy as the poorest half of the world (Oxfam 2016); a society that is compulsively producing the non-negotiable planetary conditions for its own extermination. As Jacques Derrida reminds those who declare this the end of history, the end of politics, and the end of possibility:

For it must be cried out, at a time when some have the audacity to neo-evangelise in the name of the ideal of a liberal democracy that has finally realised itself as the ideal of human history: never have violence, inequality, exclusion, famine, and thus economic oppression affected as many human beings in the history of the earth and of humanity. (1994, 85)
The urgent gravity of the global situation necessitates radical, at the root, response. There is no future in capital's realisms. When common sense posits “tradeoff” or “balance” between livelihoods and the earth, the choice is only for further preventable human misery and suffering. Considering little ways to escape capital’s worst excesses here and there is not sufficient.

Further, as this thesis has chronicled in the case of agrochemical occupations of Hawai’i, when we limit our demands, even dwarfed bits of justice can be made impossible. It is harder and harder to find “middle-road” solutions. When wider system change and abolishing capitalist logic is not an option, circumstances appear immutable and injustice is enshrined as the inevitable order of things.

This is not to suggest that justice is only achievable after the revolution. Instead, what is being argued is that the constant work of destabilizing that which shuts down — of recovering possibility from the terror of impossibility — is the most critical task of politics today. Our political demands and collective imagination must seek the “impossible,” recoding the attainable. Slightly reordering the famous Situationist slogan, politics today requires being “impossible” by demanding what is realistic. It requires “reveal(ing) what is presented as necessary and inevitable to be a mere contingency” (Fisher 2009, 16).

Whether mobilizing for local pesticide protections, blocking fossil-fuel extraction, fighting for a living wage, organizing for socialized medicine and education, or any other target of mobilization, struggle must involve reorientation of common sense towards wider horizons of the possible. The particularities of a political conflict cannot be the whole of a struggle. Emancipatory politics must consider more than the immediate and proximate. Further, as this thesis has chronicled, the universal and the systemic are required to refuse the singular point of possibility within a situation. Even in the most specific local struggle, there must be radical “at the root” thought and imagination that opens possibilities of wider change through “revolutions at the level of common sense” (Graeber 2012, 165). Harnessing immanent and immediately available possibilities in turn opens new horizons of possibility and unbinds constrictions on the thinkable.

Revolutions at the level of common sense might be expanded in relation to the commons as they increasingly become a focal point of political struggle. Though discourse around the commons is also being absorbed by capitalist logic, the commons can be a pillar for an emancipatory politics of possibility. The power of capital is the power to amass private wealth through exclusion from and predation of what is common. The struggle for non-exclusion — the
struggle for the commons and against their enclosure by capital — is the struggle for a life beyond the relations, logics, ordering, and compulsions of capitalism. The commons are a foundational entry point for thinking radical alternatives premised on egalitarianism, democracy, and a relationship of co-regeneration between humans and the rest of the earth. We live in and from the commons, and the truth of the commons is also the negated truth of equality that precedes capital’s structuring of the world.

The claim of and struggle for the commons must also be the struggle against the ordering of the world and the distribution of its abundance along lines of race, gender, sexuality, nationality, ability, etc. Hawai’i’s GMO Ground Zero Movement, as well as economic justice movements touched on above, indicate the need to more squarely face the inseparability of structures of the political economy and structures of racial, gender, colonial, and imperial injustice. Rather than ranking oppressions and crises, their inextricability must be articulated in order to open truly transformative alternatives. Incredible difference and inequalities within and between the “99 percent” cannot be glossed over or treated as a side issue; failing to deal with intersecting forms of injustice weakens and divides social movements.

Recognizing and politicizing the fact that social possibilities are far beyond what is normally imagined is not to resort to utopian fantasy. Clearly people are capable of greed and violence, often projections of our dominant institutions into our very selves (Shannon, Nocella and Asimakopoulos 2012). A fully liberated society is an impossibility (Mouffe 2013). There is always a “latent aspect, or dialectical possibility” within society; social systems are based on not only clashes between interests and classes, but the pursuit of different values that pull people in multiple directions (Graeber 2004, 25). As Derrida says, democracy is always “to come” (1994, 60). While struggle will never eradicate power relations or end the work of “striving for ever more justice” (Jones 2012, 89), social orders structured around the best of our human capabilities rather than the worst would make worlds that are beyond what is dominantly imagined today.

Such worlds are not outside of the existing situation in pure novelty. They are not “another world” that is possible as the World Social Forum has sloganized. Rather, they are immanent within what already exists, including the vast majority of our “communistic” social relations and practices (Graeber 2010 and 2011c; Lappé 2012; Wilbert and White 2011; Shannon, Nocella and Asimakopoulos 2012). Despite the savagery that our system demands, we do not abandon our most innate drives for mutual aid, compassion, and solidarity. What is most evident all around us, all the time, is our incredible generosity and sensitivity to fairness and the wellbeing
of others. Though frequently negated, overlooked, suppressed, or enclosed, such capacities are already here and could be the driving force of our common lives together.

We must not end with the tale of despair and futility, taking today’s horrors as evidence that we are incapable of something better. By paying more attention to what is already going on around us all of the time in our lives in common, imagination of the possible is expanded. Liberatory visions spring from recognizing cooperative dependencies, desires, and their boundless potentials. The world that the vast majority of us long for is actually here, innate in our daily interactions and aspirations. It needs only to be freed.
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