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Asian American Narratives of Building and Unbuilding: An Exploration of Infrastructural Method

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Asian American Narratives of Building and Unbuilding:

An Exploration of Infrastructural Method

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Gregory Tadashi Toy

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ABSTRACT OF THE DISSERTATION

Asian American Narratives of Building and Unbuilding:

An Exploration of Infrastructural Method

by

Gregory Tadashi Toy

Doctor of Philosophy in English

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Professor Rachel C. Lee, Chair

This dissertation examines the ways in which Asian American writers situate infrastructure as the locus for narratives of cultural, political, and social conflict. In adopting an infrastructural framework, my dissertation shows how an attention to the built environment can bridge the conceptual and methodological schisms between Asian American studies and post-humanist strains of ecocriticism by exploring how material technologies, sociotechnical and legal processes, as well as the natural environment produce the real and imagined spaces of US empire through which Asian immigrants and their American-born descendants migrate. I argue that recurrent descriptions of environmental matter in literary works, archival documents, and multimedia texts render visible the ways in which Asian American subjugation, including contract labor and internment, is intimately linked to the reshaping of the US built environment through the development of critical infrastructures across the American West and the Pacific. Because infrastructure can facilitate the transformation of distant, foreign, or hostile environments for resource extraction or ruination, it has often

served the project of US settler colonialism and imperialist expansion by privileging specific populations and places for (re)production. To this end, I organize my dissertation around entangled sites of environmental and social injustice that highlight the unequal provisioning and differentiated citizenship of Asian immigrants and their descendants: the incarceration of Japanese Americans at Manzanar War Relocation Center during WWII; the importation of Asian contract labor to Hawai'i in the late nineteenth and early twentieth centuries; and the enrollment of Asian care labor in emerging biotechnological industries predicated on the reproduction of flesh. In making legible the violence of infrastructure, my project gestures towards an alternative vision of and approach to infrastructure that includes the embodied beliefs and practices of ethnic, Indigenous, and non-Western communities.

The dissertation of Gregory Tadashi Toy is approved.

Victor Bascara

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2021

TABLE OF CONTENTS

List of Figures vi

Acknowledgments vii

Vita ix

Introduction 1
Stories of Infrastructure and the Built Environment

Chapter One 31
Relocating Manzanar: Environmental Histories of Racial Violence

Chapter Two 73
Building Futures: Remapping the Terrain of Multiculturalism in Hawai‘i

Chapter Three 151
Reproducing Flesh and Labor in Asian/American Speculative Fiction

Epilogue 199
Wasting Away: Slow and Infrastructural Violence in Rita Wong's *forage*

Works Cited 222

LIST OF FIGURES

Chapter Two

Figure 1: Screenshot of Kahauiki Village website 74

Figure 2: Map of Ahupuaʻa on Oʻahu 96

Figure 3: Map of East Maui Irrigation System 110

Figure 4: Map of Keaʻau Village 126

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Stories of Infrastructure and the Built Environment

Introduction

Asian American Narratives of Building and Unbuilding argues that infrastructure has been a salient preoccupation of Asian American studies and Asian American literary studies since the inception of the fields. This project identifies how the focus on infrastructure has been discussed in Asian American studies primarily through labor contributions to US nation- and empire-building. For instance, Ronald Takaki has sought to decipher signs of Asian laborers' presence across the American West to counter their perception as perpetual foreigners while Robert Hayashi has explored the waterways "haunted" by the spectral hand of Asian labor, to which he attributes the building of the US landscape and its symbolic meanings. In this dissertation, I show how an infrastructural approach is more productive for exploring Asian American literary and cultural production than adjacent methodological frameworks, such as thing theory and material culture studies. An infrastructural approach to Asian American literature and culture brings into focus the entangled relationship between Asian American subjectivity and US national identity—how white supremacist national identity has been upheld as a project of technological and infrastructural "advancement" and as a form of progress in democratic political processes qua governance.

This dissertation builds from the observation that literary studies and Asian American studies are primarily focused on environmentally "sustainable" infrastructures given the current interest in the Anthropocene. Yet, the contributions of Asian laborers to US infrastructural development have primarily been memorialized in relation to what I call "heritage" infrastructures linked to petrochemical, intensive agricultural, carceral, and transit industries as well as other destructive systems that extend US imperial ambitions under the guise of nation-building. Although cultural anthropologists have approached infrastructure as an archaeology of differential provisioning—a material structure that documents the history of unequal resource distribution—that framework is less useful in Asian American studies given the ongoing destruction, erasure, and

transformation of infrastructures with which Asian immigrants have engaged across the American West and the Asia-Pacific. For instance, all signs of Manzanar War Relocation Center, which functioned as both a prison and an irrigation colony, were bulldozed in the aftermath of World War II (WWII) before being reclaimed by Japanese American activists. Moreover, the last sugar company in Hawai'i, Hawaiian Commercial and Sugar Company, produced its final harvest in 2016, and its complex network of irrigation ditches has been reclaimed by the encroaching jungle or repackaged for touristic purposes. Although the breakdown of infrastructure normally makes visible a system that works to conceal itself, its ultimate vanishing—an act perpetrated by capitalism—makes difficult the incorporation of these material archives for scholarly inquiry. While traces of these systems might be recovered through traditional archaeological excavation, I suggest that the legacy of these heritage infrastructures is primarily kept alive in the stories told by the laborers' descendants.

Drawing from environmental justice, critical race theory, and Indigenous studies frameworks, I offer an expanded vision of infrastructure—one that challenges parochial Euro-American conceptions of infrastructure as heroic engineering projects that reflect man's triumph over nature. From a Western standpoint, major building projects that facilitate industrialization and resource development are privileged sites of an exclusive modernity, prized for their potential to transform people and the environment. In imagining an alternative approach to infrastructure, I position Asian American literature and culture as a vital archive for tracing the forgotten or ruined infrastructures that have disproportionately distributed knowledge, resources, and harms amongst ethnic communities in the US. Through archival research and site visits, I engage with the repertoire of Asian American and Indigenous cultural memory, the embodied practices and beliefs that offer an alternative to the written archive and that highlight transnational, interethnic contact zones. An

attention to the built environment in an Asian American context thus brings into focus the way in which Western forms of infrastructure are entwined with carcerality, militarism, and securitization.

Critical Infrastructure Studies

What is infrastructure? The term evokes vast sets of collective equipment necessary to human activities, such as bridges, channels, pipes, ports, roads, tracks, and wires. These emblematic structures suggest that infrastructure is understood as a "system of substrates" (Star 380) on which society operates. Thus, it is not surprising that scholars have framed infrastructure as the so-called "interface by which we interact with the biological and the technological world" (Belanger 278), a means of facilitating interactions between people and their surroundings. Despite its central role in everyday life, infrastructure has earned the reputation of being associated with "boring things" that "appear as lists of numbers and technical specifications" (Star 377). Yet, the drama of infrastructure is made visible when the system breaks down; leaks, potholes, delays, outages, and other forms of rupture make us acutely aware of infrastructure and its need for regular maintenance.

Moving beyond the perceptions outlined above, scholars have recognized how infrastructure does not merely operate under the surface and behind the scenes but has also come to play an important role in cultural, political, and social matters. While the study of infrastructure is not new, it has only gained currency in academia as a conceptual and methodological framework in the last few decades thanks to the work of social scientists at the intersection of cultural anthropology, information studies, and urban studies. In the 1980s and 1990s, scholars imagined infrastructure as a series of small, independent technologies whose merger into larger systems enabled them to be thought of as infrastructure. Two forms of infrastructure studies emerged as a result, following Thomas Hughes' focus on large-scale technical systems like the electrical grid and Susan Leigh Star's interrogation of the sociology of information systems.

Today, the most common definitions in this expanding body of scholarship derive from Brian Larkin's characterization of infrastructure as "built networks that facilitate the flow of goods, people, or ideas and allow for their exchange over space" (328). Larkin suggests that infrastructures are distinguishable from technologies insofar as "they are objects that create the grounds on which other objects operate, and when they do so they operate as systems" (329). Put simply, they are "things and the relation between things" (329). Yet, this "relation between things" is not as straightforward as one might think. Larkin pushes back against the common formulation of infrastructure as a "system of substrates" by showing how that framework presumes a clear, linear relationship between an "underlying system and the phenomenal world" (329). In thinking about the software protocols, electricity, and telematics required to operate an object like a computer, Larkin illustrates how that simple relationship is "recursive and dispersed" given the sheer quantity of material that comprises a single system (329-30).[1] He suggests that "discussing an infrastructure is a categorical act" that requires scholars to choose "which aspect of which network is to be discussed and which parts will be ignored" while recognizing how infrastructure fundamentally operates on simultaneous levels (330). Naming an infrastructure is thus to bring into relation a series of "built things, knowledge things, or people things" that comprise the network (329).

In "The Ethnography of Infrastructure" (1998), Star explores how infrastructure mediates relationships, especially when infrastructure is not intended to serve specific individuals. She accomplishes this by distinguishing between users, technicians, and non-users who experience infrastructure in different ways: "[f]or a railroad engineer, the rails are not infrastructure but topic. For the person in a wheelchair, the stairs and doorjamb in front of a building are not seamless

[1] This capacious definition allows for an expanded view of infrastructure that accounts for the advent of digital technologies by recognizing the physical and abstract components that make possible the functioning of these systems. Because we have become increasingly dependent on automated systems that require advanced technical knowledge, abstract entities, such as protocols (human and computer), regulatory standards, as well as cultural and digital memory, have been categorized as integral aspects of infrastructure.

subtenders of use, but barriers" (380). This leads Star to identify infrastructure as a "fundamentally relational concept" that is dependent on one's positioning in society (380). As she suggests, "[o]ne person's infrastructure is another's topic or difficulty" (380). She explains how "the cook considers the water system as working infrastructure integral to making dinner" while the city planner and the plumber view that same system as "a variable in a complex planning process or a target for repair" (380). This perspective is shared by the Critical Infrastructure Studies Collective, an informal network of scholars working on infrastructure. The group defines infrastructure using a series of verbs that showcase the range of possible experiences enabled or foreclosed by infrastructure and that reveal its power to dictate the identity of its users and non-users: "[i]nfrastructure supports, connects, separates, constrains, frees, transforms, and communicates who we are" ("Critical Infrastructure Studies").

What this suggests is that the conditions of everyday life are not experienced in a standardized way; an individual's positioning in society, influenced by factors including their race, gender, sexuality, class, and/or disability, makes these experiences of infrastructure fundamentally heterogenous. Consequently, infrastructure is responsible for producing experiences of difference and othering, contributing to the racial geography of the US in producing populations that are deemed worthy or unworthy of support. As Jessica Abel and Leo Coleman suggest, the so-called "double face of infrastructure" means that it has the capacity for both promise and peril, liberation and imprisonment (ix). Chinese-Australian artist Shaun Tan illustrates the feelings of dislocation and unbelonging experienced by immigrants in foreign territories in his acclaimed graphic novel *The Arrival* (2006). As the protagonist migrates through the unfamiliar spaces of his new home, he is confronted with new mechanisms of resource distribution that render him confused and isolated. Yet, for those around the protagonist, their lives continue uninterrupted, having learned the customs and practices associated with the infrastructures that facilitate their communication, movement, and

work. Tan's graphic novel thus makes legible the way in which questions of immigration and assimilation are fundamentally tied to infrastructure; that is, reforming one's habits in accordance with the adopted country's beliefs is predicated on learning how to negotiate systems of resource (re)distribution that make possible productive participation in society, that undergird modern life. Yet, even when immigrants are brought into the infrastructural network, their inclusion does not necessarily preclude the exclusion of others from the system.

Infrastructure's capacity to determine who is included and excluded from communities have made it a generative site for scholarly inquiry in cultural anthropology. In *The Promise of Infrastructure* (2018), Hannah Appel, Nikhil Anand, and Akhil Gupta expand on Larkin's definition by foregrounding the cultural, political, and social dimensions of infrastructure, framing these built networks as indices of "the achievements and limits, expectations and failures, of modernity" (26). Although infrastructure is intended to be a durable entity that exceeds the lifespan of humans, the relations between people, materials, and institutions are inherently fragile and fraught with violence. Similarly, this differentiated experience of infrastructure animates Lisa Parks and Nicole Starosielski's *Signal Traffic* (2015), a volume that draws upon interdisciplinary methodologies and frameworks to show the effects of an "infrastructural disposition"—a mode of engagement with the process of distribution, the materiality of (media) distribution, and the relationship between technological literacy and public involvement in infrastructure development. This "infrastructural disposition" suggests that certain populations may be more oriented towards the use of certain systems than others. And Penelope Harvey, Casper Bruun Jensen, and Atsuro Morita describe the physical and affective aspects of infrastructure in characterizing these networks as "extended material assemblages that generate effects and structure social relations, either through engineered (i.e. planned and purposefully crafted) or non-engineered (i.e. unplanned and emergent) activities" (5).

The flexibility of infrastructure as a conceptual tool and methodological framework—its ability to bring into focus a wide range of material and abstract relationalities—has drawn skepticism from scholars, who question whether the infrastructural turn in the humanities and social sciences is an ideological dead-end, a term that simultaneously represents everything and nothing. Hetherington suggests that "infrastructure is suddenly a buzzword of the highest and most obnoxious order" (6). Moreover, Sandra Calkins asks, "Has it merely become a replacement for other established terms, such as actor-network, assemblage, or technical system?" (816). Even as infrastructure has increasingly become a topic of conversation and inquiry in the last decade, scholars of infrastructure have grappled with the utility of infrastructure given the increasing number of frameworks that have been adopted to explain cultural, political, and social phenomena. What, then, does infrastructure as an analytical tool accomplish that adjacent concepts, like built environment and technology, cannot?

This dissertation takes up this question by considering how infrastructure has shaped perceptions of self and community for Asian immigrants and Asian Americans at different historical junctures. I suggest that the Asian immigrant has historically been framed as the maintenance technician, one who does not benefit from infrastructure but rather who must negotiate the less charismatic aspects of infrastructure (tendency to fall into disrepair; susceptibility to decay), or the non-user, one who does not receive any promised benefits from the development of infrastructure. Although Asian immigrants and their American-born descendants have gained economic and social mobility in the late twentieth century under the aegis of the model minority myth, albeit at the expense of other racial and ethnic minorities, contemporary writers like Chang-rae Lee and Margaret Atwood imagine how the Asiatic figure is repeatedly placed in systems that render infrastructure a topic or difficulty for specific characters. In Lee's *On Such a Full Sea* (2014), the protagonist's migrations through different social formations wrought by infrastructural (dis)investment repeatedly cast her as an infrastructural technician, but scholars like Kathryn Cai have theorized that the

protagonist's affective flatness should be understood as a mode of passive resistance, which I rearticulate as a strategic attempt to wrest power from infrastructural users who are incapable of seeing her as anything other than a form of care or maintenance labor.[2]

Infrastructural Narratives

By tracing institutional histories and documenting technological installations while chronicling the cultural uses of cabled sites in Hawai'i, Starosielski posits "the resolute materiality of network infrastructure and its entanglements with the turbulent histories of the Pacific, ranging from local cultural practices to large-scale projects of colonization and militarization" (2). As Starosielski suggests, infrastructure is not only entrenched in the physical landscape, but also derived from and reflective of the cultural, political, and social environments in which it is located. In recognizing how infrastructure "has been produced in and transformed by the environments it extends through," she situates infrastructure as a locus for narratives of cultural conflict (227). These narratives are registered not only in oral histories shared amongst residents and workers of zones shaped by infrastructural development or ruination but also in the way in which people and places are memorialized.

Infrastructures are, in the words of Larkin, "aesthetic and semiotic vehicles" responsible for shaping the desires and fantasies that animate narrative (329). Abel and Coleman echo Larkin's comments in their introduction to the Fall 2020 issue of *Verge: Global Asias*, a special edition focused on Asian infrastructures: "What fabulous statistics and stories these infrastructural interventions produce!" (viii). As a historian and political anthropologist, respectively, Abel and Coleman view infrastructure as a contemporary representation of the future built on the accumulated violence and

[2] See this dissertation's third chapter for a breakdown of the farmed fish infrastructure initiated by the Chinese American protagonist, Fan.

exposures of the past. Yet, the works collected under this rubric are primarily anthropological, overlooking the role that narrative plays in not only shaping potential futures wrought by infrastructure but also registering the effects of infrastructure on those whose lives are changed by these assemblages, whether they are at the receiving end of resources or those left to fend for themselves. While artwork, memorials, and other forms of public engagement serve as aesthetic representations of the affects and desires promulgated by infrastructure, imaginative literature remains marginalized. This marginalization might be understood as a move away from questions of representation. If infrastructure is the text itself, formalized through bureaucratic and legal documents that are themselves saturated with a certain kind of poetics, then what role does literature play in understanding the local and national aspirations enfolded in the structures?

Infrastructure has remained an integral aspect of canonical works of American literature even as literary critics have tended to focus on adjacent issues (labor, difference) and concepts (landscape, built environment, technology). For instance, Herman Melville's *Moby Dick* (1851) unfolds along the whaling routes traversed by New England whalers, and an attention to infrastructure allows us to understand the Pequod, the ship commanded by Captain Ahab, as a utopian space of homosociality. The narrator of Ralph Ellison's *Invisible Man* (1952) inhabits the coal cellar of a whites-only building, a space that he has transformed with the installation of 1,369 light bulbs, harnessing energy infrastructure to achieve literal and figurative illumination despite his so-called invisibility. And the Brooklyn Bridge, the focus of Hart Crane's celebrated Modernist poem "The Bridge" (1930), has been imagined as a figurative vehicle for connecting the past and the present, the individual and the nation.

Literary criticism has only recently adopted infrastructure (as distinct from landscape or built environment) as an analytical tool for excavating developing or ruined cities. Even so, such studies

have been primarily limited to urban spaces.[3] In "Dreaming of Infrastructure" (2007), Patricia Yaeger suggests the need for an alternative way of understanding the abandoned and decaying cities of the contemporary moment, places that have been shaped by European and American colonial and neocolonial ambitions. In proposing "metropoetics," an alternative "practicum for looking at city literature" that includes attention to "the predicament of decaying or absent infrastructures," Yaeger identifies several features of "city literature" that could be understood as traces of infrastructure in an overcrowded urban context: "lists of endless dependent clauses; the disappearance of punctuation, suggesting the evisceration of landmarks; parallel constructions that mix squalor and lyricism; images of bodily invasion and of interpenetrating consciousness" (13). More importantly, she suggests that "infrastructure's role in literature is unpredictable and varied. First, in many poems and novels these organizing structures are present but barely visible—you have to dig to find them or watch for them as reality effects, as the unthought know" (16). Even if infrastructure cannot be discerned in the narrative, its narrative invisibility is not synonymous with absence. Rather, when infrastructure is invisible, Yaeger reminds us to "read this absence as a taking for granted of infrastructural privilege" (17), of being in a position to ignore the ubiquitous systems that have rapidly transformed modern life in the wake of the Industrial Revolution.

While Yaeger suggests that language (i.e. syntax and diction) is the primary form through which the traces of infrastructure can be discerned, other literary scholars have adopted adjacent frameworks in considering the utility of an infrastructural approach. For instance, in his reading of Karen Tei Yamashita's *Tropic of Orange* (1997), Shouhei Tanaka reads the novel's form—its grid-like structure organized using Lotus, a precursor to Microsoft Excel—as an authorial attempt to inscribe the formal qualities of transportation infrastructure in narrative: "*Tropic of Orange* suggestively likens

[3] Another approach to understanding infrastructure in literary studies might focus on the circulation of books in the public or the technologies that make possible the development and dissemination of traditional and electronic texts.

its own narrative architecture to a freeway infrastructure with its own narrative merges, lane changes, and accelerations" (206). These narrative shifts are made possible by the novel's "narrative grid inflected by automobility," which "shapes our basic sense of interactivity, movement, and habitation through space and time" (206-7). I interpret Tanaka's formal analysis of Yamashita's narrative in the following way: the practice of reading is not only characterized by narrative moments of flow and rupture but also shaped by the infrastructural systems that contribute to our embodied experience of lingering with a physical or digital book. An analog to Yamashita's novel is Chris Ware's *Building Stories* (2012), a graphic narrative charting the lives of four individuals in Chicago apartment buildings. Unlike traditional literary forms, the book is formatted as a box containing books, pamphlets, scraps, and boards that readers must literally build to complete the narrative. Like Yamashita, Ware suggests that building narratives are akin to developing physical structures that give shape to everyday life, comparing the human hand involved in narrative worldbuilding and infrastructural development.

The most common method of approaching infrastructure in literary scholarship has been through direct representation of the physical structures in literature. Although she does not cite the emerging body of anthropological scholarship that forms the basis of critical infrastructure studies, Jina B. Kim locates infrastructure, what she describes as a human-material network that materializes state power in the form of resources, in the depictions of urban space in recent works of multiethnic US fiction. Kim adopts infrastructure as a means of interrogating stereotypes that pervade multiethnic US literatures, particularly those of the welfare queen, the disabled subject, and the undocumented migrant. She approaches it as a means of "highlighting human contingency on human and material systems of support alike" with so-called "mundane" infrastructures becoming visible in the wake of welfare movements that seek to right the wrongs of uneven resource distribution (2). For Kim, representations of infrastructure in multiethnic US fiction "construct the

scaffolding for a rival social and narrative world" (8) that "documents the disabling violence of state neglect while foregrounding a public ethics of care" (10). Kim builds on the idea that, in multiethnic and other minor literatures, the city is a space that has been shaped in visible and invisible ways to benefit and disadvantage different communities based on their bodies and belief systems. The multiethnic communities that emerge in response to governmental neglect offer visions for what it might mean to exist outside the boundaries of governmental power and provide community support in a more equitable manner; that is, multiethnic authors write into being alternative understandings of infrastructure's potential.

This project extends this nascent body of scholarship by attending to the aesthetic, formal, and linguistic attempts to register infrastructure in literature. As I demonstrate, the study of infrastructure draws from the methodology and theoretical orientations of literary and cultural studies, though it has not gained as much currency in the humanities as it has in the social sciences. Scholars of infrastructure repeatedly remind us that infrastructure is an aesthetic object, a semiotic vehicle capable of conveying national and local aspirations. Yet, this rhetoric is as much visual (architecture, design) as it is textual (advertisements, contracts, legal documents.). Literary and cultural studies offer an avenue for exploring the aesthetic dimensions of infrastructure. How we think and discuss infrastructure bears an uncanny resemblance to the approaches undertaken in literature departments, especially those frameworks focused on worldbuilding. Although infrastructure may be built with a technical or semiotic purpose in mind, it is never certain whether the project will be completed or suspended indefinitely. As a form of speculative development, it may not have a defined use or user at the time of its construction, and its construction may require new methods and technologies to overcome environmental and engineering challenges. Infrastructural projects thus begin as a form of fiction, an opportunity to imagine the rewriting of local, national, or global narratives of power.

I specifically engage with literary and cinematic works that resist the progress narratives that frequently attend infrastructure associated with modernity. Works like Maxine Hong Kingston's *China Men* (1980) and Milton Murayama's *All I Asking for is My Body* (1975) position disruptions to the capitalist system, whether it be through extravagant waste (pissing on the world) or cheating (gaming the roll of the dice in craps), as alternative modes of living outside the capitalist worldbuilding enacted by infrastructure. These texts suggest that Asian figures are useful to infrastructure but do not want to be reduced to mere infrastructure, cogs in the figurative machine. Others like Lee's *On Such a Full Sea* and Bong Joon-Ho's *Okja* (2017) show how capitalist societies attempt to conscript Asian figures into infrastructures of the flesh, taking their flattened affects as a sign of accommodation rather than resistance. Moreover, I trouble the association of infrastructure with urban settings, showing how the urban and the rural are brought into relation through the building of infrastructural networks. This is evident in Nina Revoyr's *Southland* (2003), a novel that situates the relocation of Japanese American internment to the deserts of the American West as an act intrinsically linked to processes of urbanization.[4]

I differentiate this project from the aforementioned attempts to articulate a literary approach to infrastructure by bringing a constellation of archival, cultural, and literary materials into relation, a collection of documents that challenge urban space as the privileged site of infrastructural inquiry. As I demonstrate through my forays into the Owens Valley, the windward shores of the Hawaiian Islands, and the empty expanses that characterize speculative visions of capitalist futures, the stories that unfold in urban space are only part of an ongoing narrative of disinvestment. At the same time, I push back against the focus on schematics, planning documents, and other cultural ephemera as primary texts for infrastructure studies and instead position literature and culture as a crucial but missing element from existing scholarship. Larkin has recognized how the power that infrastructure

[4] See this dissertation's first chapter for a discussion of how the novel collapses the distinction between urban and rural.

represents "cannot be merely read on the surface of infrastructure" (334); rather, it has to be discerned in the changes and transformations wrought by infrastructure. Here, I view the close reading of literary and cultural production as a means of reading beyond the surface of infrastructure, interrogating the complex entanglements and uneven power relations that infrastructure embodies.

Asian/American Buildings

Infrastructures are productive sites for scholarly inquiry in the humanities and social sciences given their material and metaphoric qualities: they are both technical objects with practical functions as well as aesthetic and semiotic vehicles imbued with forms of desire and fantasy. These systems not only influence our perceptions of time and space and dictate how we engage with one another, but also reflect what urban theorists Steve Graham and Simon Marvin have called "sociotechnical geometries of power" and "congealed social interests" indicative of local and national investments (11). Because infrastructure has become synonymous with development, a visual paradigm has been established that correlates modernity with specific forms of architecture, typically featuring a mix of concrete, glass, and steel. The recent completion of Beijing Daxing International Airport, a starfish-shaped building designed by the late Zaha Hadid, might serve as a literal and figurative gateway to modern China for international travelers, but that same facility was responsible for the demolition of neighborhoods and relocation of communities, whose livelihoods were disrupted in order to support the airport's goal of reinvigorating Beijing's suburbs. The tension between national and local interests has played out repeatedly across China's rapidly modernizing landscapes, including the construction of the Three Gorges Dam. Yung Chan, a Chinese-Canadian filmmaker, has documented the transformation of the Yangtze River in the wake of dam construction, contrasting the dam's stated goals (flood control and economic development) with its impact on low-income

and middle-class communities inhabiting now-flooded villages along the river. Thus, the aesthetics of these infrastructural projects, whether they are intended to evoke feelings of awe through architectural design or size/scope, are intimately linked to destruction and ruination; that is, the visual paradigm of modernity is predicated on the elimination of traces of a pre-industrial past, often without regard for the lives of those displaced from their ancestral homes.

Mega-projects like the Daxing International Airport and the Three Gorges Dam indicate that infrastructural development in Asia has been understood as a means to an end: a strategy to achieve economic advancement in the wake of WWII and the Cold War as well as a way of advancing political power through symbolism. More recently, China has undertaken a massive economic and political initiative called the Belt and Road Initiative (BRI), formerly known as One Belt and One Road. As part of their efforts to improve land-based and maritime transportation networks, China has pledged to invest in infrastructural development in countries along the former Silk Road. While the Chinese Communist Party (CCP) has framed this project in economic terms, rivals in the West have cast the initiative as a political ploy aimed to recenter global power in Asia rather than North America or Europe.

In response to BRI, the US, Japan, and Australia have proposed the Blue Dot Network (BDN), which will serve as a system of evaluation and certification of transportation infrastructure based on financial transparency, sustainability, and economic development across the Pacific. This plan is intended to increase private investor confidence in global infrastructure projects, with no countries excluded from the initiative (Geraci, Cooper, and Li 1). Whereas China is directly investing government money into infrastructure as a means of soft power, the US, Japan, and Australia seek to jumpstart outside investment in projects (i.e. government investment through nationalized banks vs. public-private partnerships) (Geraci, Cooper, and Li 8). Although proponents

have suggested that BDN is not a response to BRI, it is hard to overlook the specter of the Cold War hanging over the "red" and "blue" projects.

However, while charismatic infrastructure is the norm rather than the exception in Asian nations, the US faces another problem, with infrastructural maintenance and development projects viewed as wasteful expenditure. Although the Army Corps of Engineers was responsible for the construction of a number of public works projects in the first half of the twentieth century, the twenty-first century experience of infrastructure has largely been characterized by abandonment, disinvestment, or suspension. During the 2008 US Presidential Election, the Gravina Island Bridge in Ketchikan, Alaska, commonly referred to as the "Bridge to Nowhere" by then US vice-presidential candidate Sarah Palin, became a maligned symbol of pork barrel spending and governmental excess. As part of the Gravina Access project, the bridge was intended to replace ferry service to Gravina Island—an island with fewer than 100 residents—to increase transportation options to the Ketchikan International Airport and to spur potential development on the island. As part of this development project, a highway project had already been partially completed by the time the bridge was cancelled, creating what has become known as the "Highway to Nowhere." The castigation of infrastructure projects like the Gravina Island Bridge has increased in recent years, with the US government unwilling to spend money to construct or maintain projects that are deemed "unsexy" by the media.[5] Yet, existing infrastructure in the US is also susceptible to failure thanks to this combination of disinvestment, increased use, and global climate change.[6]

[5] In 2011, the US House of Representatives imposed a temporary ban on earmarks. Infrastructure was one of the primary recipients of earmarked money in legislative bills.

[6] As part of economic recovery plans in the wake of the COVID-19 pandemic, President Joe Biden has announced a $2 trillion infrastructure plan that aims to reverse the US decline in infrastructural investment and maintenance. Divided into four main areas, that money is intended to improve transportation infrastructure, improve quality of life at home, provide assistance for caregivers, and jumpstart research, development, and manufacturing industries. The framing of the plan is unique insofar as it highlights the explicit links between quality of and infrastructure; that is, investing in the structures that constitute everyday life is an investment in individuals and communities. It remains to be seen whether the bill will receive approval from Congress.

Beyond Railroads and Internment: Asian/American Approaches to Infrastructure

In her presidential address at the 1993 meeting of the Association for Asian American Studies, Elaine Kim famously called for moving "beyond railroads and internment" in order to imagine critical frameworks that could account for the experiences of "new groups of various national origins, and not just on the West Coast" ("Beyond Railroads" 18). Although she had previously defined Asian American literature as "published creative writings in English by Americans of Chinese, Japanese, Korean, and Filipino descent" (*Asian* xi) in her landmark work *Asian American Literature* (1982), Kim recognized how the rapidly-developing field had become synonymous with "railroads, 'bachelor societies,' and internment," with the majority of scholarly attention focused on "'sacred' texts by 'dead yellow men'" ("Beyond Railroads" 13). Kim's re-visioning of Asian American studies aligns with the movement towards understanding the field as inherently open-ended, a strategic move aimed to account for what Kandice Chuh calls the "infinite heterogeneity" of Asian America (4). While this critical turn has allowed for the formulation of new concepts and tools for understanding the Asian American experience in the twentieth and twenty-first centuries, I argue that a return to the railroad and the internment camp is warranted to further reimagine Asian American studies.

Asian American Narratives of Building and Unbuilding takes Kim's observations as a point of departure for understanding how Asian Americanists have always been preoccupied with questions of infrastructure even as their attention has primarily focused on humanizing the alienated, commodified, or incarcerated laborer whose subjectivity is at odds with the accumulation of capital. As Kim suggests, the frameworks for understanding pre-1965 Asian labor's contribution to US infrastructures fall under two broad rubrics: 1) emphasizing Chinese laborers' contributions to the building of the Transcontinental Railroad from 1863 to 1869, with the railroad worker as a symbol of the guest workers responsible for building surplus profits; and 2) underscoring the Asian

American population as victim of a racialized US prison/internment infrastructure that uses alien race designations to render naturalized citizens as perpetual foreigners, the flipside of the nation's emphasis on the "good life." Sucheng Chan also locates this emphasis on labor in the earliest articulations of the field: "when Asian American studies emerged as a new field of academic inquiry and critique in the late 1960s and early 1970s, one of the first tasks that historians of Asian America undertook was to correct past and present caricatures and debasement of immigrant Asian and Asian American labor" (140).

For instance, Colleen Lye has argued that "yellow peril and model minority are two aspects of the same, long-running racial form, a form whose most salient feature, whether it has been made the basis for exclusion or assimilation, is the trope of economic efficiency" (5). Lye links this Asiatic racial form with the "intensification of commodity relations and capital's global expansion" (5). While the association of Asiatic racial form with the accumulation of global capital has frequently been understood in terms of labor, I suggest that this association should also be viewed through an infrastructural framework given the multitude of building projects for which Asian labor was historically conscripted. It is not merely hard work that has facilitated the perception of Asian labor as both an economic threat and an asset, but rather the channeling of such energies into the development of systems of capitalist accumulation that promote the flow of wealth. As Rachel C. Lee notes, "while the infrastructural binding of the nation by railroads provided an iconic figure (the railroad worker) through which to recall the crucial contributions of Asiatic labor to U.S. progress in the 'American Century,' the contemporary criss-crossing of the 'wired' sectors of the globe by information networks, world banking development agreements, and economic restructuring plans also correspond to specific Asian/American figures of labor" ("Introduction" 5-6). In Lee's formulation, the laborer is not divorced from the infrastructure but rather held in tension. She suggests that the relationship between the two—how infrastructure shapes the laborer and how the

laborer shapes infrastructure—is necessary to understand the contested place of Asian Americans in national and global orders.

Even as this project returns to the building projects that have historically been the primary object of study in early Asian Americanist scholarship, it nevertheless takes into consideration the formulation of what Jodi Kim calls the field's "coherent incoherence" (7) in challenging the progressive narrative of multiculturalism that characterized earlier investigations. As I demonstrate, an infrastructural approach offers a means of understanding how the upward mobility of Asian Americans has reiterated physical and representational violence against constitutive groups and adjacent communities, particularly Black and Indigenous ones.

Recent scholarship at the intersection of Asian American studies and critical infrastructure studies has returned to the plight of Chinese laborers tasked with constructing the first transcontinental railroad. The "Chinese Railroad Workers in North America Project," a collaborative endeavor spearheaded by Gordon H. Chang and Shelley Fisher Fishkin at Stanford University, has sought to recover the story of the thousands of laborers who contributed not only to the suturing of the nation at Promontory Point but also the development of ancillary railroad projects across the American West and China. As part of the project, a team of international scholars across the humanities and social sciences has sought to assemble the Chinese experience through interviews with descendants of laborers, material culture unearthed by archaeologists, and other documents that have escaped conventional histories of the American West. In doing so, the team has situated the railroad not only as the first industrial transportation network to span North America but also as a critical node in agricultural and communication networks that benefited from the link between the Pacific and Atlantic. Crucially, these scholars gesture to the decimation of Indigenous populations in pursuit of this network, what Manu Karuka views as the finalization of "the industrial infrastructure of a continental empire where none had existed before" (xiv). These

scholars model how an attention to infrastructure not only brings into focus new dimensions of Chinese American history but also situates Chinese immigrants alongside existing Indigenous communities, showing the uneven relationships wrought by railroad construction.[7] Although the steel track of the railroad remains a physical reminder of the Chinese laborers' presence, these scholars show how forays into the archive and repertoire are necessary to piece together a narrative that is multiethnic and transnational.

Although scholarship in Asian American studies has increasingly focused on the subjugated histories of the building of the first transcontinental railroad, few studies have sought to interrogate Asian American contributions to the construction of less charismatic US infrastructures, let alone attempt this endeavor primarily through the lens of literary and cultural studies. During the nineteenth and twentieth centuries, Asian immigrants were responsible for constructing the irrigation systems, railroad networks, and agricultural industries necessary for the modernization of the US and its emergence on the world stage as an imperial power, but their role in shaping the US built environment has largely been overlooked outside of massive engineering projects that explicitly served national goals, such as the construction of the transcontinental railroad. The emphasis on spatially extensive technologies of resource provisioning in an unfolding present ignores historical forms of infrastructure that have already undergone the process of destruction, erasure, or capitalist transformation but continue to dictate the racial geography of the US. As lesser-known projects on the fringes of US empire have faded into the recesses of collective memory, Asian American literature has served as a vital archive for unearthing the forgotten or ruined infrastructures that have

[7] The primary goal of this collaborative endeavor has been to recover the story of Chinese workers, whose contributions to the railroad have largely been ignored in conventional histories of the transcontinental railroad. In returning to the railroad, the project moves beyond "claiming" the US for these workers and instead adopts a transnational perspective to illuminate the cultural, economic, and social contexts animating railroad construction. Scholarly works emerging from the project have interrogated the racialization of spaces adjacent to the railroad, provided insight into the transformation of railroad-building experiences into family lore, and traced the routes undertaken by laborers in traveling back and forth between China and the US.

disproportionately distributed knowledge, resources, and pollution amongst ethnic communities. While infrastructure studies tend to focus on current or emerging systems that mediate relations between people, objects, and ideas, an attention to so-called heritage infrastructure—material systems that have already broken down, become visible, and, perhaps, been reframed in alternative discourse—remains largely overlooked. From the ditch-diggers and tunnel-borers that made possible the ongoing colonization of Hawai'i to the levy-builders in the San Joaquin River Delta in Northern California, Asian American labor is intimately tied to infrastructural systems that are not necessarily constrained by the nationalist imperatives that underlie large-scale, charismatic infrastructures.

In turning to infrastructure, this dissertation attempts to negotiate the vexed relationship between Asian immigration and racialized environmental discourse from the nineteenth and early twentieth centuries. Because Asian Americans have been denied access to the landscape, earlier Asian American engagements with the built environment have primarily focused on what Gary Okihiro calls "a re-visioning of the landscape of Asian America, this land we claim as ours" ("Introduction" 1). For instance, Takaki famously called for Asian Americanists to "to decipher the signs of Asian presence here and there across the landscape of American—railroad tracks over high mountains, fields of cane virtually carpeting entire islands, and verdant agricultural lands" (*Strangers* 487). Such engagements have focused on literally and figuratively naturalizing the Asian American subject by locating them in the landscapes of the American West. As Paul Outka notes, "Asian American experience has historically been more often an experience of degradation than the sort of liberatory sublimity that has marked white representations of nature…. Asian experiences in the United States demonstrate again and again how readily environmental discourse can be coopted to racist and oppressive ends" (xx). Without an Asian American interrogation of infrastructure, critical

infrastructures studies has the potential to reiterate the representational violence, the racial othering, that has historically coalesced around and derived potency from the built environment.

Recognizing how infrastructure has been imagined as a network of relations, I interrogate "building" as the privileged site for Asian American claims to national subjectivity and political agency. In doing so, I consider how Asian Americans have literally and figuratively claimed the US as "home" through the valorization of labor and urban development at the expense of Black and Indigenous communities who have been displaced from their lands and disconnected from their lifeways. The development of infrastructure offers the possibility of transforming distant, foreign, or hostile environments for resource extraction or ruination, serving the project of US settler colonialism and imperialist expansion by privileging specific populations and places for (re)production. In adopting an infrastructural framework, my dissertation shows how an attention to the built environment can bridge the methodological schism between Asian American studies and ecocriticism by tracing how the entanglement of material technologies, sociotechnical and legal processes, as well as the natural environment produces the real and imagined spaces of US empire. Although this project is couched in Asian American studies, it does not seek to restore the Asian American subject to the center of narratives but rather to show how those individuals and communities form part of modern infrastructure, shaped by a capitalist machine, and, as a result, have not only experienced bodily, environmental, and psychological harms but also been complicit in the disenfranchisement and dislocation of Black and Indigenous communities.

Turning away from prior attempts to "claim" the US as the home of Asian immigrants and their descendants, *Asian American Narratives of Building and Unbuilding* adopts an infrastructural approach to reconsider what relationalities have been foreclosed by efforts to claim the US through the privileging of an Asian American subject. Claiming an American identity is to lay claim to the symbols of modernity, but the narratives and documents with which I engage demonstrate the

underbelly of modernity, the foreclosed relational potentialities that come with assimilating into the US. The Asian American valorization of building—labor stemming from the railroads, bachelor societies, and internment camps that Kim sees as too narrow a focus—is to break alliance with Black and Indigenous communities and to accept the violent and genocidal imperatives underpinning white supremacist capitalism. In clinging to these heritage infrastructures that have receded in the public consciousness but remain touchstones in Asian American histories, Asian Americans have sought to reassert their place, their contributions, to the US built environment even as they themselves have been rendered invisible in popular media. I advocate for and model a critical lens that is different from the scholarship that focuses on claiming the US, where the role of Asian Americans in contributing to infrastructural projects and simultaneously enacting Black and Indigenous dispossession are both acknowledged.

Chapter Breakdown

Asian American Narratives of Building and Unbuilding considers the archives and repertoires of unequal resource distribution to understand how the differential provisioning of people within the US, including Asian immigrants and their American-born children, have supported white supremacist capitalism. At the same time that the US government wages war against foreign powers, it simultaneously launches internal campaigns against specific populations through the erasure, destruction, or disinvestment in infrastructure to (re)produce an idealized vision of the nation. As a reflection of unequal provisioning and differentiated citizenship, Asian American imaginative literature affords scholars the opportunity to examine the infrastructures that cannot be readily perceived or sensed by offering counter-histories rooted in personal or collective memories and guiding readers through real or imagined places that have been transformed into ruins or nonproductive states. In addition to exploring the archive of Asian American literature, I engage

with what performance studies scholar Diana Taylor calls the repertoire of cultural memory—the embodied practices and gestures that offer an alternative to the written archive and that highlight transnational contact zones—by working parallel to Indigenous scholars invested in decolonizing existing modes of scholarship and intellectual inquiry (Byrd; Trask) that center Western paradigms of land and water use. To do so, my dissertation turns to three case studies in the history of Asian immigration to the US that are saturated with interracial encounters and that showcase how infrastructure serves as a nexus for investigations into US territorial expansion and rehabilitation.

The uneven distribution of these materials and resources brings into focus the fallacy of viewing infrastructure as solely a public benefit, an idea reinforced by the persistence of ongoing inequalities at the structural level in the US. In the following chapters, we see this play out in the way that writers, filmmakers, and artists imagine the experiences of Asian immigrants and Asian Americans in internment camps, in plantation villages, and futuristic labor colonies resembling live-work dormitories. For these people, the infrastructure of the modern world is not primarily for their benefit but rather what contributes to their degraded experiences of life. As I demonstrate, their ruined lives are not isolated instances of corporate or governmental harm but entangled with the degradation of adjacent racial and ethnic communities, whose own precarious positioning in society is linked to the shifting racialization of Asian immigrants and Asian Americans.

The first chapter of my dissertation reconsiders the legacy of Manzanar War Relocation Center, one of ten internment camps in which Japanese Americans were imprisoned during WWII, by investigating the desertification of California's Owens Valley following the construction of the Los Angeles Aqueduct in 1913. In focusing on the internment of Japanese Americans at Manzanar War Relocation Center, I account for the entanglement of land use, urban segregation, and water politics underlying the selection of the Owens Valley as a site for a prison camp. Recognizing dust as a byproduct of water infrastructure projects, like the Los Angeles Aqueduct, I view Japanese

American internment as part of an ongoing struggle over land and water rights in the Owens Valley and as a cautionary tale about the abuses of federal and municipal power stemming from differing perceptions of appropriate land use. With the incarceration of Japanese Americans across the US, federal and municipal governments secured a fixed supply of labor eager to prove their loyalty through work on land improvement projects that had been interrupted by the war. I view buried admiration and resentment towards Japanese agricultural knowhow as a constitutive aspect of the summary stripping of Japanese American cultivated plots and accumulated wealth on the West Coast. Moreover, in the internment of Japanese Americans in the Owens Valley, the residue of earlier forms of infrastructural violence—the transformation of the region into a desert wasteland at the expense of Indigenous and settler communities—is weaponized to further devalue Japanese Americans as prisoners not of war but large-scale land acquisitions.

This chapter advances an environmental critique of US imperialist expansion and settler colonialism by focusing on literary works that cast internment and adjacent sites of racial containment as interlinked spaces of unequal political status and that implicate infrastructural projects in empire-building practices. In reading Jeanne Wakatsuki Houston's memoir *Farewell to Manzanar* (1973), Nina Revoyr's novel *Southland*, and Karen Tei Yamashita's *Tropic of Orange* alongside War Relocation Authority records, I explore how the concentration of people of color in devitalized landscapes, intended sites of environmental ruin and economic disinvestment, serve to assimilate or alienate ethnic populations. In other words, capitalism fosters unsustainable relationships to land and water, creating ruins in the process of extracting resources to be concentrated in urban centers. Those ruins are ultimately made productive through incarceration, the involuntary recruitment of a captive labor force during foreign and domestic wars against undesirable (politically criminalized) populations. Through incarceration or segregation, more value can be extracted from those bodies marked as racially other (wasted and wasteful; damaged and

damaging). My reading of these three texts demonstrates how this infrastructural logic has animated the transformation of both the Owens Valley and Los Angeles across the twentieth century.

In my second chapter, I adopt plantation nostalgia—a longing for a return to the values of the plantation system by the descendants of laborers whose bodies were wasted in the production and maintenance of plantation infrastructure—as a point of departure for interrogating the perception of Hawai'i as a multicultural paradise. I interrogate how labor has been the conventional framework for understanding the sugar industry in Hawai'i in Asian American studies; emphasizing labor legitimates the role of Asian laborers in building Hawai'i and strengthens Asian descendants' claims to US citizenship and social justice. Yet, such assertions elide the role of Indigenous peoples in stewarding the islands long before the arrival of Europeans and Americans, reinforcing a brand of utopian multiculturalism that has its roots in systems of oppression and that continue to be marketed to consumers and tourists in sanitized terms. In shifting attention from plantation labor to water infrastructure, this chapter revisits the history of sugar cane in Hawai'i to understand how Asian laborers have participated in the project of US colonialism by constructing and maintaining the irrigation ditches, flumes, and tunnels necessary for sugar cane cultivation in the late nineteenth and early twentieth centuries; and to work against the image of Hawai'i as a multicultural paradise by exploring the material and metaphoric implications of water infrastructure as an emblem of settler colonialism. Specifically, this chapter examines water infrastructure across a constellation of literary texts, including Maxine Hong Kingston's fictionalized memoir *China Men* and Milton Murayama's novellas *All I Asking for is My Body* and *Five Years on a Rock* (1994), as well as records of the Hawaiian Sugar Planters' Association (HSPA) to reframe Asian contract labor as a form of terraforming—the process by which foreign or hostile environments are transformed for resource extraction by (neo)colonial powers. These literary texts subvert the narrative of progress that attends US building projects in the Hawaiian Islands by showing workers who disrupt infrastructural systems through

acts of resistance. I focus on both the formal strategies that elevate mundane bodily processes and daily events to the status of epic grandeur as well as the framing of the repetitiveness of collective relationality and exhaustion as survival.

While HSPA records offer insight into the administrative, financial, and technical operations of the plantation, Kingston and Murayama imagine how contract laborers experienced the plantation system through the organization of space. Larkin notes how the ambient environment is dependent on functioning or failing infrastructure: "infrastructures produce the ambient conditions of everyday life: our sense of temperature, speed, florescence, and the ideas we have associated with these conditions" (336). Because infrastructure "operate[s] at the level of surface," it is sensed through the "skin, nose, eye, ear—rather than the mind inside" (337). For Kingston and Murayama, the affective and physical states of their characters are inextricably linked to the reordering of the environment according to the plantation's extractive logic. Even as these characters do not always connect their experiences of the plantation to infrastructure, their ability to imagine alternative livelihoods is constrained by their positioning in the plantation. Such constraints reflect what Appel, Anand, and Gupta identify as the affective and embodied aspects of infrastructure. They note how infrastructure "affects where and how we go to the bathroom; when we have access to electricity or the Internet; where we can travel, how long it takes, and how much it costs to get there; and how our production and consumption are provisioned with fuel, raw materials, and transport" (6). An interrogation of Kingston's and Murayama's texts reveals why infrastructures should be understood as "structures of feeling," entities capable of producing "produce a sense of belonging, accomplishment, or loss" based on the way in which individuals and communities navigate the built environment (26).

In the third chapter, I shift to a more explicitly literary mode of engagement with infrastructure by juxtaposing Margaret Atwood's novel *Oryx and Crake*, Bong Joon-Ho's film *Okja*,

and Chang-rae Lee's novel *On Such a Full Sea*. These three recent works of speculative fiction dramatize encounters between the economic and the biological by imagining how the growing intimacies between scientific research and corporate investment have fostered a culture of consumption predicated on the manufacture of fleshy bodies. I situate speculative fiction as a genre particularly suited to exploring infrastructure's orientation towards the future and the possible worlds generated by its absence or completion. Reading *On Such a Full Sea* alongside *Oryx and Crake* and *Okja* brings into focus the ways in which Asia has been figured as the source of reproductive labor and care for new modes of life engineered in North American laboratories, as the three works gesture to the ways in which corporations deploy Asian affective laborers—whether it be caretaking or sex work—as a means of rendering new forms of life palatable for mass consumption (alimentary or sexual). In these bioscientific worlds, genetically modified hybrids are figured as logical responses to environmental crises: such creatures might solve global food shortages while preventing species loss and reducing greenhouse gas emissions. Moreover, each of these texts imagines what happens when successor species projects are manipulated by laboratories and released in the "wild."[8]

This chapter thus explores how Asian affective labor has been situated as a critical node in emerging modes of food production and biomedicine predicated on real and imagined biotechnologies. The reliance on Asian affective labor and commodities to market bioengineered products, like genetically modified food and cloned animals, highlights social stratification in what might be considered an imagined cosmopolitan community formed in the wake of and united by ecological disaster. I frame this dependence as part of an emerging type of infrastructure: flesh. Infrastructures of flesh involve both sex acts and forms of reproductive labor, whether it be the cultivation of animals for mass consumption or the caretaking of genetically engineered creatures

[8] I place this term in quotation marks because the worlds represented by Atwood, Bong, and Lee reflect ongoing concerns about the degradation of the environment, which contributes to the representation of nature in ruins.

designed to succeed humans as the dominant form of life on Earth. The interrogation of these infrastructures tends to be future-thinking, as we see with twentieth-century manifestos decrying the potential effects of unfettered population growth on natural resources. As such, this chapter extends Heather Houser's claim that "[a]ffect is pivotal to the complexity of emergent concerns about climate change, species extinction, pervasive toxicity, population growth, capitalist expansion, and technoscientific innovation" (8) by interrogating the way in which cute, innocent, or Asian lives have been framed as accessories to managing affects, like horror and disgust, toward so-called Franken-food.

The epilogue casts Rita Wong's poetry collection *forage* (2007) as an attempt to understand the way in which techno-utopian discourse has been mobilized to obscure the abjection of Asian laborers who assemble the world's cellphones, laptops, and tablets as well as forage for precious metals from "recycled" electronic waste (e-waste). In considering how material waste derives from the information and communication infrastructures that dictate twenty-first century conceptions of the digital cloud, I suggest that contemporary waste disposal strategies correspond to modern instantiations of biopower designed to protect the health and wellbeing of the body politic while containing foreign elements through exclusionary practices that dole out dirty and risky work to the socioeconomically poor, including e-waste recyclers in China. While the CCP has enacted regulations to restrict the import of electronic waste, its continued arrival in Chinese ports and e-waste facilities provides an opportunity for wealth accumulation by those left behind by the CCP's embrace of capitalist policies. Waste is inherently linked to the capitalist modes of production, which infrastructure facilitates through the movement of people, ideas, or commodities, because it is flexible, serving as both byproduct and product in global markets. In this context, the cliché proves true: one person's trash is another's treasure. Yet, this adage puts a positive spin on discarded or unwanted possession, ignoring the longevity of material components with toxic effects. Wong's

poetry makes legible how waste infrastructure may be responsible for long-term environmental and public health problems that persist beyond its functional lifespan.

Across these chapters, I read infrastructure as an epistemology, a condition, a motif, and a lens. In doing so, this dissertation develops a minor infrastructure mode of reading that attends to an array of texts, literary and institutional, that are attentive to what infrastructure unbuilds as it is built. My critical approach seeks to make visible the minority labor necessary to maintain infrastructural networks—major hallmarks of modernization—and attends to the pre-existing relations and Indigenous infrastructure displaced by major qua modern infrastructure, which serve capitalist and imperial interests. This epistemological orientation focuses on acts that diverge from infrastructural incorporation, the making of waste rather than the recycling of waste into revenue streams. As I demonstrate, such acts resist the narrative of progress and modernization that underlie white supremacist visions of US national identity.

Relocating Manzanar: Environmental Histories of Racial Violence
Chapter One

In literary and cultural studies of Japanese American internment, scholars have emphasized the political and psychological dimensions of the incarceration of Japanese Americans during WWII.[9] Yet, in challenging the US government's justification of internment as a military necessity, these histories neglect the entanglement of land use, urban segregation, and water politics that underlies the construction of the ten internment camps administered by the War Relocation Authority (WRA), the federal agency tasked with managing the internment camps.[10] While recent scholarship has reaffirmed the contributions of Japanese Americans to US development by recognizing their role in transforming the landscapes of the American West as contract laborers, farmers, and gardeners, such works tend to overlook the specific nuances of each locale in order to make comprehensive statements about internment. In attending to the layers of history underlying Manzanar War Relocation Center, located in California's Owens Valley, this chapter seeks to answer the following questions: how does the evacuation of Japanese Americans to Manzanar emerge out of and draw into relief the region's histories of environmental and social injustice, as evident in the California Water Wars, that extend beyond the scope of WWII? And, in telling the history of Manzanar through attention both to institutional and to literary texts, what alternative histories of interment can scholars unearth by attending to infrastructure?

The critical re-appropriation of environmental frameworks in Asian American studies corresponds to the increased attention scholars now pay to questions of space and place as well as interchanges between the human and the more-than-human world in scholarship about Japanese

[9] A version of this chapter was published in the Summer 2020 volume of *MELUS*. See Gregory Toy, "Relocating Manzanar: Environmental Histories of Racial Violence in Jeanne Wakatsuki Houston's *Farewell to Manzanar* and Nina Revoyr's *Southland*." *MELUS*, vol. 45, no. 2, 2020, pp. 25-45. https://doi.org/10.1093/melus/mlaa010.
[10] I use the term "internment camps" to refer to the sites built to house and rehabilitate Japanese immigrants and Japanese Americans during World War II. Although some scholars believe the term "concentration camp" should be reserved exclusively for Nazi extermination camps, many scholars in Asian American studies employ the term "concentration camp" when discussing Japanese American internment. I use these terms interchangeably.

American internment. For instance, environmental historian Connie Chiang focuses on the landscapes of the internment camps, which have primarily been characterized as passive backdrops in accepted histories of internment. In identifying sources of racial oppression and resistance in the natural world, she suggests that the US government conspired to "use nature as an instrument for social control by locating the camps in places where they could isolate Japanese Americans and procure their labor in the name of assimilation and patriotism" (239). Similarly, literary critic John Beck has analyzed the recurrent descriptions of dust in internment narratives as a means of exploring what he calls the "permanent state of emergency" that has supported the US military-industrial economy in the twentieth century (8). He notably characterizes the desert as "an agent of erasure that collaborates in the enforcement of security measures designed to conceal in plain sight the presence of the excluded" (73), interrogating concepts of "waste" and "wastelands" to uncover the broader networks of power that have allowed for the formation of permissible zones of precarious living in the wake of WWII. Both scholars can be classified as part of a scholarly trend of situating internment as part of a national narrative that characterizes the landscapes of the American West as symbolic spaces of US identity.

This chapter extends this line of thinking by situating Manzanar as a nexus for overlapping histories of environmental and social injustice, an animated site for exploring how the project of US empire-building has depended on the racialization of people and the differentiation of space.[11] While Manzanar has been a locus for studies of citizenship and nationality, I explore the way in which the internment camp can serve as an animated site for examining issues of settler colonialism, militarism, and racialized urban development given the region's contested landscapes and histories. By concentrating on the environmental stories underlying the emergence of Manzanar as a deserted

[11] Moon-Kie Jung suggests that the "two defining features of colonialism" are "the hierarchical differentiation of spaces and people" (57). Jung's empire-state approach brings together questions of race, the state, and empire in exploring a unified history of the heterogeneous people of the US who have each been differentiated under imperial power.

site, this chapter aims to offer what broader histories of internment cannot: consideration of the infrastructure of a region shaped by the removal of Native American tribes in the late nineteenth century, the dispersal of agricultural laborers in the early twentieth century, and the temporary detention of Japanese Americans from 1942 to 1945. These histories of displacement are literally and figuratively linked by the Los Angeles Aqueduct, a 223-mile waterway that paved the way for Los Angeles's transformation from sleepy frontier town in the late nineteenth century to sprawling metropolis in the present day. Because infrastructure can be used to facilitate the transformation of seemingly distant, foreign, or hostile environments for resource extraction or ruination, it has the potential to further the project of US settler colonialism and imperialist expansion by securing the shifting borders of the nation and by privileging specific populations for reproduction. According to Daniel Nemser, infrastructure produces and is produced by the built environment; it naturalizes settler colonial and imperialist ideologies of racial control—concentration, incarceration, and segregation—in urban and rural spaces (4).[12] An attention to the way in which the built environment has been shaped by infrastructural projects, like the Los Angeles Aqueduct, affords scholars the opportunity to interrogate how the urban and rural spaces have been mobilized against ethnic minorities to enact racialized policies and practices at various levels of governance.

A number of literary works by Japanese American writers have coalesced around Manzanar, even as such narratives reckon with the realities of the internment experience in varying degrees of detail. This chapter advances an environmental critique of US imperialist expansion and settler colonialism by focusing on recurrent environmental tropes in three works that cast internment and adjacent sites of racial containment as interlinked spaces of unequal political status: Jeanne Wakatsuki Houston and James D. Houston's memoir *Farewell to Manzanar* (1973), Nina Revoyr's

[12] Nemser views race as an infrastructure that is made manifest in spatial arrangement: "[s]pace is the grid of intelligibility that gives race its form and makes it legible, even thinkable" (2-3).

novel *Southland* (2003), and Karen Tei Yamashita's novel *Tropic of Orange* (1997).[13] While *Farewell to Manzanar* largely focuses on Houston's experiences at Manzanar War Relocation Center from 1942 to 1945 with brief glimpses of her pre- and post-WWII experiences, *Southland* imagines the reverberations of internment on the multiethnic community inhabiting Los Angeles' Crenshaw district at three temporal junctures in the twentieth century. By contrast, *Tropic of Orange* broadens the traditionally narrow scope of internment studies by reflecting on the implications of the North American Free Trade Agreement (NAFTA) on immigrant and multiethnic communities, including Japanese American internees and their descendants, in 1990s Los Angeles. I situate my reading of these texts with documents preserved in the archives of the WRA, which offer insight into the governmental perception of internment as a reclamation and rehabilitation project. Taken together, these texts cast internment not only as the culmination of anti-Japanese sentiment in the early twentieth century, but also as part of a continuum of racial violence in Southern California that is articulated in relation to the acquisition and development of land and water resources. I argue that these texts demonstrate how the racial geography of the US has been shaped by the concentration of people of color in devitalized landscapes, intended sites of environmental ruin and economic disinvestment, that serve to assimilate or alienate ethnic populations. These devitalized landscapes take shape in several registers: the geological idiom of dust, the architectural idiom of security, and the planning idiom of traffic. In drawing connections between these tropes, I show how an infrastructural critique of Japanese American internment is inseparable from interrogations of US empire and settler colonialism given the positioning of the ten internment camps in the deserted and

[13] *Farewell to Manzanar* is co-authored by Jeanne Wakatsuki Houston and her husband James D. Houston. When I refer to "Houston" in this chapter, I am specifically referring to Jeanne Wakatsuki Houston, as the memoir focuses on her experiences of Japanese American internment.

desertified landscapes of the American West as well as the environmental histories of racial violence linked to Manzanar.[14]

Emptying the Owens Valley

Describing attempts to memorialize Manzanar under the aegis of the National Park Service in 1992, Robert T. Hayashi notes how "Los Angeles had a long history of involvement in Inyo County and the larger Owens Valley, and that history explains not only what internees experienced when they came to Manzanar, but also why remembering this site would prove more problematic" ("Transfigured" 64-5). Indeed, the choice to build an internment camp in the Owens Valley during WWII was partially motivated by an effort to rehabilitate the region, which had been economically and environmentally devastated by the absence of water following the construction of the Los Angeles Aqueduct by the Los Angeles Department of Water and Power (LADWP) in the early twentieth century.[15] Here, federal and municipal government agencies had previously attempted to clear out the Indigenous population through a series of wars in the late nineteenth century, incorporating dispossessed Native Americans as laborers into a short-lived settler economy predicated on cattle ranching and agriculture. The memorialization of Manzanar as a site of Japanese American incarceration thus emerges out of and draws into relief the displacement of Indigenous communities by white pioneers and the subsequent displacement of those settler colonists by the LADWP—contingent historical actions that derive from a shared underlying vision of race. In rehearsing this abbreviated history, Manzanar can be viewed in a new light—as part of

[14] While a desert ecosystem is not "devitalized" in and of itself, I refer to the purposeful emptying of space through the creation of environments that are inhospitable to human habitation.

[15] Connie Chiang documents how the WRA sought publicly owned lands that were geographically removed from sites of strategic importance and that could produce agricultural products beyond the conclusion of the war (240-241). As Manzanar thrived, WRA leaders imagined the possibility of extending Manzanar's agricultural success into the Owens Valley beyond WWII, but were ultimately rebuffed by the LADWP.

an ongoing struggle over land and water sovereignty in the Owens Valley, as a cautionary tale about the abuses of federal and municipal power stemming from differing perceptions of appropriate land use, and as an emblem of the ongoing erasure of Indigenous histories as part of US settler colonialism.

Until the arrival of expeditionary military forces in the late 1850s, the Owens Valley had largely escaped the notice of settlers due, in part, to its isolated location east of the Sierra Nevada mountains and northwest of what is now Death Valley National Park. Lured by the promise of mineral wealth and government incentives that made cheap land available to those willing to improve and irrigate arid lands, white pioneers—primarily individual prospectors who had already exhausted gold and silver fields in the California foothills—entered the Owens Valley in the early 1860s. While the Preemption Act of the 1830s and the Homestead Act of 1862 allowed settlers to claim hundreds of acres at minimal rates provided they demonstrated evidence of use and improvement, the Desert Lands Act of 1877 tasked settlers with reclaiming land through irrigation (J. Walton 22, 84). These laws were guided by the belief that unsettled territory meant that it was untouched by mankind and necessary for the territorial expansion and economic advancement of the nation. But these laws did not account for the Indigenous people who had inhabited regions like the Owens Valley for centuries. By encroaching on territory that was already populated by Native Americans, settlers advanced the borders of the burgeoning nation-state. This displacement corresponded to the US policy of incorporation that dictated the settlement of lands in the American West as well as the progressive reorganization of the national state according to urbanization, regional incorporation, and bureaucratic management (J. Walton 194).

Despite the characterization of these lands as "empty," white settlers encountered local Paiute and Shoshone tribes in the Owens Valley, many of whom followed a pattern of seasonal migration to gather seeds, nuts, and grasses. These tribes had already wrought changes to the

landscapes of the Owens Valley, installing their own systems of material infrastructure and cultivating cultural practices predicated on maintaining a sustainable relationship to the land. As John Walton notes, settlers encountered, but rarely acknowledged, Indigenous practices of "settled agriculture based on irrigation systems" that featured "ditches lateral to each creek… each averaging 40 inches in width" (15). When white settlers drove their cattle herds into the valley, they disrupted this fragile ecology that had been cultivated over generations and destroyed Indigenous lifeways. The existence of such infrastructure shows how the "emptiness" underlying the logic of homesteading is an ideological construct that justifies the settlement of nonproductive regions at the expense of preexisting inhabitants. In this context, "emptiness" requires settlers' willful blindness to the presence of Indigenous infrastructures and lifeways, showing how Anglo-European perspectives of the natural world have been limited by Western models of infrastructure and capitalist ideologies of resource exploitation and accumulation.

US settler colonialism precipitated the literal "emptying" of the Owens Valley of its Indigenous inhabitants to justify settlers' claims to natural resources. The expansion of mining, farming, and ranching operations in the Owens Valley impinged on Paiute access to land and water, resulting in conflicts that encouraged formerly peaceful tribes to adopt violent means to preserve their tenuous livelihood and maintain spiritual connections to their ancestral lands.[16] Although early expeditionary forces had initially characterized the tribes as peaceful, this description did not fit the narrative emerging from the settlers' growing conflicts with Indigenous populations. The killing of cattle and sabotage of infrastructure provided the military with justification for suppressing and containing the Paiutes, which culminated in the forced removal of nearly one thousand Indigenous residents to Fort Tejon on July 22, 1863. Fort Tejon, however, was not intended to serve as a

[16] William J. Bauer, Jr. describes how Paiute oral histories are rooted in specific places in the Owens Valley. He rehearses the story of the giant and the waterbaby to show how Paiute cosmology endows the environment with human sentience.

permanent home for the displaced people: the following year, nearly six hundred Paiutes were relocated to the Tule River Reservation, roughly one hundred miles southwest of present-day Manzanar (Crawford 89). This dispossession formed part of a series of military interventions from approximately 1861 to 1863 that later became known as the Owens Valley Indian War. Yet Indigenous communities could not be kept from their ancestral lands, with many individuals making the trek back to their former homes on foot. Today, there are four federally-recognized tribes in the Owens Valley, each with their own reservation.

At the turn of the twentieth century, the region attracted the attention of two governmental agencies with competing visions of the Owens Valley: the US Bureau of Reclamation and the LADWP. Both agencies viewed the development of water resources as a means of restoring productivity to nonproductive regions, but their plans to accomplish this hinged on vastly different understandings of how that water would be used. While the Bureau of Reclamation sought to irrigate lands in service of the national economic interests, the LADWP privileged the continued growth and urban expansion of the City of Los Angeles. The ensuing conflict between representatives of federal and municipal agencies—the roots of the California Water Wars—would eventually lead to the disenfranchisement of white settlers in the Owens Valley as well as Indigenous tribes whose water claims remain unsettled.

The National Reclamation Act of 1902 provided funding for the irrigation of arid lands in the American West, reflecting then-President Theodore Roosevelt's belief that unused land should be transformed into farming communities and that water was wasted if it did not benefit settlers. William Kahrl notes how the Reclamation Service, under the purview of the newly created Bureau of Reclamation "intended to extend opportunities for settlement and self-reliance to the common people by creating a whole new class of lands which would be made habitable through irrigation" (32). The agency sought to fulfill this mission by establishing irrigation colonies that would create

irrigated oases in the midst of the desert landscape. Given its abundance of natural resources and minimal infrastructural development due to limited transportation access, the Owens Valley was a prime region for reclamation.

However, the Reclamation Service's plans for the Owens Valley were countered by agents of the City of Los Angeles, who had started acquiring land and water rights in the region on behalf of the LADWP as early as 1905. While the most famous of these conspirators was William Mulholland, chief engineer of the LADWP, other collaborators included Frederick Eaton, the former mayor of Los Angeles, and Joseph Lippincott, a regional engineer with the Reclamation Service. These agents imagined an urban metropolis in place of a sleepy frontier town on the fringe of the growing nation, but such lofty visions required the acquisition of a new water supply that could simultaneously sustain a population of two million people and unlock the agricultural potential of arid lands in the San Fernando Valley (Kahrl 49). In 1913, the LADWP completed construction of an aqueduct that would have dire environmental and economic consequences on the settlers who called the Owens Valley home, an intervention that displaced the settlers and installed a new colonizing force in the region with the power to reshape perceptions of the landscape. While settlers resisted the LADWP by attempting to sabotage the aqueduct, their rebellion ultimately failed, resulting in the sale of additional land and water rights to the LADWP by deception. By 1935, the LADWP owned more than 95 percent of the Owens Valley's farmlands (Bauer 107).

The removal of water from the Owens Valley allowed the LADWP to advance another narrative of emptiness, one that has relied on perceptions of deserts as incompatible with human life and urban development. By framing the desertified landscapes of the Owens Valley as the region's natural state, the LADWP ensured that their simultaneous project of populating Los Angeles and depopulating the Owens Valley would continue mostly undisturbed: without water, making the Owens Valley habitable and productive again would remain a pipedream. With the completion of

the Los Angeles Aqueduct, nothing effectively deterred the LADWP from their quest for control of the region's resources until the onset of WWII, which provided residents of the Owens Valley with new economic opportunities following the incarceration of Japanese Americans at a former irrigation colony, a site named for the crop that was supposed to transform the region's economy—apples.

A Different Kind of Sand

By the time the first Japanese American internees arrived at Manzanar in 1942—then renamed Manzanar War Relocation Center—the Owens Valley had largely been pumped dry of water, transformed by the chicanery and subterfuge of a few powerful men seeking to cement their legacy and wealth through urban development. Jeanne Wakatsuki Houston documents the effects of this desertification in a chapter of her memoir *Farewell to Manzanar* titled "A Different Kind of Sand," describing her family's futile efforts to seal their cramped living quarters at the newly opened relocation center:

> We woke early, shivering and coated with dust that had blown up through the knotholes and in through the slits around the doorway. During the night Mama had unpacked all our clothes and heaped them on our beds for warmth. Now our cubicle looked as if a great laundry bag had exploded and then been sprayed with fine dust. A skin of dust covered the floor. (23)

Like the barbed wire encircling the camp, the cracked walls of the barracks only offer the illusion of security, as such inadequate barriers can neither filter patriotic citizens from enemy aliens nor protect human bodies from environmental matter. The explosion of dust in the cubicle, facilitated by the harsh desert winds, emphasizes the landscape's role in the disordering of domestic space, the disruption of traditional social hierarchies. Moreover, in blanketing their quarters with a new "skin"

that more closely resembles the refined contents of a "flour barrel" than a room "full of Japs" (24), dust renders the family's ethnic identity—and, by extension, national loyalty—illegible, painting them as white subjects capable of assimilation. Notably, Houston's characterization of the dust as a "skin" covering the floor of the cubicle gives bodily form to an otherwise shapeless entity, suggesting that she views internment as an embodied experience of place. Indeed, as she later confirms, Manzanar refers not only to a prison camp in the Owens Valley, but also to the bodily sensations "[living] in [her] nervous system" (196) that coalesce into a particular "state of mind" (195). Although this scene is rendered in metaphoric terms, it nevertheless highlights what Stacy Alaimo describes as "the extent to which the substance of the human is ultimately inseparable from 'the environment'" (2).

"A Different Kind of Sand" forms one part of a longer autobiographical narrative about the Wakatsuki family and their migrations through different social spaces and cultural formations during World War II. The memoir opens with the bombing of Pearl Harbor on December 7, 1941. The surprise attack by the Japanese on the United States is registered in the breakdown of familial order: Jeanne's father is arrested by the FBI for his perceived connections to the Japanese military; her mother negotiates various indignities, including selling family heirlooms to secondhand dealers at a fraction of their value; and her extended family moves from San Pedro to a small house in Boyle Heights as they await their fate. With the signing of Executive Order 9066 on February 19, 1942, the family must pack their belongings and relocate to Manzanar War Relocation Center, 225 miles northeast of Los Angeles. At Manzanar, the family must acclimate to the harsh desert environment as well as negotiate upended social and cultural systems. Japan's surrender on August 14, 1945 catalyzes the closure of the camp and facilitates the family's return to Long Beach, where Jeanne attempts to balance her Japanese heritage with her American upbringing and education. The memoir culminates in Jeanne's return to the camp in 1972 with her husband and two children. As

she searches for signs of Manzanar amidst the desert landscape, she bids farewell to an unspoken trauma she has carried since her family was forcibly relocated to the Owens Valley nearly thirty years prior.

Farewell to Manzanar traces Houston's personal development from innocence to racial self-awareness, providing a glimpse of the intensely environmental experience of being incarcerated at Manzanar by lingering over the material and metaphoric qualities of dust. The recurrent descriptions of dust in *Farewell to Manzanar* and in other Japanese American literary works set during WWII can thus be read within the context of three aspects of internment: national security, environmental rehabilitation, and human conservation.[17] The overlapping significances of dust in these contexts speak to the ways in which environmental rhetoric has been mobilized against people of color to deny their claims to the US and highlight the crucial role environmental attitudes and practices have played in racializing Japanese Americans as yellow peril incapable of assimilating into a US identity predicated on whiteness.

First, because Houston links dust with the isolated inland areas to which Japanese Americans were restricted during WWII, dust corresponds to the removal of Japanese Americans from coastal zones conducive to espionage and susceptible to invasion. General DeWitt's infamous characterization of internment as "a military necessity" meant that internees were relocated to the wastes of the American West where harsh environments could contain the threat posed by Japanese Americans (Takaki, *Strangers* 387). Patricia Nelson Limerick has argued that these landscapes do not function as "scenery" but instead reflect the government's conscious effort "to break the spirits of the prisoners" (1040-1). The stark contrast between the descriptions of Terminal Island and Long Beach in *Farewell to Manzanar* attest to the psychological impact of such geographic removes: the

[17] Aside from the works discussed in this chapter, notable works that highlight the dust include Yoshiko Uchida's *Desert Exile* (1982) and Miné Okubo's *Citizen 13360* (1946).

former is defined by "clean" water, "sharp Sunday blue" skies, and "no smog" (3) while the latter is characterized by "a yellow swirl" obscuring a "blurred, reddish setting sun" (18). While the description of Terminal Island is largely a passive backdrop against which the tragic consequences of the bombing of Pearl Harbor unfolds, the characterization of Manzanar in nebulous terms portrays the environment as an agent of erasure that actively impacts the experience of Japanese Americans in the camp.

Second, the desert landscapes in which Manzanar and the other internment camps were constructed reflected existing governmental policies, such as the New Deal, that influenced the selection of sites conducive to the transformation of nonproductive regions into economically self-sustaining communities through public works projects, including irrigation and flood control (Chiang 240). Despite widespread animosity towards Japanese Americans in the depleted agricultural region, Inyo and Kern County leaders recognized internment as an opportunity to revitalize the local agricultural sector, which had suffered without reliable access to water, and a chance to renegotiate land and water rights with Los Angeles (Garrett and Larson; Unrau 127).[18] That is, the selection of Manzanar as a site for a relocation center promised to showcase the productive potential of the Owens Valley if the LADWP were to relinquish land and water rights in the region. According to Colleen Lye, the incarceration of Japanese Americans across the US provided federal and municipal governments with a fixed supply of labor eager to prove their loyalty through work on land improvement projects that had been interrupted by the war (160). As internees, Japanese Americans were a "captive population [that] could figure as replacements for the volunteers and employees of New Deal domestic programs—now overshadowed by war conditions,

[18] Prior to his work with the WRA, Ralph P. Merritt was a member of the Inyo-Mono Associates, an organization tasked with the commercial redevelopment of the Owens Valley. After naming the Owens Valley a potential site for an internment camp, Merritt was one of several community members who were tasked with developing a program for incarcerated Japanese Americans that would benefit the region (Unrau 127).

including labor shortage, and opposed by an increasingly powerful congressional bloc" (161). But, it was not just the acquisition of labor that corresponded to the Bureau of Reclamation's efforts to transform nonproductive landscapes into productive regions through irrigation projects. Rather, the WRA also framed their removal of Japanese Americans from ethnic enclaves, such as Little Tokyo, in major cities across the America West as a means of social welfare that would provide rehabilitation and relocation programs after the war (Chang 72).

Third, environmental and anti-immigrant rhetoric linked to internment stemmed from pre-existing conflicts over conservation and land use. If conservation signified the careful preservation of the wilderness, then so-called "human conservation" sought to use wilderness spaces as a means of forced assimilation.[19] The efforts of the WRA can be viewed as a human conservation project aimed at protecting national identity through the selective segregation of those deemed environmentally damaging and damaged. Internment functioned as an indirect extension of the Alien Land Laws of 1913 and 1920, which prohibited aliens ineligible for citizenship from owning land. These laws sought to curtail Japanese competition in the agricultural sector, a white-dominated industry that posited "a systematic correlation between Japanese farmers and soil exhaustion" (Lye 157) given Japanese farmers cultivation of labor-intensive and soil-exhausting niche crops. Ironically, the lack of land ownership or long-term lease opportunities prevented Japanese farmers from forming sustainable relationships with their land, necessitating the cultivation of unsustainable crops to maximize profits. Yet, these laws did not achieve their ultimate goal: while they aimed to curtail the amount of Japanese farm acreage, that number substantially increased in the decade following the passage of these laws (Day 121). Internment thus provided another opportunity to

[19] The WRA published their account of internment following the war, calling their efforts to rehabilitate and relocate Japanese American internees "A Story of Human Conservation" (1946). In *America's Asia* (2009), Colleen Lye links this "conservation" framework to WRA administrators, many of whom had previously worked in agricultural offices (e.g. Farm Security Administration, Soil Conservation Service, Office of Land-Use Coordination) (159).

wrest power and property from Japanese farmers and their American-born children by rehearsing the environmental tropes on which the Alien Land Laws relied: internment would prevent white economic disaster caused by inhumanly efficient Japanese farmers. The use of such stereotypes to justify internment effectively removed Japanese competition in white-dominated businesses and industries, thereby preserving wealth and other resources in white communities.

All of these concerns supported the WRA's primary goal of assimilating Japanese American laborers through their relocation to the deserts of the American West. According to Beck, "[t]he usefulness of the desert as a place that produces accelerated ruins . . . suggests that inside the newly gridded United States exists a site capable of processing the extraneous or unwanted by-products of national formation. The wasteland of prehistory can be made to serve as the waste site of history" (73). The relocation of Japanese Americans to the so-called wastes of the American West encouraged the project of Americanization by requiring first- and second-generation Japanese Americans to rehearse the frontier narrative—the settlement of a pristine wilderness previously untouched by mankind—by acting as pioneers improving unclaimed lands. Notably, the rehearsal of this frontier narrative unfolded on lands previously occupied by Indigenous people. While Indigenous groups that had inhabited the land on which Manzanar was built had been temporarily driven from their ancestral home decades before WWII, other internment camps encroached on native lands, including the Gila River War Relocation Center and Poston War Relocation Center. The successful assimilation of Japanese Americans through their removal to internment camps thus depended on the continued erasure of Indigenous people, the creation of a pioneer community that further obscured the traces of Indigenous presence.

In attending to the environmental implications of *Farewell to Manzanar*, we can begin to understand dust not only as a metaphoric representation of place, but also as an environmental, social, and technological material in a system predicated on inequality. Rather than thinking about

these metaphoric qualities of sediment in the context of internment narratives, we also need to attend to the ways in which dust literally obscures the sediment layers of history at Manzanar, a history that has been policed by the LADWP. Houston emphasizes the materiality of the dust when she describes the internment experience as a remnant of a manmade catastrophe with long-term effects on the Owens Valley, noting how "great stretches of Owens Valley were once green with orchards and alfalfa fields. It has been a desert ever since its water started flowing south into Los Angeles, sometime during the twenties" (95). Houston attributes the preponderance of dust to the absence of water, linking the desertification of the region and the harsh conditions of Manzanar to the LADWP and its allies. In doing so, she situates her internment experience within the context of the California Water Wars, positioning internment as an episode in a broader history of environmental and social injustice predicated on the settlement of the Owens Valley. Houston gestures to the history of Native American exploitation in thinking about the way in which the wind reveals obsidian arrowheads—traces of Indigenous populations—in the dusty soil. Even as the desert landscapes of the Owens Valley have been constructed in part by the LADWP, they cannot totally hide the traces of previous indigenous and settler communities at Manzanar. In this way, the memoir casts internment as a node in an ongoing struggle where the past irrupts in the present rather than a linear narrative that builds upon previous historical acts.

The rapid construction of Manzanar provided a vision of what the Owens Valley might have resembled had the Reclamation Service been successful in their mission to irrigate the desert landscapes several decades earlier. At its height, Manzanar represented what WRA project director Ralph P. Merritt called "a war time city that sprang up from the sands of the desert of Inyo and returned to desert with the end of the war. It was the largest city between Los Angeles and Reno" (Merritt). Despite the harshness of the environment, internees at Manzanar successfully "fashioned a community which at its peak numbered 10,026 people. They established their own system of local

government, their own police and fire departments, and their own shops, offices, farms, medical services, schools, parks, museums, libraries, and concerts" (Kahrl 371). According to the "Silverman Report," a 1942 exposé written by *San Francisco Chronicle* feature writer Melton E. Silverman, "[i]n 60 days, the contractors said, they were going to build a city for 10,000 people. They were going to bring in 1,000 workmen to do the job. And in all Inyo County, according to 1940 census figures, there were only 7,626 inhabitants" (A173). During construction, "the huge lumber trucks were roaring up the 220 highway from Los Angeles and 400 carpenters were already working a 10-hour shift under the direction of the U.S. Engineers" (A173). The grueling schedule called for "completion of one block a day, for construction of a city—or at least of the barest living accommodations—for as many as 14,000 people in less than 6 weeks" (A174). To accomplish this monumental infrastructural building project, the "army of trained magicians" used prefabricated pieces to assemble a standard building type (A174). Because Manzanar was constructed on the site of a former irrigation colony, the site already had access to water and basic infrastructure, though terrain needed leveling, additional irrigation and sewage pipes required new trenches, and overgrown brush needed to be cleared. All of this was accomplished in less than a year—from the signing of Executive Order 9066 in February 1942 to the complete relocation of persons of Japanese ancestry in November 1942.

The development of Manzanar can be considered another wave of rural land development in the region, which temporarily fulfilled WRA leaders' fantasy of a "blooming desert," a "pastoral Eden" in the middle of the arid valley (Piper 122). This vision became a temporary reality as the internees made their living quarters more hospitable, transforming the desert landscape into an oasis replete with rock gardens, ponds, and other landscaped spaces. Although Houston initially describes Manzanar as a desolate site, she documents the gradual transformation of the camp into a home, a place where she sometimes forgets that she is a prisoner:

> Those parks and gardens lent it an oriental character, but in most ways it was a totally equipped American small town, complete with schools, churches, Boy Scouts, beauty parlors, neighborhood gossip, fire and police departments, glee clubs, softball leagues, Abbott and Costello movies, tennis courts, and traveling shows. (100)

The lengthy list of activities and buildings seemingly highlights the overwhelming American character of the camp as well as their successful assimilation into a quasi-democratic society. High school students even perform in a play called *Growing Pains*, described as "the story of a typical American home" (102). In these scenes, Manzanar resembles any other suburban community on the fringes of Los Angeles. Yet, the arrival of a problematic symbol of US settler colonialism—"an Indian who turned up one Saturday billing himself as a Sioux Chief, wearing bear claws and head feathers" (100)—disrupts the sense of normalcy that has been established in developing a "totally equipped American small town," as the presence of a displaced Indigenous figure from the Midwest gestures to the settler colonial origins of the nation and the more recent dispossession of Japanese American internees.[20]

Manzanar ultimately returned to the desert at the conclusion of WWII, but the reasons why it happened are less straightforward than Merritt and Houston would lead one to believe. Houston, in particular, revises her understanding of the desertification of the region when describing her return to Manzanar nearly thirty years after its closure. Unable to discern signs of the past, she acknowledges how the landscape has changed since WWII: "[Manzanar] has all but disappeared. . . . Even the dust is gone. Spreading brush holds it to the ground. Thirty years earlier, army bulldozers had scraped everything clean to start construction" (188-9). Instead of attributing the dust to the absence of water, Houston instead insists that the region's omnipresent dust is the byproduct of

[20] See Iyko Day's *Alien Capital* (2016) for her interrogation of the triangular relationship between settler, alien, and native in the context of Poston War Relocation Center and the Gila River War Relocation Center.

construction projects that removed brush, yet this explanation does not explain the continued presence of dust in the Owens Valley following WWII. Karen Piper instead suggests that the persistence of the region's dust should be understood in relation to the LADWP's complicity in erasing internment from public consciousness, as the LADWP required the US government to return Manzanar to its "original condition" following the war (115). While the "original condition" of the Owens Valley is subject to debate, this agreement nevertheless required: " (1) the complete dismantling of all structures, (2) the salvage and removal of all usable materials, (3) a complete inventory of all recovered materials, and (4) the removal of all unusable material" (115). These stipulations reflect the LADWP's efforts to erase any trace of Japanese American or Indigenous presence in the region, ensuring that the desertification of the Owens Valley would remain unchallenged following the closure of the camp. This forced erasure situates Manzanar as a flexible site of colonial management, capable of containing a captive population that, like the desert landscape, can be remade according to racist paradigms.

Today, the camp has been partially restored following its designation as a national historic site under the National Park Service. The museum gestures to the history of the Owens Valley, but prioritizes the experiences of Japanese Americans at the camp, memorializing the internees in elaborate displays featuring life-size models of barracks, informational videos, and, strikingly, a massive banner containing the names of the Japanese Americans interned at Manzanar War Relocation Center. Dust remains unmistakably noticeable upon stepping outside of the museum. Environmental groups have challenged the LADWP's desertification of the Owens Valley in the latter half of the twentieth century, but progress has been slow. In 1991, the Inyo-Los Angeles Long Term Water Agreement was signed, developing a groundwater management system. As part of a memorandum of understanding, community leaders leveraged the LADWP to restore water to the Lower Owens River, a project that would come to be known as the Lower Owens River Project

(LORP). Initiated in 2006, the LORP aims to re-water a 62-mile stretch of river and floodplain that had been diverted to the Los Angeles Aqueduct. The LORP will provide permanent water supplies to lakes and ponds that are home to wildlife habitats. At the same time, dust control measures undertaken by the LADWP at the beginning of the twenty-first century have sought to reduce the rise of particulate pollution in the areas surrounding Owens Lake, the largest source of dust in the region. To accomplish this, the LADWP has flooded shallow portions of Owens Lake, even as they continue to suggest that such water would be better used in Los Angeles. Despite this progress, problems persist to this day: particulate matter has been reduced but not eliminated; groundwater pumping still removes more water from the Owens Valley than what has been allowed to flow through dry waterways; and Indigenous claims to land and water remain unresolved.

The War Turned Inwards

With the surrender of Japan following the atomic bombing of Hiroshima and Nagasaki in August 1945, Dillon S. Myer, the national director of the WRA, was tasked with executing the final charge of his agency: to return all people of Japanese descent to their former homes at the conclusion of the war. The resettlement of Japanese Americans across the US was of utmost importance given fears expressed by Eleanor Roosevelt and other leading figures over the possibility of producing a culture of dependency and a welfare population that mirrored the so-called "Indian Problem" (Day 134). But reintegrating Japanese Americans into mainstream society was not as simple as providing employment opportunities and securing temporary housing, for the removal of Japanese Americans from urban centers across the American West had repercussions on the cultural, political, and social organization of major US cities. Although the WRA succeeded in relocating Japanese Americans in the Midwest and the East Coast, the vast majority of the interned

returned to their former homes, but the racial geography of such places, including Los Angeles, had undergone notable shifts during their absence.

While *Farewell to Manzanar* traces the racial rehabilitation of Japanese Americans through the development of a pioneer community in the desert wastelands of the Owens Valley, it largely overlooks the consequences of this Americanization project on ethnic communities in Los Angeles who were not deemed enemy aliens ineligible for rights as citizens. The memoir instead focuses on the postwar integration of Japanese Americans into mainstream society, as exemplified by Houston's attempts to be named carnival queen at her high school in San Jose. In turning to Nina Revoyr's novel *Southland*, I investigate how the novel situates internment as another instance of racial violence in the history of Los Angeles' urban development, linking the incarceration of Japanese Americans to practices of spatial containment and segregation that have dictated the movement, or lack thereof, of ethnic minorities around the city. Although internment serves as a minor footnote in the larger narrative arc of the novel, it nevertheless provides a lens through which to understand the racialization of people and differentiation of space according to surplus and waste as well as security and insecurity. By juxtaposing Japanese American and African American experiences in Los Angeles before and after WWII, the novel examines how institutionalized racism has manifested itself in the spatial orientation of the city's neighborhoods and has inhibited the social and economic mobility of specific racial and ethnic groups. Thinking about the shifting racialization of Japanese Americans and African Americans brings into focus what Moon-Kie Jung identifies as the fictiveness of the nation-state, how the naturalization of white supremacy in the built environment has precluded the possibility for actual equality between racial and ethnic groups in the US.

Premised on an unsolved murder case involving the death of four Black teenagers whose bodies are found in a corner market's walk-in freezer during the Watts Riots of 1965, *Southland* opens in 1994 in the days following the Northridge earthquake, which has literally and figuratively

destabilized the social order of a city still negotiating the aftershocks of the 1992 Los Angeles riots. Jackie Ishida, a third-generation Japanese American law student at UCLA, responds to her aunt's request to assess the legal validity of a will written in 1965 by her recently deceased grandfather—Frank Sakai. That will names Curtis Martindale, an individual with whom neither women are familiar, as the beneficiary of Frank's former grocery store in the Crenshaw neighborhood. This discovery sets in motion a series of events that leads Jackie to several disquieting truths about her family history and that makes visible the social injustice to which Jackie has previously been blind. Specifically, Jackie learns that Curtis was the illegitimate son of her grandfather and Alma Martindale, an African American schoolteacher, and that Curtis and three other innocent boys were murdered at the hands of a Black police officer during the Watts Riots for their perceived expendability. The novel positions Frank and Alma's hidden romance as a metaphor for the neglected history of African Americans and Japanese Americans during WWII and beyond, with Curtis' death figured as the impossibility of cross-racial solidarity in the postwar era. This metaphor is developed through the documentation of racial violence at three historical junctures—the early 1940s, the 1960s, and the 1990s—through the perspective of African American and Japanese American figures who supplement Jackie's limited understanding of the injustices her family experienced and provide testimony in her unofficial investigation into the murder case.

Although the environmental implications of internment are only explored in a single chapter of *Southland*, the deserted landscapes of Manzanar provide a lens through which to view the novel's later engagement with naturalized forms of racism. In the aftermath of the bombing of Pearl Harbor, Frank's world is radically transformed by Executive Order 9066: his father is taken away by men in dark suits and his family is forced to sell their belongings in preparation for evacuation. After vacating "the greenery, the view of the mountains, the huge expanse of clear blue sky" at their home in Angeles Mesa, Frank and his family spend six weeks living in the horse stalls at Santa Anita

racetrack before being transferred to Manzanar (93). They arrive at Manzanar "on a day so choked with dust that when the guard pointed toward what he said were their quarters, Frank thought he was directing them into the desert" (110). Despite being assigned to a barrack with another family, the internees remain largely exposed to the elements, susceptible to the wind and dust: "[t]he wind pressed the dust into every crack of skin, every fold of [Frank's] clothing; he nailed soup can lids against the holes in the wall in order to keep it out" (111). Frank's makeshift solution proves useless come winter: "[t]he wind relinquished its dust in the winter, and instead blew snow and pieces of ice against the side of the barracks. The ice hit hard, a freezing assault, and when Frank opened the door, the cold air slapped his face" (111). As with *Farewell to Manzanar*, the environmental contrast between Los Angeles and Manzanar emphasizes the way in which the built environment of the Owens Valley has been employed to break the spirits and the bodies of the prisoners. Years later, the effects of this psychological and physical conditioning are made manifest when Frank reflects upon the suggestion of traveling to the mountains for a romantic getaway. Having been stripped of his rights as a citizen and subjected to the harsh landscapes of the Owens Valley, Frank "didn't really want this—every place outside of the city, whether country, marsh, desert, or mountain, was, in his mind, the landscape of war" (334). But, as readers learn, even the illusion of safety offered by the city—by his beloved Angeles Mesa—is dispelled during the Watts Riots of 1965, which transform South Los Angeles into a literal and figurative warzone.

The language of war and environmental disaster pervades the novel's characterization of the Watts Riots of 1965, situating internment as part of a continuum of racial violence linked to the concentration of populations in rural and urban wastelands—a practice that reveals the value of specific groups and spaces. In characterizing the Watts Riots as "the other conflagration, the war turned inward, of 1965" (55), the novel suggests that the US government has waged war against both foreign and domestic threats in order to produce specific populations conducive to national

ideals, whether it be through the incarceration of enemy aliens or the willful neglect of people of color. Historically, the Watts Riots served as the culmination of simmering tensions between the Los Angeles Police Department and the African American community, who had repeatedly criticized police officers for undue brutality and violence. On August 11, 1965, an African American motorist, Marquette Frye, was arrested for speeding. In response to allegations of police brutality, the community erupted in riots, arson, and looting that lasted six days across an approximately 46.5-square mile zone where "rioters" and "spectators" raged (Horne 3). Such anger reflected what Black community members viewed as years of mistreatment by police officers who were more concerned with harassing residents than protecting them, as white flight to the suburbs had transformed inner city neighborhoods into ethnic ghettos where Black populations languished without governmental resources and services. No longer simply tasked with protecting the population, police had been deployed to safeguard wealthier, suburban neighborhoods from undesirable elements, transforming Los Angeles into what Mike Davis has called a "fortress city" where real and imagined borders, made manifest in fortress-like architectural designs, divided the city into zones of security and insecurity (224).

Southland narrates the violence of urban development primarily through natural metaphors, situating environmental difference as an indicator of governmental neglect of specific ethnic communities. For instance, the novel's prologue positions the city's ongoing history of racial violence as the byproduct of wartime segregation and containment policies, including Japanese American internment, by tracing one neighborhood's gradual transformation from "a children's paradise" into a place that "is feared and avoided, even by the people who live there" (9-10). The metamorphosis of Angeles Mesa into Crenshaw is reflected in the shifting appearance of the neighborhood: broken windows, empty storefronts, and overgrown weeds highlight the deterioration of a once vibrant neighborhood that had "everything—food, bowling, church, and

friends" (11). The novel specifically attributes this loss of community to urbanization by framing the neighborhood as "part of the growing city only in name" (10), and instead romanticizes the countryside for its liberatory potential rather than its productivity. The prologue further suggests that immigrants from all corners of the US converged on Angeles Mesa for the chance to experience "the space of the Mesa, and the fresh air that carried the scent of jasmine in spring and oleanders in the summer" (10). As Angeles Mesa, the neighborhood guarantees access to "fresh air" and the "scent of jasmine in spring and oleanders" to everyone regardless of racial or socioeconomic status. The wide-open spaces of Angeles Mesa foster an open-mindedness that is not present elsewhere in the growing metropolis, as difference—not sameness—is the underlying commonality amongst the residents of the multicultural neighborhood who hail from diverse geographic regions as well as distinct social and cultural backgrounds.

The prologue suggests that the utopian space of Angeles Mesa no longer exists due to urbanization, which the novel aligns with both unsustainable resource extraction and the unequal distribution of resources amongst urban populations. When Jackie first navigates her car under Interstate 10 while driving to Crenshaw, her reaction echoes the logic of security underlying racially restrictive housing covenants that transformed Los Angeles' neighborhoods: "As Jackie emerged on the other side of the underpass, she took another breath. She was south of the freeway now, and was decidedly anxious. She locked her doors, and then felt ashamed of herself. But already the streets looked different than they did to the north of the freeway" (58). Unlike "the north of the freeway," the foreignness of the "other side" fills Jackie with terror, prompting her to take precaution against the racial and socioeconomic difference represented by the unfamiliar city streets. According to Davis, "'security' has less to do with personal safety than with the degree of personal insulation, in residential, work, consumption and travel environments, from 'unsavory' groups and individuals, even crowds in general" (224). Scott Kurashige locates the origins for this understanding

of security in Los Angeles in his investigation of racialized housing covenants, noting how African Americans and Japanese Americans "were welcome in Southern California so long as they confined themselves to the proper social and geographical place defined by whites" (23). Such ideas influenced the redlining practices that restricted people of color to specific neighborhoods through the denial of housing loans.

Deemed unsalvageable by the city's fearful white population, Crenshaw historically did not benefit from Los Angeles' urban renewal campaigns following WWII.[21] The legacy of this disinvestment is evident in Jackie's characterization of Crenshaw through its anxiety-inducing architecture and atmosphere: unlike the richer neighborhoods north of Interstate 10, Crenshaw is populated with "liquor stores, discount clothing shops, fast-food places" with "black accordion gate[s] attached to the front" (58). Jackie's initial encounter with African American poverty is dictated by her preconceptions of the neighborhood as a ghetto; the preponderance of "liquor stores, discount clothing shops, fast-food places" not only draws into relief Jackie's privilege as an upwardly mobile, middle-class Japanese American, but also speaks to the willful neglect of the neighborhood by the municipal, state, and federal governments. That the once thriving neighborhood has transformed into a food desert speaks to the government's disinvestment in places where people of color are allowed to congregate. Moreover, Jackie's description of the neighborhood's appearance—the omnipresent "black accordion gate[s]"—is articulated in racialized terms of security and insecurity; that is, the supposed insecurity of the neighborhood, linked to its predominantly African American population, prompts her to lock her doors. Jackie's reaction can be understood through the divergent connotations of the synonyms "ghetto" and "ethnic enclave." Yoonmee Chang defines "ghetto" as "a space of structurally imposed, racialized class inequality, of

[21] See Monica Chiu's *Scrutinized! Surveillance in Asian North American Literature* (2014) for a longer discussion of Crenshaw and its differences from Little Tokyo in the context of *Southland*.

involuntary containment to racialized poverty and blight" (2). Conversely, she notes how "ethnic enclave" evokes "a rosier picture of racial-spatial segregation, and that in reference to Asian Americans foregrounds a sense of cultural community and culturally driven segregation, that is, voluntary, culturally chosen segregation" (2). For Chang, what ultimately determines the labeling of a neighborhood as "ghetto" or "enclave" depends on the community's access to economic mobility and political capital, yet such access is mediated by racial projects that have historically disadvantaged Black communities.

The novel attributes the loss of community in Crenshaw to the changing perception of Japanese Americans in the public eye—from yellow peril to model minority. By 1965, Japanese American populations were no longer viewed as yellow peril threatening the nation, but as model minorities who had successfully assimilated into the body politic through productivity that rivaled their white counterparts. As Kurashige notes, acceptance of Japanese Americans as model minorities allowed "whites to act in a manner consistent with modernist narratives of integration, to see themselves as tolerant people with rational rather than prejudiced reasons for opposing Black political demands" (11). Building on this characterization, Chang describes the way in which the model minority myth distinguishes Asian Americans in terms of race and class in order to "claim that they do not suffer class inequity, but on the contrary, that they readily transcend it" (4). Chang's definition of the model minority suggests that stereotypical representations of Asian immigrants are influenced by not only racial otherness but also socioeconomic difference; capable of achieving middle-class status after being interned, Japanese Americans purportedly showed that African American economic stagnation was a crisis of that community's own making. In defining the model minority stereotype as the occlusion of class inequality, Chang notes how Asian immigrants are no longer viewed as economic threats to the nation, but rather as productive potential that can advance the economic vibrancy of the nation, affording those deemed "model" citizens specific rights and

privileges. Yet, as *Southland* makes legible, Japanese American assimilation and African American incarceration are the products of a naturalized white supremacist agenda that racializes people and differentiates space to preserve resources in white communities.

Changes of scenery in *Southland* do not merely allow characters to reflect on their perspective of the world, but are instead indicative of efforts to step outside racial projects that have mediated access to valorized spaces. After returning to Los Angeles from Manzanar, Frank chooses to stay in Angeles Mesa in order to avoid "the humiliation of the Yamamotos and the Haras, who tried to buy houses in the South Bay and Westside and were turned down by thin-lipped realtors" (120). Even so, the novel notes how the residents of those same communities are willing to take advantage of Japanese American labor to beautify their neighborhoods: "People's lust for tasteful lawns and gardens—along with the perception that the Japanese were better with plants—had quickly made [Japanese Americans] wealthy" (189). By the time the landscape of war has encroached upon Frank's doorstep in Angeles Mesa, he has gained the ability to relocate his family to the green suburbs of the South Bay—the "tree-lined streets of Torrance" (15)—without the fear of humiliation that had haunted other Japanese American families several decades earlier. And, in his senior years, Frank moves with Jackie's aunt to a gated community in Culver City, where a security guard monitors visitors to curtail a recent spate of burglaries. Previously subjected to the desert wastelands of the Owens Valley, Frank has gained access to the green communities of South Bay and West LA, places that retain the environmental character of Angeles Mesa but restrict access to white communities or successfully assimilated ethnic minorities. Frank's moves across Los Angeles show how the value of places is not fixed but shifts according to the infrastructural qua racial projects that simultaneously provide vital resources to specific populations and recalibrate the value of land.

The novel's mystery starts to unravel after Jackie and James Lanier, the cousin of Curtis and a friend of Frank, travel to the San Francisco Bay Area to interview several witnesses in their investigation, who shed light on the identity of the four teenagers' murderer. On their journey to Northern California, Jackie and Lanier travel through increasingly unpopulated regions that stand in stark contrast to the density of Los Angeles:

> Still, as they sped along, wind brushing back their hair and music playing so loud they couldn't talk to each other, they felt alive, refreshed, set free. They'd drive through the Hollywood Hills; battled traffic in the Valley, climbed in the Angeles National Forest. And when they came through the Tejon Pass, clouds clinging to the car, and found the green and brown fields spread out endless before them, Jackie thought she could see the end of the world. (284)

Jackie's migration northward on Interstate 5 functions as a symbolic migration through layers of urban development that have defined the region's racial character: she first drives through the predominantly white suburban neighborhoods of the Hollywood Hills before traveling through Tejon Pass, the former site of Fort Tejon where hundreds of Paiutes and members of allied tribes were relocated and later conscripted into the US settler economy. The openness of California's Central Valley, its unpopulated expanses, allow Jackie to "break up the tension in her stomach" by laughing in a way she had not done "in months" (284). Jackie's physical response to the landscape mirrors the multiracial immigrants' response to Angeles Mesa in the novel's prologue: the "wide-open spaces, huge expanses of land unsullied by buildings or people" free her from the overwhelming chaos of the urban environment and its organization according to value and vitality. Significantly, the novel does not dwell in these open spaces, but instead gestures to the importance of returning to the responsibilities that Jackie and Lanier have undertaken to enact racial justice. Upon arriving in San Francisco, Jackie "felt herself tighten as she thought about the things that

awaited them" (285). The brief detour through the open spaces of California—constructed by unsustainable ecological practices and socially racist policies—does not ultimately afford Jackie a permanent reprieve from the anxiety of urban space; rather, it challenges her to confront the institutional powers that have allowed her to be complicit in the exploitation of people and spaces.

In tracing Jackie's development from racial ignorance to enlightenment, the novel ultimately showcases the importance of undoing the racial projects that have transformed the built environment from egalitarian spaces of opportunity to fortified cells of abundance and poverty. The presence of intended zones of depopulation and destitution in *Southland* shows how the US has, in the words of Jung, never been a nation-state, but rather operates according to the logic of empire, which depends on the unequal distribution of rights based on race and space.[22] The novel thus reveals how the segregation of criminalized populations is part of an internal US war against members of the body politic, even as municipal and state governments have variously supported and counteracted private and capitalist practices at different moments. Although the experiences of African Americans and Japanese Americans are not, as Grace Kyungwon Hong notes, analogous, they are nevertheless "related manifestations of the privileging of private property rights that structures the liberal democratic state" (293). *Southland* moves beyond questions of capitalist accumulation and private property rights in troubling notions of a "liberal democratic state," asking readers to consider the racial geography of Los Angeles according to policies of concentration, incarceration, and segregation that have reinforced a possessive investment in whiteness.

[22] While Jung does not differentiate between federal, state and municipal policies in his reading of the empire-state, it is worth mentioning that the state of California has variously supported and counteracted private and capitalist practices at different moments and in different contexts.

Adjacent Histories of Displacement

Farewell to Manzanar and *Southland* demonstrate the way in which internment and urban development in Southern California are inextricably linked through ideas of infrastructure and the built environment, recasting the racial rehabilitation of Japanese Americans at Manzanar War Relocation Center as a policy with ramifications on the racial geography of urban centers like Los Angeles. However, although such texts position Manzanar War Relocation Center as an animated site for exploring questions of infrastructure, their narrative and thematic trajectories remain limited in scope when compared to Karen Tei Yamashita's novel *Tropic of Orange* (1997). *Tropic of Orange* offers an alternative way of approaching internment and adjacent forms of racial violence by situating Manzanar War Relocation Center as part of a larger narrative focused on immigration, multiculturalism, and globalization. Like *Southland*, *Tropic of Orange* explores the arbitrary borders that limit cross-cultural communication, but interrogates those physical and psychological barriers on broader temporal and geographic scales, showing how the local is always already imbricated with the global. Rather than focusing squarely on the internment camp, Yamashita's novel instead highlights instances of environmental and social injustice that affect the lives of Los Angeles' diverse residents, including one named after Manzanar War Relocation Center, following the ratification of NAFTA, a trilateral agreement between Canada, the United States, and Mexico promising free trade between the three nations, in 1994.

Tropic of Orange draws from different genres—ranging from hip hop and chicanismo to noir and magical realism—not only to highlight the literary and cultural texts that have become synonymous with Los Angeles but also to encapsulate the range of individuals inhabiting Los Angeles in the 1990s. Written from the perspective of seven different characters, the novel does not privilege any single character's storyline, instead highlighting the interconnectedness of these seemingly disparate individuals. Specifically, the novel illuminates the fictional lives of the following

characters: Rafaela Cortes, an immigrant from Mexico; Bobby Ngu, an immigrant from Southeast Asia; Emi Sakai, a fourth-generation Japanese American media executive; Buzzworm, an African American veteran and community organizer; Manzanar Murakami, a homeless, third-generation Japanese American surgeon; Gabriel Balboa, a Chicanx journalist; and Arcangel, a street performer who emblematizes migrant laborers from Latin America. By tracing the lives of these characters as they migrate through the spaces of the US-Mexico borderlands, the novel demonstrates how globalization has reoriented national boundaries through the exportation of US subsidized crops, the migration of displaced laborers to the US, and the expendability of undocumented members of society (e.g. the undocumented, the homeless, and the marginalized), highlighting the complicity of corporations in the violation of human rights. The novel's plot coalesces around the eponymous orange, grown at Gabriel's vacation home at the Tropic of Cancer, as it is transported by Arcangel across the US-Mexico border from Mazatlán in northwest Mexico to Los Angeles over seven days following the summer solstice. That orange is decried as contraband after the US government discovers that imported oranges have been used to transport narcotics. But restrictions on oranges come too late, as a cocaine-laced orange catalyzes a multi-truck explosion on Los Angeles's Harbor Freeway after being consumed by a motorist. The spatial and temporal disorientation that various characters register as the eponymous orange migrates to the US gestures to the way in which technology has facilitated the accelerated circulation of commodities across the globe while facilitating the dehumanization of the laborers responsible for assembling or producing such goods. That is, the movement of the orange literally and figuratively brings Latin America to the US border, suggesting an inextricable link between contemporary forms of neoliberalism and the historical legacy of colonialism.

The novel's emphasis on border crossings is reflected in its grid-like structure. Although the novel features a traditional table of contents, it also includes what Yamashita has dubbed the

"HyperContexts." In this spreadsheet, Yamashita organizes days of the week (e.g. Monday through Sunday) along the horizontal axis while placing the characters along the vertical axis. The resulting intersections indicate where (place) and when (time) each character is located on a particular day. Yamashita has described in interviews how she formulated the novel using Lotus, a precursor to Microsoft Excel, as a means of "mapping" her work, gesturing to the overlapping infrastructures necessary to compose the novel ("The Latitude"). Looking at the HyperContexts as a single entity, one is reminded of the characterization of multiculturalism as a mosaic, a revision of the melting pot ideology that characterized early US perceptions of immigration and multiculturalism. The mosaic-like nature of the HyperContexts might provide a generative and provocative way of understanding the novel's approach to multiculturalism in the wake of NAFTA, but is ultimately shown to be incapable of encapsulating the novel's multifaceted characters. That is, the apparent rigidity of the HyperContexts belies the chaos that unfolds as each character is drawn into the eponymous orange's disorienting orbit. Indeed, just as the novel ultimately characterizes national boundaries as arbitrary lines that may or may not be demarcated by physical structures, the invisible lines of the HyperContexts are ultimately shown to be artificial, incapable of containing the novel's overlapping storylines.

Maps, like the HyperContexts, play a pivotal role in understanding the novel's characterization of the spatial orientation of the city according to an infrastructural logic. As part of his organizing efforts, Buzzworm relays stories to Gabriel in the hopes that the journalist will shed light on the reality of South Los Angeles. In one of their exchanges, Gabriel presents Buzzworm with a map of the neighborhood literally torn from Mike Davis' *City of Quartz* (1990). Although the map simply notes the "territorial standing of Crips versus Bloods" in 1992, Buzzworm recognizes that that map reduces the neighborhood's complexity to "thick lines" (80-1). In framing Buzzworm's neighborhood as gang territory, the map transforms South Central Los Angeles into a

stereotypical landscape of racialized poverty and violence that does not accurately reflect the lived experiences and needs of the community: "Even if it were true, whose territory was it? Might as well show which police departments covered which beats; which local, state and federal politicians claimed which constitutes; which kind of colored people (brown, black, yellow) lived where" (81). The map ignores the conditions that contribute to the formation of gangs and overlooks the residents who do not claim membership in either gang by collapsing these differences into "thick lines." This seemingly suggests that communities are incapable of showing improvement or change when deprived of the resources needed to thrive. Such inflexibility appears to serve the interests of city leaders and property developers who advocate for gentrification under the guise of urban renewal and city beautification. As Buzzworm notes, calling his neighborhood "gang territory" allows bureaucrats and developers to "leave it crumbling and abandoned enough; nothing left but for bulldozers. Just plow it away. Take it all away for free" (83). In other words, the suspension of infrastructural projects becomes a means of devaluing land so that it can be remade and resold at a premium at the expense of the wellbeing, financial or otherwise, of residents.

Additional maps charting freeway expansion and urban development replicate the representational violence of the gang map, ignoring the effects of such construction on low-income communities and communities of color. In recalling conversations with people "saying they used to live here or there," Buzzworm notes how "here or there is the Dorothy Chandler Pavilion, or Union Station, or the Bank of America, Arco Towers, New Otani or the freeway" (82). Each of the buildings that Buzzworm mentions not only highlights the gentrification of low-income neighborhoods in downtown Los Angeles, but also illustrates the growing influence of foreign capital on transforming Los Angeles into a global hub for culture and finance—a transformation that seemingly relies on the displacement and segregation of specific populations. In trying to imagine the location of his own home in this map, Buzzworm wonders, "Where was his house on

the map? Between Mrs. Field's and the Footlocker? Somebody's parking lot. Somebody's tennis court? Or just the driveway to some gated communities?" (82). Buzzworm's line of questioning highlights the vulnerability of low-income communities and communities of color to processes of gentrification and urban renewal that transform properties like his house into exclusive spaces of consumerism and security. These questions show how developers and city leaders "must have the big map. Or maybe just the next map. The one with the new layers you can't even imagine" (82).

Buzzworm's efforts to improve his community are thus motivated by his attempt to "put down all the layers of the real map" so that "he could get the real picture" (81), one that better encapsulates the lived experiences and needs of the community. Specifically, he aims to combat gentrification with what he terms "gente-fication." Rather than relying on local, state, and national authorities to enact change in service of the community, "gente-fication" promotes the transformation of people already living in impoverished neighborhoods into "their own gentry. Self-gentrification by a self-made set of standards and respectability. Do-it-yourself-gentrification" (83). If gentrification displaces existing communities through the settlement of upwardly mobile, middle-class residents in neighborhoods with limited resources, then "gente-fication" works to ensure that existing inhabitants also experience the cultural, economic, and social benefits of urban renewal. Significantly, in recognizing the negative effects of gentrification on communities like his own, Buzzworm begins to contemplate prior histories of displacement, including the removal of "Mexican rancheros and before that, about the Chumash and the Yangna" (82), that have been largely forgotten as a result of urban development.[23] Buzzworm's acknowledgment of the Chumash and the Tongva tribes in Southern California position gentrification as a modern form of

[23] Yangna was the name given to the Tongva settlement along the Los Angeles River. It would have been situated near Union Station in downtown Los Angeles, which has contributed to the displacement and relocation of other ethnic minorities inhabiting the area, including Chinese, Italian, and Mexican populations in the early 20th century.

displacement rooted in the settler colonial logic of land dispossession, labor exploitation, and resource extraction.

Like Buzzworm, Manzanar Murakami recognizes the importance of putting down "all the layers of the real map." But, while Buzzworm can only imagine the layers of the "real map," Manzanar Murakami witnesses "the complexity of layers" in their totality from his perch atop an overpass along the Harbor Freeway, capable of "pick[ing] them out like transparent windows and place them even delicately and consecutively in a complex grid of pattern, spatial discernment, body politic" (56-7). Manzanar Murakami's ability to comprehend these mapping layers is as much visual as it is aural; each of the maps "was a layer of music" that reflects the residues of sounds in the city" (56-7). For Manzanar Murakami, these mapping layers "began within the very geology of the land," including geological features like "the artesian rivers running beneath the surface" and the "complex and normally silent web of faults" (57). Below the surface, he also observes "the man-made grid of civil utilities," such as natural gas pipelines, sewage tunnels, and underground electrical grids (57). Each of these features situate environmental and social injustice as part of the city's foundation. For example, in describing the "unnatural waterways of the Los Angeles Department of Water and Power" (57), Manzanar Murakami alludes to the theft of water from the Owens Valley. And, in noting the "cascades of poisonous effluents surging from rain-washed streets into the Santa Monica Bay" (57), he traces the hidden movement of toxic waste through the city and its effects on invisible populations, like the homeless, who inhabit the city's streets.

Whereas a normal person would be overwhelmed by the complexity of these maps, Manzanar Murakami is capable of processing them as individual entities and as constitutive parts of a totality. As the novel suggests, Manzanar Murakami is no ordinary man: he is the first *sansei* born in captivity, taking his name from the internment camp in which he was born; he trades the surgeon's scalpel for the conductor's baton; and he voluntarily roams the city as a homeless man.

Manzanar Murakami functions as one of several characters who bridge multiple storylines, linking together Buzzworm's engagement with impoverished African American and Latinx communities, Emi's media-saturated view of Los Angeles, and Gabriel's efforts to become an acclaimed journalist in the vein of Ruben Salazar. Manzanar Murakami is situated physically and psychologically at a crossroads: he not only mediates the intersection of freeways in downtown Los Angeles but also negotiates the ongoing effects of Japanese American internment on future generations. Chiyo Crawford suggests that every time Manzanar Murakami's name appears on the page, readers are reminded of the history of Japanese American internment, even as the novel does not actively describe the conditions of the internment camps or the circumstances of internment (86). Instead, in placing Manzanar Murakami at the intersection of freeways as well as at the crossroads of cultures, the novel draws from Manzanar Murakami's personal history of marginalization and displacement to situate the acts of social and environmental injustice with which the novel engages. And just as the specter of internment lingers over the novel, so, too, does the threat of military action, as suggested by the military helicopters circling the homeless encampment on the Harbor Freeway following the novel's apocalyptic climax.

In unfolding the layers of the built environment, Manzanar Murakami recognizes not only the history of urban development but also the legacy of manifest destiny as it unfolds in the American West. For instance, he can envision:

> when the V-6 and the double-overhead cam did not reign. In those days, there were the railroads and the harbors and the aqueduct. These were the first infrastructures built by migrant and immigrant labor that created the initial grid on which everything else began to fill in. Steam locomotives cut a cloud of black smoke through the heart of the West. Yankee pirates arrived with cotton linens, left with smuggled cowhides and tallow. And the water was eventually carved away from the north, trickled then

> flooded, into this desert valley. And after that nothing could stop the growing congregation of humanity in this corner of the world, and a new grid spread itself with particular domination. As someone said, now the freeways crashed into each other with flower beds. (237)

Manzanar's characterization of the settlement of the Los Angeles Basin is notable for the way in which it interweaves human struggle with the development of infrastructure. Rather than portraying infrastructure as merely the "grid on which everything else began to fill in," Manzanar also attends to the human dimension of such development: "migrant and immigrant labor" created railroads, "Yankee pirates" unlawfully encroached on Indigenous lands and transformed the region into a trading outpost, and the "congregation of humanity" reshaped the region to suit their respective needs. Moreover, in tracing a history of Los Angeles that predates an era of automobiles with high performance engines, Manzanar instead gestures to the prior infrastructures that had been erased or obscured in making way for the freeways; before the "freeways crashed into each other with flower beds," other forms of infrastructure motivated and encouraged urban development.

Manzanar's perception of infrastructure as part of "musical maps" contrasts the heroic terms in which engineering projects have been traditionally narrativized. Lifting the shroud of secrecy surrounding the construction of the Los Angeles Aqueduct, the *Los Angeles Times* famously declared in 1905 that "[t]he cable that has held the San Fernando Valley vassal for ten centuries to the arid demon is about to be severed by the magic scimitar of modern engineering skill" (qtd. in Kahrl 175). Highlighting the importance of water infrastructure in transforming the San Fernando Valley into a site of agricultural productivity and suburban development, the *Los Angeles Times* frames Mulholland's work as the superintendent of the LADWP and the chief engineer of the Bureau of

Water Works and Supply in quasi-biblical terms.[24] Later engineers would attempt to replicate Mulholland's successful conquest of nature by designing and completing other projects that demonstrated man's conquest over nature. For instance, engineers capitalized on the image of Mulholland claiming water for the Los Angeles Basin by creating a roadway in his honor—the Mulholland Highway. As historian Matthew Roth notes, the construction of Mulholland Highway in the 1920s, a 22-mile "road to nowhere" in the Hollywood Hills, signaled efforts to recapture the glory of Mulholland's vision for engineered landscapes and shaped later debates over gridlock and the lack of transportation options in the Los Angeles region. Though constructed without Mulholland's intervention or influence, civil engineers nevertheless sought to replicate his vision by operating outside of municipal policies. Because Mulholland Highway and the Los Angeles Aqueduct reflect an "engineer's deep appreciation for flow" (Roth 548), they both evince what David Nye calls the "technological sublime." The technological sublime refers to an engineering aesthetic derived from technological innovation and natural conquest (Roth 565). By reengineering conventionally sublime landscapes, civil engineers not only subdued nature, but also emphasized the dramatic contrast between the natural and the unnatural, celebrating human technological achievement. The association of Los Angeles with concrete and sprawl might thus be traced to early 20th-century engineering projects that emblematized the technological sublime: the construction of the Los Angeles aqueduct, the elimination of street cars and trains in favor of automobiles, and the transformation of the Los Angeles River into a concrete flood control channel.

Thus, from an infrastructural standpoint, what makes Manzanar Murakami's vision of mapping layers provocative is the way in which the infrastructural grid is viewed in relation to the laborers responsible for constructing and maintaining such structures. While Sue-Im Lee proposes

[24] Mulholland's triumph has been documented by numerous historians, including William Kahrl's *Water and Power* (1982) and Marc Reisner's *Cadillac Desert* (1986). Moreover, visitors to Griffith Park in Los Angeles drive past the Mulholland Memorial Fountain when entering the park northbound on Crystal Springs Drive.

that Manzanar Murakami perceives the infrastructural grid as "a physical reminder that we occupy a single structure of existence and that the wires, pipes, cables, and freeways are all evidence our bounded-ness, our interconnectedness" (516), I suggest that Manzanar Murakami situates infrastructure as more than a metaphor for cross-cultural connection. Rather, his perspective of these mapping layers implies that infrastructure not only produces specific populations, but is also appropriated and augmented by those same people for their own purposes. For Manzanar Murakami, infrastructure is not what Pierre Belanger describes as a standardized (linear and closed system), mono-functional (single-use), and durable (inflexible to change) system (278). Rather, as Yamashita has stated, "every new group of immigrants appropriates the given structures and infrastructures to take ownership of a new home" ("An Interview"). Manzanar's transformation of infrastructure into an orchestral composition suggests that infrastructure is meant to be repurposed and remade according to the people who inhabit a territory, rather than solely being used to facilitate capitalist accumulation.

This appropriation of pre-existing structures is evident in the way Manzanar Murakami witnesses the transformation of the freeway from its intended purpose (transportation for the masses) to an alternative purpose (home for the homeless). When two men crash their convertible after consuming an imported orange laced with cocaine, traffic comes to a screeching halt. The resulting traffic jam culminates in the explosion of several gasoline tankers, forcing a nearby homeless encampment to take refuge on the freeway in abandoned cars. As "life filled a vacuum, reorganizing itself in predictable and unpredictable ways" (121), the homeless transform the freeway into "a trailer park akin only to a giant Arizona swap meet" (168) where new forms of community emerge, with groups huddled around idling vehicles to listen to audiobooks and CDs. With traffic at a halt, Manzanar Murakami experiences a "moment of stasis" in which he remembers the past: "he saw his childhood in the desert between Lone Pine and Independence, the stubble of manzanita and

the snow-covered Sierras against azure skies" (170). He notes that this out-of-body experience does not seem compatible with the "rational downtown backdrop of business, bureaucracy, banking, insurance, and security exchange" (169), as this temporary calm disrupts the neoliberal drive for economic efficiency and capitalist accumulation. This short-lived reverie is subsequently broken by the arrival of military helicopters—emblems of governmental power—that attempt to return order to the city by firing on the homeless encampment.

Manzanar Murakami's subsequent inability to hear music following the violent dispersal of the homeless encampment signals the end of his orchestral composition. Despite the violent conclusion to this scene, I argue that the novel's depiction of the freeway's transformation and Manzanar Murakami's mapping layers highlights the possibility for appropriating infrastructure to advance the aims of social justice, even if such appropriations only exist temporarily. The homeless population's misuse of vehicles on the freeway, the reordering of society in this vacuum, allows for things that were perhaps previously unimaginable, bringing forward narratives and stories to which viewers were not previously privy. And, importantly, this misuse of infrastructure draws into relief the ongoing power dynamics that structure a post-internment world and that limit potential futures: the specter of the military lingers; displacement continues on a daily basis; and people of color are disproportionately incarcerated in the nation's overcrowded, increasingly privatized prisons. Turning to infrastructure thus reveals the multiple narrative arcs emerging from Manzanar War Relocation Center, the persistent networks of power dependent on the continued erasure of specific populations and environments.

Denaturing White Supremacy

In attending to the environmental narratives of racial violence emerging from and adjacent to Manzanar, this chapter has sought to show the inseparability of environmental and decolonial

frameworks in critiquing the differential provisioning that continues to haunt racial and ethnic minorities in the US. Institutional structures of violence that enabled the relocation of Japanese Americans en masse are also linked to the relocation of those populations deemed undesirable or unsalvageable before, during, and after WWII. Specifically, *Farewell to Manzanar, Southland*, and *Tropic of Orange* demonstrate how the built environment has been mobilized against racial and ethnic minorities in service of white supremacy, whether it be in the context of Japanese American internment, African American segregation, or Indigenous dispossession. Houston's, Revoyr's, and Yamashita's narratives show how Japanese Americans have been racialized in overlapping and divergent ways according to their perceived threat to the cultural, economic, and political primacy of whiteness—a hierarchical distinction that has been naturalized in the way in which urban and rural spaces have been constructed as empty, insecure, or wasteful. Reading the three texts alongside one another illuminates the environmental implications of the incarceration of Japanese Americans at Manzanar, bringing into focus the settler colonial and imperialist policies that have fostered the infrastructural development of the US in the nineteenth and twentieth centuries and that have promoted the differentiation of people of color as enemy aliens or unequal citizens. This differentiation is made manifest in the concentration, incarceration, or segregation of people of color in devitalized landscapes that are considered undesirable by normative members of the US population, suggesting that desertification and gentrification are entangled tools of racial control aimed at securing wealth in predominantly white communities. These repositories for the discarded members of society are not natural by any means, but rather purposefully made through infrastructural (dis)investment to deny equal opportunities to people of color.

Building Futures: Remapping the Terrain of Multiculturalism in Hawai'i
Chapter Two

Kahauiki Village has been touted as an innovative partnership between public and private interests united by their desire to address Hawai'i's growing homelessness crisis. Named for the ahupua'a, or self-sustaining land division, in which it is located, the plantation-style community provides affordable housing options to homeless families seeking opportunities for economic advancement and financial security. In a 2018 interview with PBS Hawai'i, Duane Kurisu, the Japanese American businessman who spearheaded the project, identifies the plantation as an inspiration for his vision for a sustainable and thriving Hawai'i: "for us guys who grew up in the plantation town, I think we got a whole lot more [out of life]" (3:44-3:49). He characterizes the plantation as a "special place" from a "special time where things like value and responsibility and character [were] more important than how much money you made" (3:52-4:04). As the website for Kahauiki Village suggests, this nostalgic return to the plantation is responsible for "building futures"—not only for the homeless families who reside there but also for the State of Hawai'i and its response to economic inequality ("Kahauiki - Building"). Yet, this plantation nostalgia locates the solution to racial and socioeconomic inequality in the same system responsible for its creation: homelessness, one of capitalism's byproducts, can seemingly be addressed by a return to the values emblematized by a plantation community, a sociotechnical assemblage of capitalist practices of accumulation and extraction that imported Asian contract laborers en masse and displaced Indigenous populations. Defining the plantation as "radical simplification, substitution of peoples, crops, microbes, and life forms; forced labor; and, crucially, the disordering of times of generation across species, including human beings," Donna Haraway suggests that the plantation is radically incompatible with "the capacity to love and care for place" (Haraway and Tsing). Kahauiki Village

thus highlights the interpretive challenge of translating Hawai'i's plantation history into an anti-racist and anti-capitalist project.

Figure 1: A screenshot of the homepage for Kahauiki Village, an affordable housing community modeled after plantation villages ("Kahauiki - Building").

Although sugar has ceased to be a major economic force in Hawai'i following the closure of the last large-scale sugar plantation in 2016, its influence remains undeniable. In addition to Kahauiki Village, a number of plantation-inspired projects have emerged across the archipelago, peddling a romanticized vision of Hawai'i's plantation history for the consumption of tourists. For instance, upon deplaning at Kahului Airport, visitors board an electric tram modeled after plantation-era trains to reach a consolidated car rental facility. Though framed as a modernization project, the tram invites visitors to journey into Maui's storied past as a center of the Hawaiian sugar industry. Likewise, Haiku Sugar Mill, an important processing center for sugar cane from 1861 to 1879, has been reimagined as a European-inspired wedding venue where lovers can exchange vows in the overgrown ruins of the mill before retiring to the restored quarters of former plantation workers. And, those looking for adventure can take an interisland flight to the Big Island and seek out Flumin' Kohala, a company that guides eco-tourists through the history of Hawai'i while paddling down the decaying irrigation flumes of Hawi Plantation in kayaks and innertubes. From

sugar cane trains to pineapple mazes, nostalgia for the plantation transforms dehumanizing experiences of labor into sites for recreation and leisure. While this transformation might be linked to the state's dependence on tourism—the economic successor of the sugar industry—it nevertheless highlights the paradox in which Hawai'i find itself: in order to secure its future, Hawai'i must look to its settler colonial past.

That nostalgic projects, like Kahauiki Village, are idealized by settlers of color, including the descendants of Asian contract laborers, suggests an ongoing investment in the colonization of Hawai'i, the disenfranchisement of its Indigenous communities. This investment is not only ideological but also infrastructural. The changing landscape of Hawai'i—its transition from agricultural to touristic economy—is dependent on the maintenance of plantation infrastructure, including ditches and tunnels, that sustain ongoing urban development by channeling water from windward to leeward shores.[25] Because these projects were primarily constructed by settlers of color during the late nineteenth and early twentieth centuries, a nostalgic return to the plantation by settlers of color must be understood as an attempt to recover the fruits of their labor in the face of economic, political, and social upheaval. As Ronald Takaki notes, the aging plantation workforce has witnessed "[t]he expansion of resort hotels and new subdivisions with all 'da same kine' houses into the cane fields they once plowed and harvested, the conversion of the Kahuku sugar mill into a museum for tourists, and the construction of luxurious condominiums, which block the old paths to beaches" (*Pau Hana* 1-2). This romanticization of the plantation, however, perpetuates the racial differences by which the plantation profited, exploiting Indigenous and immigrant communities in service of white entrepreneurs.

[25] The archipelago experiences the effects of the northeast trade winds. As a result, the windward side, the northern and eastern coasts that face the wind, tend to be wetter than the leeward side, the southern and western coasts that are sheltered from the wind by mountains.

In this chapter, I interrogate "building" as the privileged site for reasserting claims to national subjectivity and political agency in Asian American literary and historical accounts of Hawai'i. In this context, "building" refers not only to the symbolic practices of claiming land and national identity, but also to the embodied act of terraforming linked to the sugar industry in Hawai'i. Because these narratives rely on what Candace Fujikane calls "a *terra nullius* argument of land in Hawai'i being 'empty' or 'belonging to no one'" (2), they are always already entangled with practices of unbuilding, even as they have come to be framed in egalitarian or liberal multicultural terms. Yet, as Indigenous scholars have shown, Hawai'i was already "built" prior to the proliferation of plantations in the 19th century. I situate efforts to employ narratives of building in Asian American pursuits of social equality as the byproduct of the sugar industry's conception of the environment as a resource for industrial, military, and urban development that can be harnessed through the development of plantation infrastructure.

In Asian American studies, the primary way of understanding the sugar industry in Hawai'i has been through the lens of labor. Emphasizing labor has served as a way of legitimizing the role of Asian laborers in building Hawai'i and strengthening a foundation for more recent claims to citizenship and social justice (Fujikane 2-3). As the argument goes, those responsible for "building" Hawai'i merit recognition by the US government for transforming a peripheral territory into an economy predicated on the democratization of luxury products (e.g. sugar and pineapple) as well as tourism and leisure. However, Haunani-Kay Trask, a Native Hawaiian activist and scholar, has argued that settlers of color, including the descendants of Hawai'i's multiethnic plantation workforce, "claim Hawai'i as their own, denying Indigenous history, their long collaboration in our continued dispossession, and the benefits therefrom" ("Settlers of Color" 21).[26] Responding to

[26] Trask defines Hawaiians as "the indigenous people of Hawai'i" who are not descended from "the Americas or from Asia but from the great Pacific Ocean" ("Settlers" 1). Thus, it is incorrect to refer to the residents of Hawai'i as "Hawaiians."

Trask's critique, Fujikane, Jonathan Okamura, and others have sought to reframe the role of Asian settlers in perpetuating the ongoing colonization of Hawai'i. In *Asian Settler Colonialism* (2008), Fujikane and Okamura advance a settler of color critique of US empire, which does not necessarily advocate for the expulsion of Asian settlers from Hawai'i but instead asks Asian Americanists to rethink the ways in which their scholarship is complicit in marginalizing Kanaka 'Ōiwi histories and practices both within and outside of the academy.[27] While scholars in the field of Asian American studies have increasingly adopted a settler of color critique of the US occupation of Hawai'i, the dominant narrative proffered by the government remains one of urban development and liberal multicultural progress made possible by Asian American organizing following the US annexation of Hawai'i in 1898.

This chapter seeks to articulate an alternative way of mapping the Asian American experience in Hawai'i by attending to the material and metaphoric implications of water infrastructure instead of retreading the narratives of labor that have gained traction in Asian American studies. In shifting attention from plantation labor to water infrastructure, this chapter revisits the history of sugar cane in Hawai'i to understand how Asian laborers and their descendants have participated in the project of US settler colonialism by constructing and maintaining the irrigation ditches, flumes, and tunnels necessary to cultivate sugar. Although sugar might be the most widely known commodity circulating between Hawai'i and California during the nineteenth and twentieth centuries, an attention to water resource development also brings into focus the circuit of American engineers and Asian laborers whose skills and knowledge were necessary for restoring productivity to regions deemed nonproductive due to their specific environments. This

[27] I use the terms "Native Hawaiian," "Kānaka 'Ōiwi," and "Kānaka Maoli" interchangeably. I use the kahakō when referring to the plural Kānaka 'Ōiwi (people) but not when using "Kanaka 'Ōiwi" as an adjective. Elsewhere, I have done my best to follow the Native Hawaiian spelling of places but continue to use Anglicized versions of plantation companies (i.e. Olaa Sugar Plantation instead of Ola'a).

development of infrastructure can be understood in settler colonial terms as the imposition of an alternative relationship to land and water. It is not my aim to dismiss the labor studies that have illuminated the conditions of the plantation system, but rather to think about labor in a different register, particularly through records documenting not only the production of sugar but also the production of injury and death. In exploring these archival records alongside literary accounts, I want to suggest that Asian labor's contributions serve as one of many layers of the built environment—one that is central but not the sole story emerging in the islands around the sugar plantations and their legacy.

Literary accounts of the islands in the late nineteenth and early twentieth centuries are largely confined to travel narratives and biographical accounts of notable missionaries and plantation owners. Works written about and by the people coerced into labor or displaced from their ancestral homelands are not readily accessible to mainstream audiences aside from folkloric songs sung by plantation workers and poems penned by members of the Hawaiian monarchy, including Queen Liliʻuokalani. Asian American or local literature that reflects on the inheritance of the plantation system has primarily been produced in the latter half of the twentieth century by the American-born descendants of contract laborers. These writers may not have grown up in plantation villages, but have experienced Hawaiʻi before and after statehood, before and after the demise of Hawaiʻi's sugar industry. Blurring the boundary between autobiography, history, and fiction in narrating the shifting social relations of communities dictated by the changing landscapes of Hawaiʻi, such imaginative works offer additional points of reference for this extended reflection on the intimacies of US empire in Hawaiʻi. Taken together, archival records and literary accounts showcase the varied ways in which the plantation shaped the characteristics of the archipelago's population through the development of infrastructure.

Archival Notes

Although this chapter engages with Asian American literary production, it relies heavily on archival records from the Hawaiian Sugar Planters' Association (HSPA) Plantation Archives contained at the University of Hawai'i at Manoa and smaller repositories, including museums and historical societies, across the four major Hawaiian islands.[28] The HSPA Plantation Archives are organized according to plantation but also include documents from corporate subsidiaries, including mill, irrigation, and railway companies. Within each plantation archive, the individual files are subdivided into corporate records, correspondence, cultivation contracts, financial records, personnel and payroll records, production records, miscellaneous records, and other company records. The inclusion of documents from parent and subsidiary companies in the archive highlights the rigid control the plantations exerted over their operations and, by extension, the social, economic, and cultural life of the laboring and Indigenous communities in Hawai'i. Moreover, the finding aids provide an abbreviated history of each plantation—its origins and expansions. In perusing these descriptions, we can begin to see how specific plantations dominated smaller endeavors before being subsumed by one of the Big Five sugar companies (Castle & Cooke, Alexander & Baldwin, C. Brewer & Co., American Factors, and Theo H. Davies & Co.). For instance, the Lihue Plantation Company (LPC) originated from a partnership between Charles Bishop, William Lee, and Henry Pierce in 1849 (Saito and Campbell). In 1910, the LPC expanded by purchasing the Makee Sugar Company in 1910 and the Princeville Plantation in 1916. By 1922, American Factors, Ltd., the successor to H. Hackfeld & Co., purchased enough shares in the LPC to gain control over the company, which had interests across the entire island of Kaua'i. What this abbreviated history overlooks, however, is the way in which such purchases were motivated as much

[28] During my archival trips, I visited the archives at Maui Historical Society, the Kaua'i Historical Society, the University of Hawai'i at Manoa, the Hawai'i State Archives, and the Bishop Museum.

by profit as by water rights (e.g. the LPC later purchased the Princeville Plantation to gain access to the upper source of the Hanalei River).

The creation of the Plantation Archives was itself indebted to the HSPA, which hired a historian to visit each of the plantations in an effort to locate and preserve records after the Hawaiian Historical Society received a grant from the National Endowment for the Humanities in 1979. These records were stored in attics, closets, spare rooms, vaults, and bunkers belonging to companies and individuals, explaining the variable quality of the documents as well as the organization of the materials in individual files. There are, however, some important caveats about Plantation Archives: not all plantations chose to participate in the archival process; records were not organized in a unified way across plantations; and some records, including those derived from the same plantation, are contained at local historical societies on the four major islands. The documents were initially processed in 1984 by an archivist, but were not donated to the University of Hawai‘i at Manoa until 1995 with the full permission of the HSPA Board of Directors. The complete archive provides a firsthand glimpse of the business operations of the sugar companies and everyday plantation life on the islands.

While the documents span from 1850 to 1991, I elected to review documents from the late nineteenth century through WWII—a timeframe punctuated by the Chinese Exclusion Act of 1882, the annexation of Hawai‘i in 1898, the Philippine-American War from 1899 to 1902, and the Gentlemen's Agreement of 1907. This period not only reflects the changing needs of the plantation workforce thanks to shifting immigration laws, but also corresponds to the historical moment that has been memorialized in seminal works of Asian American literature, including Maxine Hong Kingston's *China Men* (1980) and Milton Murayama's *All I Asking For is My Body* (1975) and *Five Years on a Rock* (1994), that I explore at the end of this chapter. More importantly, it coincides with

the rise of the irrigation work that would allow sugar companies to transform and control the Hawaiian environment.

Overlapping Imperialisms

Although plantations were viewed as the entities responsible for developing Hawai'i into a thriving economy through the transformation of nonproductive lands, commercial and religious interests laid the foundation for the archipelago's development by introducing Kānaka 'Ōiwi to the excesses of Western civilization. Neil Levy has infamously described how "Western imperialism had been accomplished without the usual bothersome wars and costly colonial administration" in Hawai'i in less than a century (857). Yet, that characterization of colonization overlooks the ongoing violence enacted against Hawaiian bodies and environments by dismissing the effects of economic and religious forms of imperialism that transformed Hawai'i from independent kingdom to fiftieth US state. Indeed, following the arrival of Captain James Cook in 1778, the islands underwent rapid change due to the influx of foreign interests, which radically transformed human and nonhuman life in the Hawaiian islands. While merchants and traders sought to protect their global trade networks by developing refueling stations, missionaries aimed to civilize heathen people through religious conversion. Even as these two overlapping forms of imperialism viewed the ends of private property ownership in different terms, they both arguably advanced their claims through notions of indebtedness, financial or spiritual. The convergence of these two forces would ultimately allow for the rise of the sugar industry and the overthrow of the Hawaiian monarchy.

In this section, I extend Asian American histories of Hawai'i beyond the plantation era by linking the emergence of Asian contract labor to the economic and religious ideologies circulating in Hawai'i in the early nineteenth century. These ideologies might be summed up by Lilikāla Kame'eleihiwa's characterization of Euro-American settler colonialism as foreign desires for

Indigenous land (16). Rehearsing the history of land tenure in Hawai‘i with an attention to Indigenous perspectives accomplishes several important things. First, it provides background for the dominance of Hawai‘i's sugarcane plantation economy in the latter half of the nineteenth century by showing how cultural, economic, and military imperialisms reshaped the island's politics. Without changes to the land tenure system that allowed for private property ownership, the plantations would not have needed a multiethnic plantation workforce. Second, it shows how Kānaka ʻŌiwi were dispossessed from their land and dismembered from their nation by ideologies of control that informed the treatment of Asian contract laborers, albeit under the guise of economic and social mobility. Even as Christian missionaries focused their civilizing efforts on Kānaka ʻŌiwi, their valorization of industrious labor as a form of self-improvement resonates with the privileging of labor in Asian American narratives of building. And, third, it allows us to understand how urban development and land improvement in the twentieth and twenty-first centuries perpetuate unsustainable practices, including resource extraction and financial speculation, amidst global climate change and the rising of the seas.

Contact with the Western world precipitated a series of catastrophic events that would radically reshape the economic and ecological health of the archipelago. Mirroring the experience of other island ecologies, Hawai‘i faced disturbance, extinction, and replacement as Europeans expanded their imperial reach across the Pacific. With the introduction of foreign diseases (smallpox, leprosy, cholera, measles, gonorrhea) and ungulates (livestock) hitherto unknown in the islands, Indigenous communities—both human and nonhuman—faced precipitous declines in population. Although population estimates remain disputed, Kame‘eleihiwa suggests that there were at least one million Kānaka ʻŌiwi in 1778 with approximately 80 percent succumbing to disease, starvation, or violence over the next forty-five years (81). That decline would continue until the end of the nineteenth century: according to the US census, there were no more than 37,656 residents of

full or partial Hawaiian ancestry in 1900 (Schmitt 120). Additionally, because Kamehameha I had prohibited the killing of animals brought by Europeans, feral cattle and goats roamed free throughout the island's dry forests until the repeal of that prohibition in 1830, disturbing ecologies that had remained largely unchanged for centuries without the threat of grazing animals. The proliferation of these invasive species contributed to deforestation, soil erosion, and water loss as herds of feral livestock spread across remote regions of the islands.

Given its strategic positioning between Asia, North America, and the South Pacific, Hawai'i proved an ideal waypoint for the imperial powers of the late eighteenth and early nineteenth centuries. Yet, as Mark Rifkin notes, the traders who moored their vessels in Hawai'i's harbors did not necessarily view Native Hawaiians as consumers but as potential labor for the harvesting of more valuable commodities, including sandalwood, that was highly prized in China. But traders did not have direct access to the maka'āinana, whose activities were directed by the ali'i—Hawaiian nobility. The introduction of Western goods (alcohol, firearms, and tobacco) to the ali'i, which traders viewed as a transaction rather than a form of tribute, allowed foreigners to leverage debt repayment against the Hawaiian ruling class. To satisfy the demand for western goods, ali'i commanded the maka'āinana to harvest sandalwood across the islands until the forests were largely depleted by the 1830s. Shifting from the ahupua'a system, which valued shared responsibility for sustaining bodies and environments, to a mercantile system of exchange exacerbated famine and starvation; with laborers redirected to the mountainsides, staple crops were left untended. Those who continued the cultivation of traditional crops found their access to water limited by deforestation, which allowed water to bypass streams and underground aquifers en route to the sea.

As the Industrial Revolution increased global demand for whale oil, Native Hawaiians ventured from their ancestral communities to the burgeoning towns of Honolulu and Lahaina, which served as ports of call for European and American whaling ships seeking sailors and supplies.

Sailors not only brought diseases and invasive species to the islands but also bad habits, including drinking, gambling, and prostitution, that the missionaries would find anathema to their religious teachings. Moreover, whalers enacted changes to both ocean *and* island ecologies in hunting the marine mammals to the brink of extinction across the Pacific. Because the whalers did not need Hawaiian products, such as fish and poi, Hawaiian agriculture shifted from a focus on Hawaiian staples to Western products, including meat, potatoes, and sugar. As with the sandalwood trade, supply followed demand, and Hawaiian society reorganized itself to accommodate the needs and desires of foreigners. According to Linda Parker, the simultaneous rise of the sandalwood trade and whaling industry heralded a shift from a "subsistence economy with land valued for its use and resources to a commercial economy with the land and its products assuming commercial value in which the commodities could be exchanged for foreign goods" (92).

As Hawai'i's economy increasingly relied on foreign trade, outsiders increased their influence over the future of the islands. The incursion of the *Peacock*, a US warship, into Hawaiian waters in 1826 formalized the practice of gunboat diplomacy in advocating for foreign interests under threat of violence. Rifkin situates the *Peacock's* arrival in terms of debt sovereignty, the means by which American interests asserted control over Hawai'i's politics through finance: "debt operates as a mode of imperial interpellation while simultaneously functioning as a means of legitimizing a wrenching open of the debtor nations to restructuring to suit the economic interests of lender nations—a process validated as 'free trade'" (44). In this context, the debtor country's domestic policies are dictated by the lending country's interests, with the exploited nation's people having "no political appeal in a process narrated as the free choice to participate in the capitalist world market" (44). Despite the inherent imbalances of this relationship, the lending country frames participation in international capitalism as the precursor to sovereignty, forcing the debtor nation to assume

additional debt or be denied standing in the global order as a civilized nation worthy of independence.

Although Indigenous scholars have repeatedly questioned whether Kānaka ʻŌiwi understood the transactional nature of European and American commercial trade, it is clear that demanding repayment for debts with threats of violence forcefully imposed a capitalist system on the people of Hawaiʻi. As Rifkin notes, "[a]fter just under a decade of operation in Hawaiʻi, the American trading houses claimed in 1826 that they were owed approximately $150,000 by Hawaiian chiefs, a sum that was roughly equivalent to 15,000 piculs of sandalwood" (48). Despite the high value of this purported debt, American trading houses were making at least $100,000 in profit each year that they operated in the islands, owing to the low cost of maintaining operations and inflated prices of goods sold to Native Hawaiians. That same year, the *Peacock* sailed to Hawaiʻi with the aim of negotiating "Americans' right to trade in Hawaiʻi and securing 'most favored nation' status for the United States" and requiring "Hawaiians to gather sandalwood and assorted other items as part of 'taxes' for the purpose of raising revenue to discharge their debts due to citizens of the United States" (43). American trading houses were not responsible for the call for US military intervention, even as they benefited from the incursion of naval vessels in Hawaiʻi's waters. Rather, American whalers sought to curtail perceived threats to their industry by Indigenous communities who refused to work. This would not be the only time that foreign military forces entered Hawaiian waters to bolster foreign interests, as American, British, and French warships frequented the Hawaiian Islands in the 1830s in an effort to secure property rights for foreign residents.

In narrating the history of Hawaiian debt, numerous scholars point to the pitfalls of the land tenure system, which required makaʻāinana to fulfill the directives of aliʻi. Western historians have frequently framed this relationship in feudal terms, casting the aliʻi as greedy and power-hungry. Yet, the land tenure system was not, as Noenoe Silva notes, a system of feudal landlords and serfs

but rather an affectionate and close relationship between makaʻāinana, kahuna, and aliʻi (39). The governance of moku by aliʻi was informed by the "kuleana 'authority' that allowed certain aliʻi to 'kū i ka moku,' or rule a district or island and receive 'auhau, included the obligation to manage the land and ocean resources wisely—to set kapu (roughly, here, meaning temporary restrictions) and kānāwai (rules) in consultation with other aliʻi and kahuna" (40). Regardless of class, everyone—from makaʻāinana to moʻi "had specific kuleana to mālama 'āina, or care for the land" (40). Silva's emphasis on shared responsibility and care contrasts many of the existing Euro-American histories that recount the exploitation of makaʻāinana at the hands of debt-ridden aliʻi. Significantly, in dissociating the land tenure system from feudalism, she disentangles the history of Hawaiian conversion from an economic narrative of progress that links Hawaiian culture and history to European standards. For Silva, the transition from feudal to allodial (freehold) systems of land tenure cannot be understood as a form of progress and enlightenment.

Merchants were not the only group to visit Hawaiʻi following its so-called discovery. In the wake of the Second Great Awakening, Protestant evangelists sought to extend the reach of Christianity through foreign missions where young members of the church could demonstrate allegiance to their religion. The first missionaries sent by the American Board of Commissioners for Foreign Missions (ABCFM) departed Boston in 1819 aboard the *Thaddeus* and arrived in Hawaiʻi in 1820. The ABCFM tasked these initial missionaries with the following goal: "aim at nothing short of covering these islands with fruitful fields and pleasant dwellings, and schools and churches; of raising up the whole people to an elevated state of Christian civilization…to turn them from their barbarous courses and habit." When they arrived in Hawaiʻi, they found a community in disarray.

Changes to the Hawaiian social and political structure were engendered by the loss of Indigenous life following the arrival of Captain Cook. Jonathan Kay Kamakawiwoʻole Osorio suggests that the "great dying disrupted the faith that had held Hawaiian society together for

centuries" (10). In the wake of Kamehameha I's death in 1819, Keōpuolani and Kaʻahumanu, the highest ranking wives of Kamehameha I, broke the sacred kapu—rules meant to demarcate chiefs from commoners as well as men from women—by joining Kamehameha's heirs in dining together. The implications of these actions reverberated throughout Hawaiian society, as it proved that chiefs were no more divine than the commoners themselves. While scholars remain undecided whether Kamehameha's wives were influenced by their close affiliation with Christian missionaries in fostering the ʻainoa (free or profane eating), it is clear that Christianity promised "to rescue the people and their chiefs from the social breakdown that accompanied the ʻainoa by introducing commitment and discipline—namely Christian prohibition, which were understood to replace the old kapu" (Osorio 11). In the following decade, Kaʻahumanu managed relations with the ABCFM, initiating a system of laws modeled on Christian values that furthered the alienation of the Indigenous peoples from their culture (Osorio 11). At the same time, Keōpuolani sought refuge in the church, helping missionaries establish a church in Lahaina while seeking to be baptized by ABCFM missionaries. Even as Kānaka ʻŌiwi turned to Christianity in search of life in the wake of widespread death, it could not, as Kameʻeleihiwa notes, prevent depopulation. Instead, the incorporation of Christian morality and behavior allowed for the institution of an alternative set of laws that transformed Indigenous relationships to community, self-identity, and the environment.

The arrival of the missionaries was met with hostility by foreign merchants and traders, who viewed the missionaries' attempts to convert the natives as incompatible with their capitalist endeavors. Early accounts of evangelism in Hawaiʻi situate the missionaries as anathema to foreign traders because they instilled Hawaiians with moral values that did not conform to their vision of commerce: religious activity detracted from time devoted to labor. As Jennifer Fish Kashay notes, early missionaries viewed themselves in opposition to the businessmen who had taken up residence in the islands. Their "enemy" was not the Indigenous people, the subject of their proselytizing, but

rather the businessmen who sought to swindle Indigenous communities from their livelihoods and undo the work of missionaries in instilling proto-capitalist values in their devotees (284). Moreover, "members of the mission employed Hawaiians as domestics, field laborers, and house laborers," diverting labor from the "island's foreign businessmen" (287). Because missionaries received supplies shipped from ABCFM and supplementary gifts from Indigenous chiefs, the missionaries did not provide increased business opportunities for the foreign merchants and traders.

Justification for the conversion of Native Hawaiians stemmed from beliefs about their perceived inferiority. Although Rufus Anderson, an American minister who visited the islands in the 1860s, highlights the positive effects of civilization in improving the desires of Native Hawaiians, he nevertheless casts them as helpless to satisfy those newfound wants without outside intervention: "it is not always easy for them to make their labors productive. Were every valley and hill-side adapted to some particular culture, the masses of the native land-holding population want either the knowledge or the means for availing themselves of the advantages" (250). Controlling Indigenous bodies through the reformation of marriage and sexuality was initially the primary means of civilizing natives. According to J. Kēhaulani Kauanui, missionary efforts at conversion relied on the institution of heteropatriarchal norms: "one of [the missionaries'] immediate undertakings was fundamentally to transform Indigenous kinship practices in a way that imposed patriarchal norms. This process included the ascendancy of patrilineal naming, patriarchal citizenship, and patriarchal marriage" (*Paradoxes* 13). Doing so would have far-reaching consequences, enabling missionary-descended planters and businessmen to marry into Native Hawaiian families and gain access to land to which they had otherwise been denied access. Moreover, as Lawrence Fuchs notes, "[t]he new religion of Hawaii was suitable for the new economics of the Islands. The smaller, ostensibly monogamous family relationship, eliminating the confusion of progeny, facilitated the accumulation of property" (10). As part of this religious conversion, missionaries used their privileged positions

to institute Christian-inspired laws, substituting Christian teachings for kapu. And one of the primary ways in which missionaries exerted influence on the Indigenous population was through the establishment of seminaries and schools. Lahainaluna, for instance, was established in 1831 to educate Native Hawaiians in an American style, preparing a future generation of Indigenous leaders who could participate in the reformed government. And Punahou School and ʻIolani School, the premier private schools on Oʻahu, were founded in 1841 and 1863, respectively, to educate the children of Protestant and Anglican missionaries as well as their Indigenous disciples.

Even as the intimacies between church and state highlight the growing influence of the Christian missionaries, the missionaries themselves did not necessarily view their position as exploitative. According to Anderson, the conversion of Kānaka ʻŌiwi did not alter the government in any significant way:

> The government of the Islands was in a measure Christianized at that early period, and in advance of the people. But though so many of the chief rulers were brought into the church, and though for a time there may have been a virtual union of church and state, there was never any such formal and acknowledged union. The Hawaiian government never claimed the right to make laws for the church, nor to appoint its officers, nor to control its discipline; nor did the church ever claim the right to control the action of the state. (65)

Nevertheless, the substitution of Christian teachings for Indigenous spiritual practices allowed for white missionaries and businessmen to insert themselves into the kingdom's government. Beginning in 1840, Kauikeaouli, otherwise known as Kamehameha III, was responsible for introducing a series of constitutions that formalized a legislative body consisting of a House of Representatives and a House of Nobles. While previous monarchs had maintained a council of chiefs for advice, Kamehameha III's Privy Council consisted of both high-ranking chiefs and powerful qua wealthy

foreigners. White men gained access to the House of Nobles either through perceived power (i.e. wealth equivalent to that of the aliʻi) or through intermarriage with Indigenous women from families with noble heritage.

Although capitalism was at odds with the mission's role in Hawaiʻi in the early nineteenth century, by the late 1830s, missionaries and their descendants were able to resign their posts within the Christian mission in favor of more lucrative positions serving the government. As Osorio notes, "[b]y the 1840s, resignation from the mission to engage in business and politics was a fairly standard practice" (19). The favorable position of the missionaries in social and political life meant that economic changes were now permissible so long as entrepreneurial members did not rely on the church for donations meant to sustain their livelihood. As missionaries and their descendants strayed from their initial calling, allodial land tenure was viewed as the primary means of civilizing Hawaiians, using the industrious cultivation of soil to advance Christian principles of morality. This turn to property should, I think, be viewed in terms of Christian debt, of making Indigenous people feel indebted to missionaries for their help in saving their souls. And, according to Maurizio Lazzarato, "[t]he particularity of Christianity lies in the fact that it places us not only within a system of debt, but also within a system of 'interiorized debt'" (78). In other words, "Christianity 'stuck us with the infinite,' which comes down to saying that we are in a social system in which there is no end to anything, in which indebtedness is for life" (77). Thus, if merchants sought to enact policy changes through the imposition of debt on Hawaiian nobility, then missionaries also sought to satisfy another form of debt—Christ's sacrifice for the sins of mankind-through labor and hard work. Spiritual debts caused by licentiousness and idleness could be undone by industrious labor, but accomplishing that transformation required land ownership, the ability to cultivate one's personal wellbeing. Events leading up to the Great Māhele—the division of land amongst the crown, the government, and the aliʻi—rearticulated Hawaiian cultural, political, and social structure

in drastic ways. Christian missionaries viewed ownership of land as the primary means of gaining power while Native Hawaiians only lost power in acquiescing to foreign demands to maintain whatever shreds of sovereignty remained.

The Great Māhele of 1848 and the Kuleana Act of 1850 introduced Western notions of property ownership into the islands, what Osorio describes as "a foreign solution to the problem of managing lands increasingly emptied of people" (49). If the feudal system of land tenure ensured that communities had access to land and water for coordinated cultivation, then the allodial system of land ownership denied communal access to resources in favor of individual or private interests. The Māhele not only severed traditional relationships to ʻāina but also disrupted relationships between aliʻi and makaʻāinana by splitting land between the king, the high chiefs, and the tenants. Prior to this, the Declaration of Rights of 1839 recognized the inherent rights of all people in Christian terms, providing a groundwork for a free enterprise system. A year later, the enactment of Hawaiʻi's first constitution established a constitutional monarchy, formalizing executive, legislative, and judicial branches. Under continued pressure from merchants and missionaries, Kamehameha III formed the Land Commission in 1845, which was responsible for investigating prior claims to land. This commission would be responsible for processing claims under the Kuleana Act of 1850. Under this law, commoners could petition for titles to the land they cultivated or lived on. Because many commoners did not understand the concept of property ownership, many forfeited the opportunity to claim lands that their ancestors had worked for generations. Moreover, making claims was not simple: they required advance money to pay for land surveys and secure witnesses to verify land tenure. All of this needed to be completed within a few years of the law's passage. As a result, less than 1 percent of lands in Hawaiʻi were claimed by commoners, with the rest being claimed by aliʻi or foreigners (Levy 856).

While some scholars have viewed transformations to Hawaiian law and governance in the 1840s as the imposition of Western ideals on Hawai‘i, such notions overlook Kamehameha III”s attempts to maintain sovereignty. According to Silva, the adoption of the constitution does not necessarily signify the king’s acquiescence to foreign demands but rather represents an attempt to preserve Hawaiian sovereignty by protecting his subjects’ rights to land: “the mo‘i and the ali‘i nui changed their ways of government by adopting a constitution on which European and American types of laws could be based and by adhering to international norms of nation-statehood. These moves were made with the goal of preserving sovereignty—that is, to avoid being taken over by one imperial power or another” (37). Sally Merry puts this another way: “Kamehameha III and the high-ranking chiefs were engaged in transforming the Hawaiian system of law and governance into an Anglo-American political system under the rule of law. Their strategy was to create a ‘civilized’ nation, in European terms to induce those European and American powers whose recognition defined sovereign status to acknowledge the kingdom’s independence” (5). This, however, did not prevent the outlawing of former customs, including hula, in accordance with Christian teachings. Additionally, many scholars have translated Māhele as “divide,” using the term’s literal meaning as a way of understanding the rupture that occurred as a result of land division amongst the crown, the chiefs, and the commoners. Yet, as Kame‘eleihiwa suggests, Māhele might also be translated as “to share,” reflecting the government’s hope of returning land to the people who lived on and cultivated it (9).

Though sugar had been cultivated alongside coffee, pineapple, and rice in the Hawaiian islands in the mid-nineteenth century, it did not become the subject of intense investment until the onset of the American Civil War, which rendered Louisiana’s sugar plantations inaccessible to Union markets. As sugar’s influence increased in Hawai‘i, planters repeatedly pressed the Hawaiian government to negotiate a free trade agreement with the US, which would increase the profitability

of sugar and spur further investment in plantation infrastructure. The establishment of the Reciprocity Treaty of 1875 allowed the duty-free export of sugar from Hawai'i to the US for seven years. Despite objections from lawmakers from Southern states, the treaty would be extended on a one-year basis until 1886, when the US renegotiated the terms of the treaty. Having grown reliant on the sugar industry, the Hawaiian government could not refuse the terms of the revised treaty—including the cession of Pearl Harbor for the development of a US naval base. While naval vessels had periodically ventured into Hawaiian waters to advocate for foreign interests, the construction of a naval base cemented the threat of violence against the waning monarchy.

The overthrow of Queen Lili'uokalani in 1893 initiated a series of events that ultimately led to the annexation of Hawai'i as a US territory in 1898 and its eventual incorporation as the nation's fiftieth state in 1959. Although some scholars point to the forceful imposition of the Bayonet Constitution—so named because King Kalakaua was forced to sign at gunpoint by a militia comprised of white settlers—the overthrow of Lili'uokalani signaled the termination of the Hawaiian monarchy. This illegal overthrow, led by American sugar planters and businessmen descended from missionaries, would not have been possible without two overlapping forms of imperialism that laid the groundwork for the denial of Hawaiian sovereignty. These imperialisms—operating under the banners of religion and commerce—were not always aligned in their goals, but the shifting global economy and the changing demand for Hawai'i's products created the conditions necessary for US military and financial intervention.

In considering the history of Hawai'i, the legacy of US imperialism is laid bare. Native Hawaiian scholars note how Hawai'i is the only state that was previously an independent kingdom prior to its annexation as a territory and incorporation as the fiftieth US state. As with its continental territories, the US claims and maintains control over Hawai'i at the intersection of war and finance (Karuka xii). Even as trans-Pacific relations have warmed since the conclusion of the

Cold War, Hawai‘i remains an important site for naval and military forces. And, its suturing to the continent through annexation and incorporation has made it reliant on US tourists seeking paradise on the edges of empire. The decimation of the island's economy following the state government's stay-at-home orders amidst the COVID-19 pandemic have made its subordination to the US readily apparent. That the island cannot sustain itself without its attachment to the military and tourist industries reflects its dependence on the US. Yet, such thinking is, as I argue, constrained by its indebtedness to the plantation, to the archipelago's marketing as a "South Sea paradise" that exploits "its lands and oceans, labor, women" (Trask, *From* 42).

Indigenous Perspectives of Water

In the Hawaiian language, wai has multiple overlapping significations. While it is most commonly associated with water, it can be understood or used in conjunction with any fluid other than seawater that flows like liquid. Thus, for instance, wai figures into the usage for menstruation, semen, and other bodily fluids, highlighting its intimate connection to life-giving processes. Notably, it serves as the root for waiwai, or wealth, and kānāwai, or law (Wilcox 25).

Water was one of the necessary ingredients for the cultivation of kalo or taro, a plant that formed the basis of the Hawaiian diet and served as an integral aspect of Hawaiian cosmology (Kame‘eleihiwa 23-25). Although capable of being grown in various climates, kalo thrives when grown in shallow water as part of lo‘i or terraced fields. When harvested, the underground roots or corms are pounded into a paste known as poi, which continues to be a staple of traditional Hawaiian cuisine. In Hawaiian cosmology, Wākea, the sky father, commits incest with his daughter Ho‘ohokukalani, and the latter gives birth to a stillborn baby. After being buried in the ground, that child becomes the first kalo plant. Later, Ho‘ohokukalani gives birth to another child, who becomes the first Hawaiian. As members of the same family, the relationship between man and kalo is one of

mutual responsibility and care. This sentiment is reflected in the belief that mankind are the children of the land—keiki o ka ʻāina—and the characterization of the common people as people who tend the land—makaʻāinana (Wilcox 45).

The cultivation of kalo was a communal effort that required the shared mobilization of land and water resources. Kanaka ʻŌiwi water rights and practices reflected a form of shared responsibility to the land that ensured the equitable division of resources amongst the population. Even as Kanaka ʻŌiwi society was hierarchically organized, the division of land and water rights ensured that each community could be largely self-sustaining given their unimpeded access to a range of natural resources. Each mokupuni (island) was divided into moku (districts), which in turn were divided into ahupuaʻa. These ahupuaʻa were wedge-shaped sections of land running from the mountains to the sea.[29] Kānaka ʻŌiwi could gather wood, ferns, and birds in the upper wetland forests, cultivate sweet potato in drylands, grow taro in irrigated valleys, and harvest fish from coastal waters (MacLennan 47). Despite the tendency to think of ahupuaʻa as synonymous with watersheds, Lorenz Gonschor and Kamanamaikalani Beamer suggest that it is inappropriate to view ahupuaʻa in that light, as that equation "empties the ahupuaʻa of its cultural context" (70) and overlooks the numerous ahupuaʻa whose boundaries "follow ridgelines that are not main watersheds" (71). They instead define ahupuaʻa as a "culturally appropriate, ecologically aligned, and place specific unit with access to diverse resources" (71). In describing the lack of "ownership" of water in Hawaiʻi, Carol Wilcox notes how "[t]he king's rights to water allocation were absolute. When he conveyed portions of the ahupuaʻa, he also distributed the right to use water" (26).

[29] While the majority of ahupuaʻa resembled a wedge, there were several anomalies in which complex or landlocked shapes suggested alternative ways of living. Lorenz Gonschor and Kamanamaikalani Beamer offer descriptions of these alternative shapes in their essay "Toward an Inventory of Ahupuaʻa in the Hawaiian Kingdom" (2004)

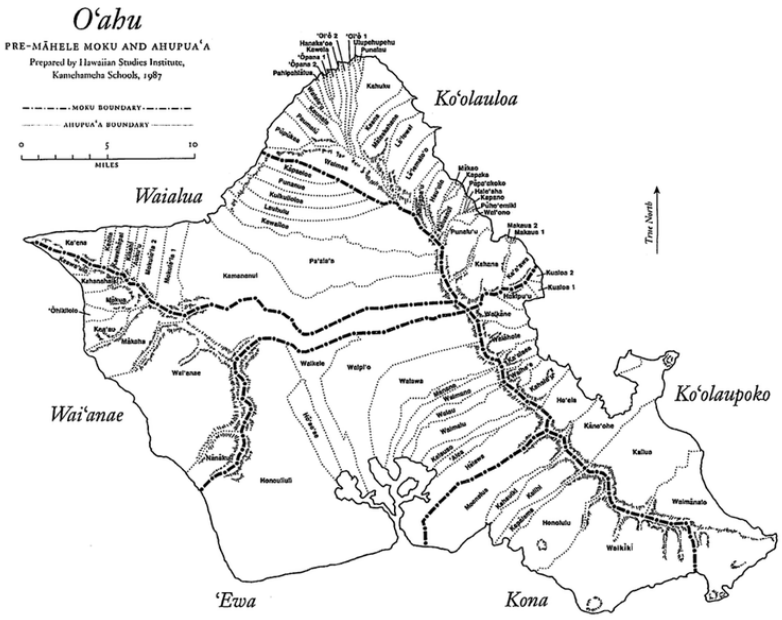

Figure 2: The division of O'ahu according to moku and ahupua'a (Hawaiian Studies Institute of Kamehameha Schools).

The diversion of water was as much an economic imperative as it was a social and cultural practice. Emma Metcalf Nakuina, the Commissioner of Private Ways and Water Rights for the District of Kona, O'ahu from 1892 to 1907, provides an overview of Kanaka 'Ōiwi agricultural practices in an essay originally published in *Thrum's Hawaiian Annual*, a compendium of Hawaiiana, in 1893. In "Ancient Hawaiian Water Rights," Nakuina lays out the role of water in shaping the cultural and social life of the Kānaka 'Ōiwi. She writes,

> All *auwais* [water courses] tapping the main stream were done under the authority of a *Konohiki* [landlord] of an *Ahupuaa*, *Ili* or *Ku* [further subdivisions of *ahupua'a*]. In some instances the *konohikis* of two or three independent lands—i.e. lands not paying tribute to each other—united the work of *auwai* making, in which case the *konohikis* controlling the most men was always recognized the head of the work. (506)

In this formulation, landlords or chiefs of neighboring lands came together to construct waterways that would be mutually beneficial. Notably, Nakuina's description of collaborative efforts to build

waterways highlights an equitable distribution of water according to the number of laborers mobilized to help construct the ditch:

> The konohiki who had the supervision of the work having previously marked out where it would probably enter the stream, the diggers worked up to that point. The different *ahupuaa's, ili's* or *ku's* taking part in the work, furnished men according to the number of cultivators on each land. There was no limit though to the number of laborers any land might furnish, and it often happened that a small *ku or ili* was sometimes represented in the *auwai* making by more men than a much larger land or *Ahupuaa*, and would thus become entitled to as much or more water, at the distribution of the water privileges, than were assigned larger tracts. (506)

To divide the water, stakeholders would be permitted a specific number of hours to withdraw water from the auwai. Any dams that were constructed as part of this project had to adhere to careful stipulations. Dams were to be constructed of loose stones with the height determined by how high the water level needed to rise to divert water into the auwai. Moreover, "[n]o auwai was permitted to take more water than continued to flow in the stream below the dam. It was generally less, for there were those living makai or below the same stream, and drawing water from it, whose rights had to be regarded" (506). Nakuina notes how any deviation from these rules would result in the destruction of the dam by water right holders living downstream. The division of water according to labor benefitted families with more able-bodied sons, but those who did not use the entirety of the water to which they were entitled relinquished their claims to the community. As part of the collaborative nature of the endeavor, stakeholders would visit the dam and auwai with the luna wai [water supervisor] to clear branches and make any necessary repairs. These projects were mobilized to cultivate staple crops:

> Water rights were primarily for *lois*, that is, for kalo culture, potato patches, bananas or sugar cane had not recognized claim on a water right in the rotation. The cultivation of these, regarded as dryland crops, were invariably during the rainy season except in the *Koolau* or wet districts. Sugar cane and bananas were almost always planted on *loi* banks (*kuauna's*) so as to ensure a sufficiency of moisture from the seepage or ooze between them. (508)

Nakuina describes how the construction of the auwai warranted celebration amongst the stakeholders. Such celebrations culminated in the building of an imu (oven) in which a hog was cooked. While food was required to be eaten by both people and dogs, any waste would be buried in the imu, which would be submerged from water flowing through the newly constructed auwai. Water pooling below the dam served as a site of play for the celebrants.

Nakuina's account of Kanaka ʻŌiwi approaches to land and water reinforces the idea of infrastructure as a relational structure. The construction of the auwai was a social practice that brought into relation members of a community and fostered a relationship with the bounty of the land. The social importance of water in sustaining ʻāina and kalo also amplifies our understanding of infrastructure and its relationality—its connection to Hawaiian cultural worldviews and shared identity. Here, infrastructure is no longer defined simply by the movement of resources between people, but is instead imbued with cultural memory rooted in Indigenous belief systems. These systems are not rooted in blood quantum, but rather derive from relationships to time and place. As Osorio notes, the concepts of ka wa mamua (past) and ka wa mahope (future) indicate how Kānaka ʻŌiwi are oriented to time: "[they] face the past, confidently interpreting the present, cautiously backing into the future, guided by what [their] ancestors knew and did" (7). According to Kauanui, "place is a key force in the interplay of internal and external influences on contemporary Kanaka Maoli identity processes, where Native Hawaiians' genealogical connection to Hawaiʻi as the

ancestral homeland is one of unique characteristic to which no other group holds claim" (*Hawaiian* 51-2). Kauanui notes how genealogy is deployed as both lineage and kinship systems in Hawaiian social systems: "genealogy locates all Kanaka Maoli in relation to different collectivities and relationships and provides the grounds for indigeneity because it is the basis of the fundamental connection to the ʻāina" (*Paradoxes* 31). And she describes how attempts to classify Native Hawaiian identity according to blood quantum are actually efforts to racialize the Indigenous population against whiteness, moves intended to ensure private property ownership. Here, genealogy is not singular and linear but plural and entangled; engagement with the environment is as much cultural and social as it is economic.

Nakuina's characterization of the building of waterways corresponds to Kameʻeleihiwa's observations about Kanaka ʻŌiwi infrastructure: "the sophistication of the Hawaiian irrigation system was such that adverse environmental impact was kept to a bare minimum, for as the water was diverted from the stream into successive *loʻi* and then returned to the stream again, there was little or no pollution" (28). This nutrient-rich water would flow to the ocean, where it would form brackish water essential to the health of sea life after mixing with saltwater (Saranillio, "Locals Will" 51). To construct loʻi, community members would build earthen berms to outline the field before flooding the area with water from a nearby auwai. As part of the ancient Hawaiian ecology, the loʻi have served as home to both native species, including dragonfly, heron, and fish, for generations. Today, efforts to preserve Kanaka ʻŌiwi cultural practices as well as the Hawaiian environment often involve the restoration of loʻi and the cultivation of kalo. While many species of plant and animal life have already been driven to extinction through environmental transformation linked to the emergence of the plantation system and the introduction of non-native species, the restoration of these ecosystems has allowed for the slow return of both human and nonhuman inhabitants to ancestral lands. According to Hōkūlani Aikau, "[i]t is through restoring our relationships with the

ʻāina, and I would add the ocean, that we can begin to imagine the impossible, a wholely new governance system that is not reliant on heteropatriarchy, white supremacy, or capitalism" (659). As Patricia Tummons notes, this means "[a]llowing our mountain slopes to capture water, having it percolate into our precious aquifers, and withdrawing it with the help of gravity" (163). Here, maintenance does not correspond to overuse but instead involves letting land rest and water flow its natural course.

From Wai to Water

During her visit to Hawaiʻi in 1907, Charmian Kittredge London, an American writer and wife of Jack London, cast Maui's watersheds on the northern slopes of Haleakalā as an emblem of the technological sublime:

> The Ditch Country—this is the unpoetical, unimaginative name of a wonderland that eludes description. An island world in itself, it is compounded of vision upon vision of heights and depths, hung with waterfalls, withal of a gentle grandeur, clothed softly with greenest green of tree and shrub and grass, ferns of endless variety, fruiting guavas, bananas, mountain-apples—all in a warm, glowing tropic tangle; a Land of Promise for generations to come, for all who can sit a Haleakala horse—the best mountain horse on earth—must come some day to feast their eyes upon this possession of the United States whose beauty, we are assured of the surprising fact, is unknown except to perhaps 100 white men. This of course is exclusive of the engineers of the trail and ditch and those financially interested in the plantations of Windward Maui. (153)

Although its name evokes an industrial landscape wrought by technical systems, London's description of Keʻanae Valley as an exemplar of "Ditch Country" recasts the region in Edenic terms

of ecological and economic abundance. Even as the first large-scale irrigation scheme in the Hawaiian Islands had been completed three decades earlier to supply the "invaluable sugar plantations" on Maui's dry isthmus, the island's landscapes remain "untrammeled paradise" that appear unaffected by the redirection of water from their watersheds (153). Like other travelogues from the period, London's account naturalizes settler colonialism and racial capitalism by presenting the landscape as unchanged, if not improved, in the wake of ecological and social upheaval; the unseen presence of concrete ditches running alongside trails and roads are presented as amplifying the aesthetic qualities of the scene rather than a figurative scarring of the environment and the bodies of nonwhite laborers. London's praise is, I think, notable for the way in which it makes manifest the racialized legacy of US empire-building enfolded in infrastructural development: she is able to consume this "wonderland" because Hawai'i is a US "possession" that has been made both accessible and productive thanks to the heroic labor of white men responsible for imagining trails and ditches.

Scholars have extensively written about Hawai'i as a laboratory for ecological experimentation thanks to its isolated location in the middle of the Pacific, but the colonization of the islands alongside the advent of capitalism and Christianity also made the archipelago an ideal place to improve industrial efficiency through the pioneering of industrial machinery and labor practices. Although the sugar industry flourished in Hawai'i in the late nineteenth and early twentieth centuries, it was not a given that that enterprise would be successful. Despite its reputation as one of the world's foremost producers of sugar following the Civil War, Hawai'i was less suitable for the cultivation of sugarcane than the American South or the Caribbean for several reasons, including its inconsistent rainfall on lands with fertile soil as well as its geographic positioning as the most remote chain of islands in the world. As the sugar industry evolved, the plantation companies recognized several key facts: the success of the plantation was dependent on

the acquisition of a stable water supply and laborers needed to be imported from different countries in order to prevent strikes and labor organizing.

Large-scale irrigation ditches transformed the environment and, by extension, Kanaka ʻŌiwi social structure by siphoning water from windward to leeward shores on the four major islands. To capture this water, engineers from the US and Europe developed complex networks of irrigation ditches and tunnels as well as deep wells capable of sustaining the burgeoning industry. Many of the engineers who irrigated Hawai'i's plantations later worked on projects in California, securing water supplies for both San Francisco and Los Angeles. Although irrigation projects sustained plantation communities that emerged alongside the plantation, the primary recipients of water were sugar plantations and mills. According to Wilcox, the production of "1 pound of sugar takes 4000 pounds of water, 500 gallons. One ton of sugar takes 4000 tons of water, a million gallons. One million gallons of water a day is needed to irrigate 100 acres of sugarcane" (1). For comparison, Boston used 80 millions of gallons of water per day (mgd) in 1939 while the Hawaiian sugar industry diverted more than 800 mgd of surface water and 400 mgd of groundwater in 1920 (5). The development of surface water resources allowed the sugar industry to double their exports every decade, with 260 million pounds in 1890, 500 million pounds in 1900, 1 billion pounds in 1910, and 2 billion pounds in 1932 (20). As a result, nearly every large plantation had invested at least $500,000 in water resource development by the 1920s (17).

Missionary-descended entrepreneurs were able to overcome these limitations thanks to their unique place in the Hawaiian economic and social structure. Carol MacLennan suggests that "physical and natural conditions determine success and failure" in traditional sugar economies, but Hawai'i was different insofar as it "developed a unique organizational system, based on centralization of family capital" (43). Leveraging their connections to the monarchy, these entrepreneurs acquired lucrative leases and rights of way that were not available to the common

businessman. MacLennan suggests that the development of agencies specifically designed for capitalizing and marketing sugar as well as the cooperation of plantations under the aegis of the HSPA—a scientific and technological organization that promoted the mutual interests of its voluntary members—allowed for the accumulation of wealth in a few families, whose agencies would later be known as the Big Five sugar companies (43). This centralized system of corporate management allowed for the sugar industry to enact control over economic, political, and social life in the Hawaiian islands. Although a number of independent planters tried their luck following the Reciprocity Treaty of 1875, many realized that consolidation provided greater opportunity for returns on their investment.

In this section, I examine how the diversion of water from traditional watersheds to sugar plantations laid the groundwork for what Trask has famously called "settler of color and 'immigrant' hegemony" ("Settlers" 45). I view the shift from *wai* to water as more than a linguistic shift; rather, it signifies a significant shift in the environmental and social organization of the islands around Euro-American interests. At the risk of obscuring adjacent infrastructures that made possible the development of water resources, I rehearse abbreviated case studies that exemplify Brian Larkin's suggestion that infrastructure is an amalgamation of administrative, financial, and technical techniques (330). The narratives from which I primarily draw—memoirs and personal accounts by white planters and engineers as well as HSPA correspondence and reports during the late nineteenth and early twentieth centuries—reinforce the Hawaiian built environment as an exclusive domain for the accumulation of wealth by white settlers, even as these projects were considered speculative and prone to risk at the time of their construction. These accounts of Hawai'i's "ditch country" are dependent on transportation and communication systems that allow for the circulation of people and data between engineers, plantation managers, and HSPA experiment stations scientists. An emphasis on irrigation systems rather than these adjacent infrastructures is, thus, an

acknowledgment of the critical role of water across Indigenous and settler colonial histories—a means of mapping the environmental and social transformations of the islands. By providing an overview of the technical function of ditches, flumes, and tunnels that formed the irrigation systems that transformed sugarcane into a valuable commodity, I show how ditch-digging and tunnel-building become framed as racial projects aimed at disciplining both bodies and environments, inculcating laborers with capitalist ideologies while foreclosing alternative uses for Hawaiian land and water.

Ditches

By 1939, more than 240,000 miles of irrigation ditches had been constructed across the Hawaiian Islands to support the plantations and their subsidiaries. According to historian John Vandercook, these ditches transformed the economy of the islands through the mobilization of water:

> The Hawaiian irrigation projects, though they are so far away and function so smoothly that few ever think of them, are the most remarkable and permanent change that man has wrought on the islands. If on some ultimate judgment day the sugar industry should ever have need for justification, it could rest its case upon its irrigation work and submit no further evidence. There is scarcely an acre of the tens of thousands that the ditches serve that was not worthless before money and the wise use of it brought water. (qtd. in Tucker 88)

Vandercook's characterization of water infrastructure in the Hawaiian Islands is indicative of a widespread belief underlying the reclamation projects that were undertaken across the American West and the Pacific in the late nineteenth and early twentieth centuries: unimproved land or empty wilderness lacked value because it was not conducive to resource extraction. Moreover, he glosses

over the massive labor force needed to construct these ditches—much of it imported from China, Korea, Japan, and the Philippines—and instead praises the savviness of plantation owners and managers in making Hawai'i productive.[30] Vandercook's praise for the irrigation system is accompanied by a repeated devaluation of Indigenous accomplishments. He characterizes their rulers as "autocratic," describes them as unsuited for work as farmers given their racial composition, and casts them as only capable of mindless activities (like gathering sandalwood that had grown without human intervention) (Vandercook 9). The privileging of "tame farmers" in Vandercook's accounts of sugar suggests a different relation to the elements and a prioritization of land (as power and resource) over water (Vandercook 7).

Even as ditches became the primary means of conveying water in Hawai'i in the late nineteenth and early twentieth centuries, early ditch-builders would not have shared Vandercook's confidence. Until the completion of the Old Hamakua Ditch by Samuel T. Alexander and Henry P. Baldwin in 1878, large-scale irrigation projects were a pipedream—speculative projects with high risk of failure. To manage their irrigation efforts, Alexander and Baldwin established the Hamakua Ditch Company in 1876, one of the first private water companies in Hawai'i that functioned as a partnership between five plantation companies located on Maui's isthmus. Because Alexander and Baldwin sought to divert water from the slopes of Haleakalā, territory controlled by the monarchy, they needed to petition the reigning monarch, Kalākaua, for the land and water rights necessary to build their ditch. Kalākaua granted Alexander and Baldwin a license on the condition that construction be completed in two years. Failure to meet this deadline would allow competitors to divert water from the same streams Alexander and Baldwin sought to monopolize. Because construction of the ditch was done without the expertise of engineers, who would later form an

[30] The subtitle of Vandercook's history of sugar cane was originally "An Epic of Sugar" but later rendered in more neutral, less heroic terms—"The Story of Sugar." The shift in the title highlights the heroism associated with the transformation of the Hawaiian environment according to the needs of growers and overseers.

integral part of the hydrological projects throughout the islands, the ditch encountered numerous setbacks during construction. Moreover, the lack of trained men amongst the builders meant that the ditch would need to undergo repeated inspection and repair in the future: "Mr. Langford, who superintended the work, was, in fact, a carpenter by trade and consulted with Mr. Baldwin about all details, while the overseers (selected from a band of shipwrecked sailors) and the laborers were quite inexperienced in the kind of work required" (Baldwin 42).

One of the more popular narratives emerging from this project involves Baldwin's heroic efforts to inspire his men despite having lost one arm in a prior accident where his arm was crushed between two cast-iron rollers used to process sugar cane. As detailed in *A Memoir of Henry Perrine Baldwin* (1915), the eponymous figure rallied his ragtag band of men to overcome one of the last obstacles to the successful completion of the ditch:

> When the ditch builders came to the last great obstacle, the deep gorge of Maliko, it became necessary in connection with the laying of the pipe down and up the sides of the precipices there encountered, for the workmen to lower themselves over the cliffs by rope, hand over hand. This at first they absolutely refused to do. The crisis was serious. Mr. Baldwin met it by himself sliding down the rope, using his legs and his one arm, with which he alternately gripped and released the rope to take a fresh hold lower done. This was done before his injured arm had healed and with a straight fall of two hundred feet to the rocks below! The workmen were so shamed by this exhibition of courage on the part of their one armed manager, that they did not hesitate to follow him down the rope. To keep the heart in them and to watch the progress of the work, Mr. Baldwin day after day went through this dangerous performance. (40-41)

The memoir frequently highlights Baldwin's equanimity in the face of danger to highlight his singular resilience: he is unmoved in spite of the "dreadful peril" of his accident at the sugar mill (34) and unconcerned about his safety in scaling the Maliko Gulch on a daily basis. Letters from contemporaries, including Sanford B. Dole, laud Baldwin for his "wonderfully brave and heroic spirit" (qtd. in Baldwin 37). And, notably, a writer for *Thrum's Hawaiian Annual* casts the ditch as "a monument of intelligent enterprise energetically applied and prudently directed" (41). Yet, the memoir overlooks the minutiae of ditch building in favor of rehearsing this heroic masculine narrative of natural conquest, which has become a touchstone in local histories of sugar and has been memorialized at the Alexander and Baldwin Sugar Museum in Puʻunene. It singles out the plantation owner from the laborers, a paradigm that is rehearsed in HSPA correspondence related to the operation of sugar plantations.

Although the memoir frames the Old Hamakua Ditch as the product of "that constructive imagination fundamental in successful captains of industry" (38), the project should be viewed as an act of financial and imaginative speculation—work that required literal and figurative leaps of faith in pursuit of something that risked failure. As costs rose to upwards of $80,000, "business men timidly shook their heads when it was proposed that they should assist with their capital" for an unproven enterprise (40). Castle and Cooke ultimately agreed to advance the necessary money to begin work. (Alexander was married to the daughter of one of the co-founders of Castle and Cooke.) Alexander and Baldwin obtained a lease from the government dated September 30, 1876 with the stipulation that the ditch should be completed no later than September 30, 1878. Initial surveys of the proposed route suggested that the completed ditch would not exceed $25,000 and would be ready to deliver water as early as May 1876 (40). Although water began to flow to Haiku, the site of the plantation, in July 1877, the project was considered incomplete until the ditch collected water from six principal streams: Honapau, Holawa, Hoalua, Kailua, and Naʻiliʻili Haele

(45). Prior to the completion of the ditch, Baldwin's father, a missionary, had told him that "[r]ain, health, reciprocity and God's blessing will get you out of debt" (32). That blessing was realized upon the completion of the Hamakua ditch in September 1878, days before Kalakaua's deadline, curtailing a threat raised by Alexander and Baldwin's primary rival—Claus Spreckels.

The terms of Alexander and Baldwin's lease were complicated by the entry of Spreckels into the sugar industry in Hawai'i. Fearful of increased competition to his fledgling sugar business in California, Spreckels had initially opposed the Reciprocity Treaty of 1875, which allowed for the duty-free export of sugar to the US mainland. But, its passage led Spreckels to enter an increasingly crowded field of businessmen seeking to take advantage of favorable conditions (political and climactic) in Hawai'i. Seeking to counter Alexander and Baldwin's newfound success, Spreckels petitioned for and built the Haiku (Spreckels) Ditch from 1878 to 1879 with the blessing of Kalākaua. Spreckels obtained a license from the government on July 8, 1878, guaranteeing access to waters "that are not utilized on or before the date of these presents—provided that such grant shall not interfere with prior or vested rights of other parties of said streams or on government lands" (Baldwin 41). This license granted Spreckels access to all water from the Hamakua Ditch that was not in use by September 30, 1878—the date by which Alexander and Baldwin were required to finish construction on that project. Wilcox suggests that Spreckels' close friendship with the king and his extension of loans to the Hawaiian government earned him enough political favor to challenge the plantation companies already operating in the islands. Moreover, Spreckels had money and engineering knowhow on his side, as he was "the first to employ a foreign engineer, Hermann Schussler, as did almost every subsequent large project in Hawaii" (Wilcox 62). If the Hamakua Ditch heralded the beginning of ditch building across Hawai'i, then Haiku Ditch set a new standard for large-scale irrigation in the island. According to Jacob Adler, a biographer of Claus Spreckels, the Hamakua Ditch was 17 miles long, delivered 40,000,000 gallons per day, and cost $80,000 while the

Haiku Ditch was 30 miles in length, delivered 60,000,000 gallons of water per day, and cost approximately $500,000 (qtd. in Wilcox 62). This water supplied Spreckels' Hawaiian Commercial Company, later known as the Hawaiian Commercial & Sugar Company (HC&S), which was the largest and most technologically advanced plantation at the time. However, the threat posed by Spreckels was short-lived. By 1898, Spreckels had lost control of HC&S after struggling over ownership with his sons, associates, and competitors. When Alexander and Baldwin bought a controlling stake in HC&S, the two systems were consolidated, and construction began on a series of additional ditches that would later compromise the East Maui Irrigation (EMI) Company, one of the most sophisticated water systems in the Pacific at the time.

The symbolic implications of these ditches come into focus when viewing maps charting their course from origin to destination. The following map (Figure 3) is a topographical map from the EMI that traces the routes undertaken by several ditches constructed after the Old Hamakua Ditch. Even as the sugar industry no longer holds sway in Hawai‘i, these ditches remain partially responsible for delivering water to Maui's residents, who are concentrated in communities where sugar plantations once flourished. This map shows how the diversion of water presents an alternative way of imagining the relationship to the land, one predicated on unsustainable resource extraction and capitalist accumulation that contrasts the principle of shared responsibility of tending to ‘āina and that disrupts the sustainable practices underlying the ahupua‘a. While the ahupua‘a system takes into account shared needs for water at different elevations within a given watershed, the plantation ditches make use of elevation to transport water to privileged regions and peoples, concentrating wealth qua water in specific communities. This horizontality should thus be viewed as a flattening of Kanaka ‘Ōiwi culture, the rejection of ecological communities conducive to alternative engagements with life.

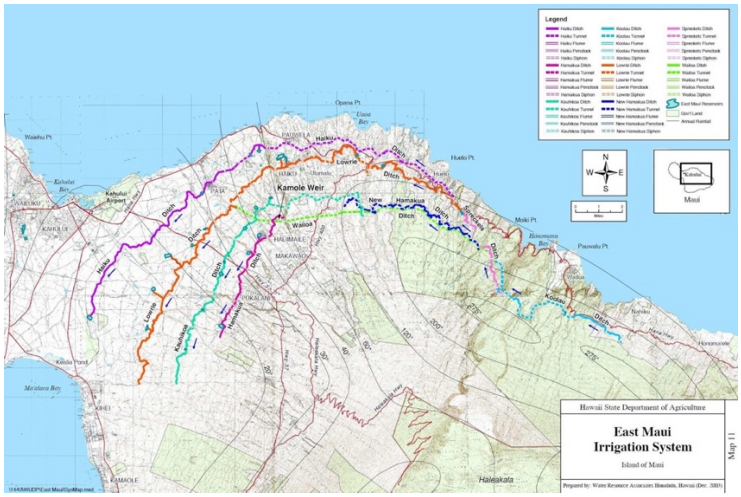

Figure 3: The East Maui Irrigation System transports water from windward to leeward shores, moving water across the boundaries of the ahupua'a (Water Resource Associates Honolulu).

Flumes

If ditches were built into the existing landscapes, flumes made of wood, iron, and steel were built atop of the landscape using multistory tresses, allowing more control over the direction and flow of water in terrain with irregular contours. Built as fixed or portable structures, flumes were a necessity when topographic features made it impossible to effectively harness gravity flow and when poor soil quality (loose, porous) would not permit the digging of ditches that would withstand the elements. Although many plantations ultimately abandoned flumes due to excessive water loss, initial operations relied on wooden flumes built at a slight gradient to transport water across canyons and gulches formed by the archipelago's dramatic mountains rising sharply from sea to sky. And, the construction of flumes remained standard practice across all plantations in the early days of ditch-building, as evidenced by Arthur Tuttle's report on the development of surface water resources for the plantations on Hawai'i's Kohala and Hamakua coasts. This report indicates that flumes might be preferable to ditches when faced with significant topographic obstacles but are ultimately less cost-efficient than wood and metal pipes, which could be constructed and maintained at a fraction of the price (6).

Flumes served multiple purposes for plantations. Used in tandem with ditches and tunnels, flumes were a critical aspect of the irrigation system to transport water across vast distances. For plantations that lacked extensive irrigation systems, flumes provided a way of acquiring water for sugar cane transportation during harvesting and for power generation. But flumes, like ditches, became problematic structures during periods of inconsistent rainfall or droughts. In 1908, the Olaa Sugar Company, later known as the Puna Sugar Company, experienced a drought that resulted in 44/100 of an inch of rain being recorded for the five-month duration, and managers expressed persistent anxiety over the lack of water in the flume even as the plantation was situated in the "wet belt" of the island, which saw 18-30 inches of rain annually (Campbell and Ogburn). The plantation's 72 miles of flume proved a liability to the plantation during the extended drought, resulting in a 50% drop in crop yield from the average of the previous ten years (Campbell and Ogburn). To avoid total dependence on flumes, the plantation developed a railroad system to transport cane from the mill to the harbor. Even so, in Puna, the unique geography of the Hawaiian islands—its preponderance of barren lava—made it difficult to connect separated fields with a unified rail line, necessitating the usage of alternative forms of transport, including flumes and, to a lesser extent, trucks. The simultaneous development of water and transportation infrastructure reveal the extent of the plantation in extending the civilizing mission of the erstwhile missionaries and laying the groundwork for Western forms of modernity in Hawai'i.

Drought was not the only threat faced by plantations like the Olaa Sugar Company. Competing claims to water and land rights threatened to limit the flow of water in Olaa Sugar Company's flumes, thereby destabilizing the entire operation and negating their investments in the flume system. In a five-page letter from John Watt, manager of the Olaa Sugar Company, to A.W.T. Bottomley, president of American Factors, the former decries the "Kau ditch scheme," which would "interfere with the Olaa Sugar Company's water supply" (1). As he notes, " it would be a very

serious matter for the Olaa Sugar Company should any of our present supply be taken away. It would cripple our whole transportation arrangements, not only our transportation arrangements but water supply for the mill, as the water supply at Kaumana is the only source upon which we have to depend" (1). Bottomley responds with news that the Kau Ditch Bill is a means by which its proponents hope "to get certain privileges for themselves in consideration of their putting a ditch through to carry water into Kau. This bill of course is being supported by Brewer & Co, and they will no doubt do their best to have the matter carried out" (1). Should the bill pass the Territorial Legislature, it will, in Bottomley's words, "give ditch people the right condemn property or rights of way for ditches, reservoirs, etc., and what I am wondering is whether if they come anywhere near our waterhead they could condemn a right of way and tunnel in and tap the underground stream from which we get our water" (1-2). Anxiety over the construction of the Kau Ditch, which would support the Hutchinson Sugar Plantation near Hilo, demonstrates how challenges to sugar cultivation materialized in the form of environmental (weather) and economic (business competition) threats. Yet, these hazards remain firmly rooted in the world of sugar cultivation; for these entrepreneurs, the sugar industry is imagined as the sole purveyor of water, foreclosing the possibility of other uses for water that might sustain cultural practices or alternative industries.

Tunnels

With the completion of the Olokele Ditch in 1904 on Kauaʻi, engineer Michael O'Shaughnessy had engineered the first ditch to primarily wend its way through tunnels rather than open channels. While ditches and flumes were susceptible to inclement weather, landslides, overgrowth, and decay, tunnels provided planters with a safer way to protect their investment. Because they were protected from the elements, tunnels were less susceptible to water loss, but insufficient leveling or debris in tunnels could still impede flows. HSPA correspondence indicates

that tools, dynamite, and labor for tunneling were vastly more expensive than ditch-digging or fluming. And, although no more than five laborers were required to maintain the Olokele Ditch following its completion, its construction required the mobilization of large crews completing dangerous work where explosives were involved. Reviewing records of the Olokele Ditch's construction brings to light not only the amalgamation of finance and technical knowledge required for such an undertaking but also highlights the racialized dimensions of ditch-building.

Alexander and Baldwin served as agents for the Hawaiian Sugar Company, which leased land from the Makaweli Sugar Plantation owned by Gay and Robinson. They hired O'Shaughnessy, an Irish engineer responsible for a number of ditches across the Hawaiian islands, to support the plantation on the southwestern shores of Kauaʻi, hoping to expand sugar production following Baldwin's successful efforts to divert water from the Hanapepe River in 1891. O'Shaughnessy would later become the city engineer for the city of San Francisco and is probably best known as the engineer responsible for overseeing the damming of the Tuolumne River in Hetch Hetchy Valley, which provided San Francisco and the surrounding cities with a water supply. The dam that transformed the ecology of a region was claimed to have been as beautiful as—if not more than—Yosemite Valley still bears O'Shaughnessy's name. That O'Shaughnessy participated in the construction of irrigation ditches in Hawaiʻi is little-known outside of academic and historic circles, but also reinforces the circulation of money, people, and sugar between California and Hawaiʻi, the yoking together of archipelago and continent through circuits of material and immaterial commodities.

Construction began on the Olokele Ditch in 1902 and finished in 1904 at a cost of $360,000 (Wilcox 89). Whereas previous ditches had relied on primarily open air channels, the Olokele ditch included "8 miles of 7-by-7 foot tunnels and 5 miles of ditch" (Wilcox 89). As O'Shaughnessy notes in his memoir *Engineering Experiences*, "It took about $20,000 a month to pay for the work, which was

brought up by two men from the plantation headquarters, eight miles distant" (129). The work was laborious insofar as the workers were required to haul building materials up the mountainside to the worksite:

> We hauled materials by wagon from steamer landing 3 miles up Kaenae [sic] Valley over a narrow rocked government road, established our headquarters camp near a large stream; at the end of it built warehouses with corrugated iron roofs, packed and loaded the 200 animals in front of buildings under corrugated lean-tos, had ample canvas and oil clothes to cover all the packs, which were led by one driver in trains of four to six packs over the steep trails, which I tried to limit to 15% grades. In this manner all the construction and food supplies were delivered along the aqueduct route to the different Japanese construction camps. (133)

Like many accounts of plantation labor, O'Shaughnessy describes the labor of building as "work, work, all the time till 8PM at night, except Saturday" (126). And like Baldwin's scaling of the gulch, the ordeal is framed in masculine terms: "Many of the white plantation lunas or overseers lacked guts and courage for such a survey and after a day or two on the narrow trails quit and went back down to the plantation" (123). He was ultimately given a "real man" who was "brutally murdered by a debauched Japanese at the tail end of the canal construction, while faithfully performing his work" (123). Here, the building of Hawai'i is framed as a dangerous enterprise in which select men can prove their mettle, even as this idea of heroic engineering is demarcated by whiteness.

Yet, O'Shaughnessy's account of labor differs from Baldwin's narrative of heroism insofar as it brings into focus the racialized dimensions of the plantation system decades after the construction of the Hamakua Ditch with the unskilled labor of shipwrecked sailors. His comments highlight the deliberateness of bringing down the wages of Japanese laborers through national enmity towards the Chinese, who he views as unsuitable for tunneling work:

> I purchased tents and camp equipment, built 2 miles of new road for narrow wagons near canal grade to headquarters camp, hired Japs by day to open cuts at tunnel openings at grade, and got work ready for bids. The Japs, while wonderful workers, are also excellent bargain makers, and they proceeded to tilt the price of tunnel per foot. I spoke to Mr. Baldwin and had him send me up 20 Chinamen who were dressed in all kinds of fancy colored garments, some with bright blue jackets and other variegated garments. They went over the work, jabbered in Chinese, picked up hammers and broke pieces of rock, talked Chinese and looked wise. The Japs at different camps were close observers of the Chinamen's actions, and with national race hatred and jealousy cursed them calling them "damned pakes"; but finally came across and signed the contracts at satisfactory prices. There is all the difference in the world in the two races. The Japs are patient, energetic, the Yankees of the East, and take to breaking rock in tunnels like ducks to water. The Chinaman, on the other hand, is also patient, but is a natural farmer and light plant grower and averse to hard rock work. (127-8)

Despite this racialization, the completion of the aqueduct is a time for celebration "with all the men, white and Japanese, in the high mountains" that leaves O'Shaughnessy never feeling "happier at the completion of any piece of work [he] ever did" (130). Here, O'Shaughnessy's stereotypical visions of Chinese and Japanese laborers give way to community and celebration—a triumph of mankind over nature requiring the completion of arduous labor. Yet, the stereotypical rendering of laborers provide us with a glimpse of the plantation's representational violence, its reliance on racist tropes to simultaneously advance its takeover and discipline bodies deemed unsuitable for specific forms of labor.

Reservoirs and Dams

Despite heavy rainfall in certain parts of the islands, planters regularly experienced drought-like conditions that threatened their ability to grow and transport sugar cane. As part of the system of ditches, tunnels, and flumes necessary to convey water from mountain slopes to coastal plantations, reservoirs were often constructed in the mountains above the waterhead to feed ditches and flumes during unusually dry growing and harvesting seasons. The Upper Hamakua Ditch system on the northeastern shore of Hawai'i, for instance, included a series of three reservoirs that relied on a series of minor ditches and redwood pipes to transfer water to and from the main ditch (Williamson). Moreover, these ditches provided plantations with a reserve water supply if cleaning and repairs necessitated the closure of ditches. The Lihue Plantation considered installing reservoirs in 1928 to ensure a stable supply of clean water in order to make necessary repairs to the Upper Lihue Ditch, which had fallen into disrepair. The proposed reservoir, ten million gallons in volume with an estimated price tag of $240,000, would employ a series of sluices with screens to filter sediment, thereby curtailing future problems with water cleanliness (Moragne). Because water was intended for use in plantation dwellings in addition to the fields, clean water was a necessity. These steps were viewed by engineers as a means of ensuring continuous water supply for essential activities—power generation, domestic use, and agricultural cultivation—while work to expand ditches or tunnels was undertaken.

The specific geography of the Hawaiian islands posed unique challenges to the drainage engineers and asphalt companies tasked with addressing these problems. As an HSPA experiment station scientist notes, "the problem of leaking reservoirs in the Hawaiian Islands is indeed a very general one and without any doubt a rather serious one" (Hance 2). Upper watersheds are composed primarily of swampy lands that cause rapid deterioration of reservoirs and the earthen dams needed to create these pools. Additionally, some of these reservoirs are built in volcanic

craters that lose water to subterranean lava tubes, which may result in the transformation of surface water into groundwater. Interestingly, that HSPA experiment station scientist uses reservoirs in California, including the Pressure Break Reservoir in Beverly Hills and the Encino Reservoir in Los Angeles, as points of reference for action that might be undertaken to protect the lining of plantation reservoirs. These methods were applied to reservoirs in Honolulu before being recommended to individual plantations and water companies, highlighting the trans-Pacific processes underlying the Hawaiian islands' transformation. Additionally, not all irrigation systems were able to make use of reservoirs due to the lack of basins or the elevation of ideal sites. While artificial reservoirs were employed at several plantations, their costs exceeded those that made use of existing topographical features.

These precarious structures remain in use throughout the Hawaiian islands to this day, extending the legacy of the plantation into the present and future. In 2006, the earthen dam at Kaloko Reservoir on Kauaʻi burst after unusually heavy rainfall, flooding the town of Kīlauea and killing 7 residents (Jones). The failure of the dam generated significant controversy, as the government deflected blame from its role in the debacle by indicting the owner of the dam for reckless endangerment. While the state had been responsible for inspecting the numerous dams across the islands, it did not heed the landowners' warnings and attributed the dam's failure to a modified spillway. Kaloko Dam was originally constructed in 1890 to serve the Kilauea Sugar Plantation. Although the dam had been deemed structurally sound in the early twentieth century due to its ability to hold vast quantities of water, more recent inspections reveal questions over its stability due to overgrowth and seepage. The continued dependence on largely invisible structures like the Kaloko Dam reflects the way in which settler colonialism and racial capitalism continue to manifest in the built environment despite the demise of the sugar industry.

Redirected Flows

According to Wilcox, "the ditches of Hawai'i have a life of their own. They expand, contract, enlargen, straighten, move, and change their names. Modest dirt ditches become cement-lined canals. Sometimes ditch length is measured from the intake to the first field or reservoir, sometimes down to the very last field, and sometimes to points long since abandoned" (8). I take Wilcox's perception of ditch-building as a reflection of the uneven temporality of infrastructure, its simultaneous embodiment of futurity and obsolescence. Even as the completion of the Hamakua Ditch in 1878 heralded the beginning of large-scale ditch-building across the islands, it nevertheless became obsolete in the moment of its completion, rivaled by the Spreckels Ditch. These ditches would, in turn, need to undergo repeated repair in the ensuing decades, from concretization to galvanization. The breakdown of these systems bring into focus the fragility of the plantation enterprise itself. For instance, in revisiting the Upper Hamakua Ditch in 1921, engineer Jorgen Jorgensen noted the amount of ditches, flumes, tunnels, and reservoirs that had fallen into disrepair and decay (Bartels). The hasty construction of the initial ditch in 1906 coupled with a limited budget called into question the entire operation itself, but later improvements sought to address these problems through additional financial investment in revised irrigation systems. I view the ditch-building period of the late nineteenth and early twentieth centuries as a form of standardization, of aligning the plantations as the dominant economic, ecological, and political force on the islands.

The contested histories of race, sovereignty, and capitalism that emerge from the water infrastructure of Hawai'i highlight Hannah Appel, Nikhil Anand, and Akhil Gupta's assertion that "infrastructures are critical locations through which sociality, governance and politics, accumulation and dispossession, and institutions and aspirations are formed, reformed, and performed" (3). The histories of these waterways have traditionally been viewed through the lens of white settlers, privileging a narrative of urban development that paves the way for Hawai'i's annexation and

incorporation into the US empire-state. But, these stories leave space for interrogating alternative visions of technological progress, liberal equality, and economic growth that are unmoored from the paradigm set forth by the plantation. After all, with the diversion of water to plantations, Kānaka ʻŌiwi were, in the words of D. Kapuaʻala Sproat, "left to live or die with the consequences. This rapid change altered the natural environment, and also inflicted significant physical and cultural harms on Native Hawaiians, many of which remain unaddressed to this day" (189-90).

Capitalist Roots of Multiculturalism

Although the redirection of wealth to the plantocracy has repeatedly been framed as the product of white ingenuity, the transformation of the built environment through the diversion of water and the cultivation of sugar could not have been accomplished without the recruitment of thousands of multiethnic laborers needed to maintain plantation operations and, by extension, planters' control over the islands. Facing economic, political, and social upheavals in their countries of origin due to Western imperialism in the Asia-Pacific region, recruited contract laborers traveled to Hawaiʻi in search of a better life but experienced hardship and poverty while supporting the sugar industry. The successive waves of immigration from China, Portugal, Norway, Japan, Korea, Puerto Rico, and the Philippines might explain the contemporary representation of Hawaiʻi as a multicultural paradise, but distinctions between groups intended for repopulation and labor highlight the economic and social value of these immigrants in the eyes of the white plantocracy: European laborers were viewed as suitable for assimilation while Asian laborers were viewed as instruments of work. Moreover, though ethnic differences are celebrated as part of Hawaiʻi's distinct identity in the current moment, those differences afforded plantation owners and managers the opportunity to maintain their power by playing ethnic groups against one another. Even as we now celebrate the racial diversity stemming from the system of contract labor in order to highlight the progression of

Hawai‘i from its Indigenous origins to a state of civilization, we willfully overlook the way in which that diversity is dependent on the plantation's administrative, financial, and operational techniques. The same extractive logic that is applied to the built environment is also applied to the people tasked with enacting a capitalist vision of the islands.

As the dwindling population of Kānaka ‘Ōiwi could no longer meet the plantations' increasing demand for labor, plantation agents recruited a multiethnic plantation workforce whose cultural and linguistic differences would foreclose the possibility of interethnic labor organizing and preserve white authority in Hawai‘i. The Royal Hawaiian Agricultural Society (RHAS), one of several precursors to the HSPA, emerged in the wake of the Māhele to promote the interests of the nascent plantations in Hawai‘i. Despite its name, the organization was primarily comprised of influential white businessmen and entrepreneurs, many of whom already served on the king's Privy Council and would later become synonymous with the sugar industry. Records from the first meeting of the RHAS highlight the importance of finding an alternative labor source that could sustain the growth of the sugar industry: "[t]he introduction of Coolie labor from China to supply the places of the rapidly decreasing native population is a question that is already agitated among us" ("Transactions" 8). To accomplish this, William Little Lee, future Chief Justice of the Supreme Court of the Kingdom of Hawai‘i and the first president of the RHAS, drafted the Masters and Servants Act of 1850, which fulfilled the organization's desire to secure a permanent supply of labor by formalizing a system of apprenticeship and contract labor that would remain in effect until Hawai‘i's annexation. Under this law, individuals could bind themselves by written contract to terms of service not exceeding five years in length and could face contract extensions, fines, or imprisonment for desertion or failure to work.

China was viewed as a logical site to recruit labor given its geographic proximity, lower economic costs, and familiarity to planters who had interacted with a handful of Chinese

agriculturalists already in the islands. In 1852, the first shipment of Chinese coolies—195 men from Amoy— arrived in Hawai'i, contracted to "serve for a term of five years at three dollars per month in addition to passage prepaid and food, clothing, and shelter provided by the planter who had engaged their services" (Coman 11). Many of the Chinese who were recruited as contract laborers in the latter half of the nineteenth century immigrated after experiencing political turmoil at home, including the violence of the Opium War from 1839 to1842, mass death resulting from the Taiping Rebellion from 1850 to 1865, and ongoing gang wars between the Punti and Hakka clans in the Pearl River Delta between 1855 and 1867 (Takaki, *Pau Hana* 30). Upon arriving in Hawai'i, which they dubbed the Sandalwood Mountains, they found themselves in impoverished conditions, even as newspapers at the time heralded the relative "satisfaction" of Chinese laborers in Hawai'i when compared to the Caribbean and South America—regions where coolie labor was viewed as another form of slavery (Coman 12). In Honolulu, coolies were subject to quarantine and inspection before being assigned to different plantations, where they would complete the back-breaking work of clearing forests and cultivating crops for 26 days a month and 10 or more hours per day. At the expiration of their contracts, Chinese laborers either returned to their homes or settled elsewhere in the islands, choosing to leave the plantations behind in favor of entering other industries.

Although the introduction of coolie labor solved a labor shortage in Hawai'i, it created political problems for the islands' plantocracy. As the emancipatory wave swept the globe in the nineteenth century, coolie labor proved an alternative to slavery, even as the ambiguity of its definition sometimes aligned it with that of slavery. As Moon-Ho Jung reminds us, "[c]oolies were never a people or a legal category. Rather, coolies were a conglomeration of racial imaginings that emerged worldwide in the era of slave emancipation, a product of the imaginers rather than the imagined" (5). Noting how the recruitment of Asian coolies coincided with the industrialization of the sugar industry, Jung suggests that "Asian coolies recurrently and paradoxically embodied the

hopes, fears, and anxieties of those struggling to sustain and abolish slavery" (63). To protect sugar production in Louisiana following emancipation, American planters decried the use of coolie labor in Hawai'i as antithetical to the freedom and justice embodied by the US. While these same planters had previously decried coolie labor in the Caribbean as an economic threat to the nation in an effort to bolster slavery, they now framed coolie labor as a political threat to the unified country in the wake of emancipation. Such complaints underscored Congressional representatives' repeated attempts to deny the Hawaiian government's request for reciprocity, which was viewed as a direct threat to American sugar. Though early records of the RHAS frame the contract labor system as a means of securing indentured labor, later accounts from the Board of Immigration, the agency tasked by the Hawaiian government with securing additional labor, deny any links between the contract labor system and slavery. In the words of Charles Gulick, president of the Board of Immigration, "[t]he coolie system known as such has never existed here. The only law between employer and employee is the Master and Servant Law, than which note is milder or more equitable, requiring as it does the specific fulfillment of contracts. The law protects the laborer in all his rights, and affords no more protection to employers in theirs" (qtd. in Coman 50).

Concerns over the use of coolie labor impacted the first group of Japanese laborers to arrive in 1868. These laborers, locally known as the gannenmono, had been recruited without the permission of the Japanese government, who lodged a complaint with the US minister in an effort to curtail further recruitment efforts in Japan but whose complaints were not fully addressed. Although Japan had forbidden its citizens to conduct work overseas in debt peonage situations, the Japanese government augmented its policy in 1885, allowing its citizens to work in Hawai'i on the condition they be paid in silver and any balances remitted to Japan in gold (Wilcox 50-1). Japanese workers were inclined to make the voyage to Hawai'i in light of increasing poverty caused by the country's modernization. Franklin Odo describes how "[t]he issei left Japan during the Meiji Era

(1868-1912) and arrived on the sugar cane plantations of Hawai'i just as their homeland's military regime was rapidly expanding in Asia. The United States was also, simultaneously, increasing its power in the Pacific, including in Hawai'i. As a result, the issei were caught in the racial animosities that arose from these global tensions" (xxv). As Japan waged war against China, Russia, and Korea, its people bore the brunt of its increasingly large military budget, forced to pay compulsory land taxes and contend with deflationary policies that reduced the price of goods farmers had cultivated for generations. Hawai'i provided an alternative to the rapidly industrializing cities of Japan, where workers would be consigned to factories and urban dormitories, even as the conditions of the plantations were arguably worse than the dwellings the landed peasantry had occupied in Japan. Japanese laborers would come to constitute a majority of the plantation workers in Hawai'i—estimated at 65% percent of the plantation workforce in 1900 (MacLennan 173).

The acquisition of Hawai'i and the Philippines by the US in the aftermath of the Spanish-American War of 1898 radically reshaped labor relations in Hawai'i. As a territory of the US, Hawai'i could no longer enforce previously enacted laws, including the Masters and Servants Act of 1850. Freed from their contracts, plantation workers staged at least 20 strikes in 1900, calling for better working conditions and improved pay. In response to these strikes, the HSPA instituted a standardized system of wage labor, increasing the maximum per day pay for unskilled labor, the institution of "contract work" in which a contractor would be responsible for recruiting men and women to work a tract of land by raising sugar cane, and organizing island-specific branches of planter organizations to better implement these new policies. But annexation also had several notable effects on the demographics of plantation workforce, which accounted for 21% of the archipelago's population (MacLennan 173). According to Lisa Lowe, the incorporation of the Philippines as a US territory "served national capital imperatives through expansion and the interruption of the previous conditions of the agrarian Philippines, which displaced Filipinos from

previous forms of work, thus providing an exploitable labor force available for emigration to the United States" (*Immigrant* 17). In Hawai'i, the procurement of another source of labor, especially one already part of the growing US empire, allowed planters to disrupt the primacy of Japanese laborers in the islands. The growing population of Japanese laborers in Hawai'i coupled with their labor organizing motivated plantation agents to turn from Japan to the Philippines for labor. Following a crippling strike on O'ahu's plantations in 1909, HSPA agents began important Filipino labor, radically reshaping the demographics of Hawai'i. By 1920, 10 percent of the population traced their roots to the Philippines, with an increasing portion of the plantation workforce identifying as Filipino in successive decades (Baldoz 49-52).

Even as these workers acquired newfound freedoms in Hawai'i's annexation, they remained disenfranchised workers at the mercy of plantation owners and managers. Although early missionaries had decried what they perceived as feudal aspects of Hawaiian society which deprived the common man of individualistic rights, missionaries-turned-planters established a paternalistic hierarchical system on the plantation to protect their financial interests and political power. Takaki has described how laborers formed part of an ethnically stratified plantocracy, thrust into "a wage-earning system and the regimented life of modern agricultural labor" (*Pau Hana* 56). At the top of the hierarchy were white owners and managers, members of Hawai'i's ruling oligarchy. Owners and managers rarely interacted with skilled and unskilled laborers, leaving field bosses to oversee everyday operations. These individuals, usually white, supervised the Portuguese lunas, who were responsible for enforcing the plantation's policies and rules amongst the workforce. Under the luna, skilled and unskilled laborers were largely divided along racial and ethnic lines. Though a few Japanese were selected as lunas, Koreans, Chinese, and Filipinos were, according to Odo, "generally trapped in manual labor if they stayed on the plantations" (58) in the late nineteenth and early twentieth centuries. While Norwegians, Germans, and Portuguese sometimes served as unskilled

labor alongside Indigenous and nonwhite workers, "skilled positions, such as sugar boilers, engineers, and lunas or foremen, were held mainly by whites" (Takaki, *Pau Hana* 76). To discourage interethnic labor organizing, the plantation paid workers at different rates according to their ethnicity, even if they performed the same labor in comparable ways: "Filipino cane cutters, for example, were paid only $.69 in average wages per day in 1910, as compared to $.99 for Japanese cane cutters" (Takaki, *Pau Hana* 77).

This hierarchical structure is reflected in the segregated camps that formed the larger plantation community. Maps of Kea'au Village, a community serving the Olaa Sugar Company on Hawai'i island, show the ethnic segregation of laborers in 1937. Even as Olaa, later known as Puna Sugar Company, was an exception to the traditional hierarchy of plantation labor thanks to its unique model of leasing individual plots to laborers, the map shows the overwhelming number of Japanese immigrants and their American-born children in the community, the marginalization of Native Hawaiians in the makeup of plantation life, and the privileges afforded to white overseers who live in dwellings removed from the rest of the camp. Likewise, maps from the 1940s displayed at the Pioneer Mill Museum in Lahaina—a series of small rooms tucked away in a shopping plaza in the former whaling village and sugar town—lend further credence to this policy of ethnic segregation. Assembled from the private collections and memories of former residents and laborers, these maps show the different resources and amenities afforded to different communities—42 villages in total—based on their standing in the plantation system. For instance, because the Filipino community consists of a large number of single men, the map denotes a number of dwellings reserved for bachelors rather than families. This stands in contrast to the orientation of the Hawaiian camp, where the majority of dwellings are shown to be occupied by families. Notably, the maps suggest limited intermixing between racial groups, with Japanese and

Hawaiian names appearing in camps that are designed according to ethnic identifier, primarily surnames.

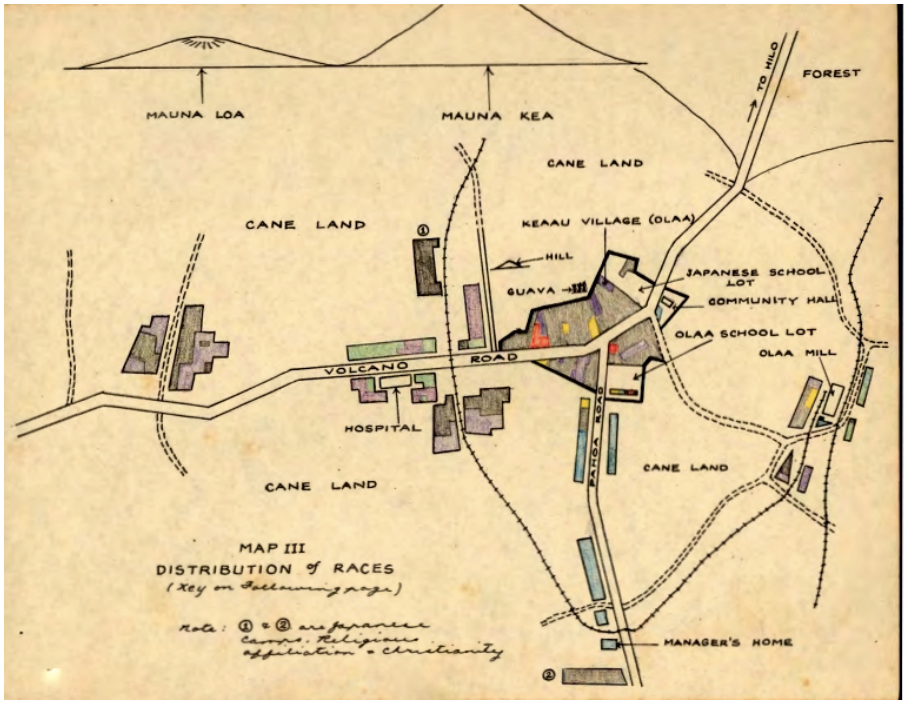

Figure 4: Map of Kea'au Village in 1937 produced by "C.T.," a sociology student, that shows the racial orientation of Olaa Plantation (Kirk-Kuwaye).

Records, logs, and correspondence from the HSPA archives show how laborers were cast as instruments of production tasked with enacting a white supremacist vision of Hawai'i: workers from Japan, China, Korea, and the Philippines are repeatedly ordered in "lots," discussed as "shipments," and referred to by numbers corresponding to their contract and immigration documents (Takaki, *Pau Hana* 23). Other pieces of correspondence paint a bleak picture of undifferentiated Asian contract laborers, including forced medical examinations on arrival and rigid punishments for laborers accused of desertion. Because such correspondence is largely confined to the managerial class, these documents reinforce the economic, geographic, and social distance between the white and the nonwhite underclass. There are, however, several instances where these bodies become worthy of reportage or narrativization: when agents from foreign consulates report on the "real

conditions" of the plantation camps; when plantation managers discuss the importance of diversifying their contract labor to avoid strikes; and when accidents or social disturbances occur. Based on my survey of correspondence between plantation managers and owners, these workers primarily attain the semblance of subjectivity in the plantation records in cases of accidental death or bodily harm—when accidents generate additional paperwork that must be filed with the Industrial Accident Board, established following the annexation of Hawai'i and the passage of the Hawai'i Workmen's Compensation Law in 1915, and that bring to light the familial recipients of financial compensation.

Letters from foreign dignitaries bring into focus the dehumanization of contract laborers on the plantations. Miki Saito, the acting Japanese consul in Hawai'i from 1898 to 1902, appeals to sentiment to reinforce the humanity of Japanese workers in his letter to the agents of the Japanese Emigration Company:

> To call your sentimental feeling to the condition of some of the laborers here is an instance. At one of the camps there lived a few married persons and single men together among whom was a baby. The baby cried at night and kept the laborers awake, for two or three night [sic] continually. These laborers became vexed and told the woman to take the baby and leave the house, as they could not sleep and consequently would incur the anger of the luna the next, as they would not be able to do the work properly. The mother took the baby into the cane fields and spent several nights there. (3)

Saito's appeal stands in contrast to correspondence between plantation managers and agents insofar as it establishes the plantation laborers as humans worthy of dignity and respect, even as their bodies are only valuable in the eyes of the plantation for their labor. The scenario cited in Saito's letter showcases the way in which plantation labor reorients kinship structures not only through the

construction of barrack-like dwellings where single men and married couples occupy plank-like beds in a communal space lacking privacy, but also the rigid work schedule that privileges efficiency and standardization over healthy human connections. Indeed, the characterization of sleeping quarters as "shelves" positions the laborers as tools that can be stored and taken down when necessary. This, however, is not characteristic of all the plantation camps, as the consul notes several buildings that seem luxurious by comparison—single houses replete with verandas as well as separate living and cooking quarters. And, in detailing the story of a mother who must take her crying child into the cane fields to avoid waking the men, whose inability to sleep puts them at risk of punishment by plantation overseers, the letter highlights the struggles faced by Japanese families in maintaining their way of life while paying off debts to the plantation (i.e. the child, a symbol of futurity, has to be exiled into the field). In other words, deficiencies in labor are considered greater problems than familial deficiencies—the isolation of the woman in the fields for multiple nights. This letter reads as an anomaly in otherwise dry correspondence regarding daily activities.

While the archive registers catastrophic events, including riots, strikes, and fires, less spectacular events bring into focus the laborers' personal lives, which remain largely invisible in the plantations' correspondence, memos, and logs focused on topics ranging from "finances" and "plantation contracts" to "land matters" and "weather." The absence of this personalization in HSPA archives suggest that Asian bodies, primarily Japanese and Filipino, become narratable only in the breakdown of the rigid social and environmental structure of the plantation system. Take, for instance, the case of Shinasuke Tomokio, a carpenter, who had been employed by the Hawaiian Irrigation Company (formerly the Hamakua Ditch Company), but suffered fatal wounds following an accident while completing a job in 1926. In a three-page report by the Industrial Accident Board of the County of Hawaii, readers learn of his wife's attempts to gain redress from the Hawaiian Irrigation Company for the death of her husband. The document largely focuses on the monetary

compensation that Tomokio's widow and four children will receive: "sixty percent of the average weekly wage of the said Shinasuke Tomokio, or Five and 27/100 ($5.27) Dollars per week for a period of three hundred and twelve (312) weeks" (Industrial Accident Board 2). The level of compensation decreases from sixty to forty to thirty percent of Tomokio's weekly wages as each of the four children reach the age of 16, presumably when they are no longer viewed as minors in the eyes of the Industrial Accident Board. And, interestingly, compensation for Tomokio's widow will cease should she die or remarry. The accident and workman's compensation reports highlight the contract laborers' dependence on the plantation for their livelihood and show how the plantation system shaped the workers' professional and private lives. But, it also shows how the remembrance of these individual lives within the official plantation record is always already tied to finance.

Accidents have been a central aspect of the plantation system since the earliest days of the plantation. As we have already seen, one such story has become a plantation mainstay: the story of the one-armed Henry Perrine Baldwin scaling Maliko Gulch. In contrast to this heroic narrative of white masculinity, the accident reports that come into focus in the HSPA records primarily involve Japanese and Filipino laborers seeking compensation from the Industrial Accident Board, a territorial agency tasked with reviewing workers' compensation cases. Following the annexation of Hawai'i, the establishment of workmen's compensation laws further generates material related to the lives of individual laborers, with numerous accident reports, medical statements, and court records attesting to workers' deaths. The Hawaii Workers' Compensation (WC) law was enacted in 1915 to provide compensation for loss of wages and medical care to employees who experienced violence or injuries in their function as employees.[31] The law absolved the employer of fault in the injury and precluded the possibility of leveraging civil lawsuits against the employer but ensured that employees

[31] Workmen's compensation laws have historically been instituted in the US at the state level, and all states have enacted laws requiring most employers to compensate injuries while employed (Burton 23).

received reasonable compensation for work-related injuries so long as they remained in Hawai'i. Even as these laws lend credence to the idea that statehood benefitted contract laborers, it is worth remembering how the plantation repeatedly sought to disenfranchise its laborers by curtailing interethnic labor organizing against substandard wages and living conditions. Indeed, disability and compensation reports highlight the danger of working on the plantation as well as the way in which the healthcare of the laborers was one arena through which the plantation managed their workforce. Such reports might bookend a worker's experience on the plantation: medical checkups to determine their fitness for the type of labor for which they have been recruited followed by medical notes detailing the severity of the accident that disfigured the victim's body.

Amongst a series of accident reports from the Lihue Plantation Company, the death of a worker operating a railway car stands out thanks to the sheer quantity of legal paperwork generated by the case. That case includes court testimony of three witnesses—Seraphine Amaral, Joe Freitas, Louis Rapozo—who witnessed an accident that precipitated the death of Masaru Konishi in 1929. The deceased slipped because "his pants caught on the [coupling] pin and he fell backwards" while cleaning the smokebox and fell underneath the slow-moving (approximately 2mph) train ("Transcript" 6). The slow speed of the train is attributed to the fact that the workers are picking cane and adding it to the haul as the train is moving. As a result of the fall, Konishi is pulled underneath the locomotive engine, a space described as being no more than a foot. Amaral states, "I tried to talk to him while in the car. And we used to call him nickname 'monkey.' I told him, 'Be brave, you are not hurt.' I asked him, 'Are you hurt?' 'No, not hurt,' he said. Coming further down he said, 'What's the matter with my eyes? I can't see.' I told him, 'It's all right; it will be all right in a little while.' He said, further down, 'Hold my back, I like breathe.' He said that about three or four times" ("Transcript" 4). Despite his consciousness at the time of the accident, a doctor's report confirms Konishi's death as a result of trauma sustained by the impact: "This is to certify Masaru

Konishi, Japanese male, aged 19 years was brought into the Lihue Hospital at 7:45AM February 23, 1929. He was found to be suffering from internal injuries to chest and abdomen and his back was broken in two places, and said to be due to being accidentally hit by a locomotive. He died at 5a.m. Sunday February 24, 1929" ("Transcript" 16). Subsequent questions from lawyers are interesting insofar as they mix standard English and Hawaiian words, as in the following question about the location of Konishi's trauma: "When he fell, did he fall on his side or on his opu?" ("Transcript" 7). The linguistic distinctions between the questioner and the respondent make legible the power dynamics of the situation; whereas one of the witnesses responds in the plantation's language of control—pidgin—the questioner demonstrates mastery of language and familiarity with local customs. But even legal documents from the IAB do not always capture the reality of an individual's life. Additional documentation from the case indicates that the compensation had been miscalculated based on the deceased's perceived relationship to two children (Lydgate). Yet, such connections could not have been possible due to Konishi's age, as explained by the man's sister who had been mistaken for his wife. Such lives, then, remain incomplete in the official record, misrepresented by the agencies tasked with serving justice in one of the few moments when identities come into focus.

Even as I have only highlighted two particular accidents, it should be noted that the loss of bodily function is a regular occurrence on the plantation. While death might be the most severe outcome for workers, IAB reports indicate that workers were frequently at risk of vision impairment, broken limbs, and illness at all stages of the cultivation and production process. Because plantations across the islands typically employed a doctor who was responsible for ensuring the quick return of laborers to their posts, severe cases required transfer to medical centers in Honolulu. Documents suggest that these doctors are not entirely uncompassionate in their treatment of patients, with some requesting compensation for their patients so that they can relocate

to another plantation or return to their country of origin. But these instances of generosity and kindness are the exception rather than the norm. And because these records do not account for the labor involved in constructing irrigation systems, we do not have a record of any deaths that might have occurred prior to annexation.

While the ascendance of the plantation oligarchy depended on the depopulation of Indigenous communities, the injury of Asian contract laborers did not serve the overall economic interests of the plantation. Deprived of labor, the accident reports register a disruption to the flow of capital from imperial center to settler colony, diverting money away from additional capitalist accumulation by requiring payouts and medical care as well as necessitating the hiring of replacement, who might also be susceptible to the same forms of disability and death. As with the breakdown of infrastructure, the injury of laborers' bodies bring into focus the fragility of the plantation system, its dependence not on a monolithic workforce broken into ethnic categories but individuals with unknown lives. These lives only become narratable in the moment of disability or death, redirecting our attention away from the narratives of development and progress touted by white visitors. Even as these personal histories might be preserved amongst individual families with obituaries printed in local foreign-language newspapers, they are shown to be outside of the range of the plantation's immediate concerns. By stitching together fragments of contract laborers' experiences, we can begin to see how the plantation dictated the lives of the people who built the sugar industry. While scholars like Saidiya Hartman have pioneered modes of writing in which archival fragments can serve as the basis for critical fabulation, I am hesitant to adopt such practices in light of the Christian undertones of the biographical genre, especially in a context where the Protestant work ethic has been reframed as a plantocratic tool for nonwhite subjugation. Lingering with the death of Asian contract laborers allows us to turn a critical eye to the capitalist systems that

continue to dominate the economy of Hawai‘i, transforming individuals into agents of capital responsible for the continued displacement of Indigenous peoples and lifeways.

The harsh working conditions of the plantation—from overcrowded living quarters divided by race and ethnicity to the everyday risk of injury while performing menial labor—have traditionally served as a point of departure for economic and social justice advocacy for Asian contract laborers and their descendants. In seeking recognition as individuals with complex identities rather than instruments of production, Asian immigrants have bought into the conflation of freedom with liberal subjectivity and the globalization of capital. Lowe has described how "the liberal narrative builds the disavowal of settler appropriation into the promises of freedom overcoming slavery" (*Intimacies* 14). Even as the conditions of labor in Hawai‘i were not analogous to slavery, liberal narratives of Hawai‘i's multicultural development overlook Indigenous and Asian death in promoting a narrative of diversity and inclusion that justifies the colonization of the islands.

But if Asian laborers only come into focus when accidents happen, then Native Hawaiians are largely removed from the picture at the turn of the twentieth century, already excised from the narrative of the sugar industry. In the HSPA archives, the trace of Indigenous communities can primarily be discerned in the names of places where water infrastructure was developed in the late nineteenth and early twentieth centuries: Waipi‘o Valley, Kaumana Waterhead, and Waiākaea Forest Reserve among other places. The absence of Native Hawaiians in HSPA records as well as the limited perspective of Asian immigrants suggests that the archive erases or displaces bodies of native and immigrant laborers into infrastructure. Just as Indigenous death provided the framework for settler colonialism, the deaths of contract laborers are framed as necessary byproducts of economic progress and urban development. While these deaths are cast as rallying points for later struggles for justice rather than an interrogation of the systems by which settlers benefitted, Asian and Indigenous bodies only gain legibility for the plantocracy when their bodies break down and cause problems,

whether it be economic or social disruptions. Although visitors like Charmian and Jack London found an "untrammeled paradise" in the ditch country of Hawai'i, the reality of life for laborers was anything but. This is not to say that the plantation was not also a source of wonder for the contract laborers but that the plantation mediated a range of experiences that make possible the nostalgic recuperation of capitalist plantation values in terms of social justice.

The Making of Indebted Men and Women

In a chapter of Maxine Hong Kingston's *China Men* titled "The Great Grandfather of the Sandalwood Mountains," the narrator returns to Hawai'i in search of traces of her ancestors in the built environment. After spending the night on Mokoli'i, commonly known as Chinaman's Hat, she discerns the voice of her great-grandfather, Bak Goong, in the bluster of the wind and the rustle of the cane and attributes this phenomenon to a subversive practice her great-grandfather pioneered while working as a laborer on one of the island's sugar plantations: forbidden to speak by the plantation lunas, he shouts his desire for "home" into holes, which generations later sprout into the lush greenery populating the archipelago. In planting his secrets in the earth, Bak Goong has ostensibly claimed land that was denied to him, subverting the forces that have stripped him of humanity and contributed to the deforestation of Hawai'i. In this way, Bak Goong can be viewed as a settler rather than a sojourner, challenging the perception of Asian immigrants as perpetual outsiders by claiming American identity through the cultivation of soil. However, by suggesting that Chinese laborers "can make up customs because [they are] the founding ancestors of this place" (118), the fictionalized memoir advances a claim that has taken root in Asian American studies: in literally and figuratively building Hawai'i, Asian laborers and their descendants have inherent claims to the rights and privileges afforded to naturalized and natural-born citizens of the US.

Asian American writers, like Kingston, have adopted the dehumanizing aspects of the plantation system as a point of departure for narratives celebrating triumphs over anti-Asian racism through hard work and military service, but such victories remain inscribed within the logic of settler colonialism given the positioning of the plantation as the basis for Asian resistance and resilience. According to Saranillio, "settler colonialism often shapes and constrains our political imaginations in ways that allow for movements seeking reprieve from white supremacy to, sometimes unknowingly, collude in Native dispossession" (*Unsustainable* 19). Literature provides a means of mapping the imaginative constraints imposed on Asian contract laborers and their descendants, voices conspicuously absent from the HSPA records. In *China Men*, freedom from the tyranny of the plantation—its silencing of its workers as a form of controlling their labor—depends on terraforming projects that subvert the plantation monoculture. Yet, these subversive acts do not address the legacy of Indigenous displacement that occurred prior to the emergence of contract labor in Hawai'i, naturalizing changes wrought by the plantation as the "original" state of Hawai'i. Although Kingston alludes to the dispossession of Indigenous communities by imagining abandoned villages whose emptiness spooks Bak Goong, her narrative relies on the trope of claiming land as the basis for the articulation of demands, for dignity in the face of dehumanization, positioning Asian contract laborers as the foreigners desiring native land for their own political benefit. As Patricia Linton notes, this episode "demonstrates how people appropriate the land, making it so completely their own that the land itself tells their story" (45). But, in becoming so-called "American forefathers" (45), these figures perpetuate native dispossession by making the land tell only "their story."

One of the most famous works of local literature, Milton Murayama's *All I Asking For is My Body*, a plantation-era bildungsroman narrated by a Japanese American boy growing up in the highly stratified plantation villages of Maui from 1932 to 1943, resists notions of liberal multicultural

progress by lingering with the destruction of family and self under the plantation system. The work is part of a tetralogy, with *Five Years on a Rock*, *Plantation Boy* (1998), and *Dying in a Strange Land* (2008) extending the saga of the Oyama family from Japan to Hawai'i to New York to California across the twentieth century. Each novella adopts the perspective of a different family member, showing how the experiences of filial piety, labor exploitation, and US militarism are rearticulated according to one's personal and geographical relationship to the US mainland—the "strange land" of Murayama's final work. Taken together, the tetralogy maps the shifting racialization of Japanese Americans, from the peripheries of US empire to the center of Asian American literary and political consciousness. *All I Asking*, in particular, is useful for this interrogation of settler colonialism and racialized capitalism insofar as it shows how the embodied experience of plantation life is dependent on infrastructure's ability to dictate ambient experience, supplementing limited accounts of plantation life found in the HSPA archives. Though fictional, Murayama has suggested that his work be understood as "history-writing," which is driven by the need to "put into record a body of first- and second-hand experiences—growing up on Maui, schooling, working in the canefields, any number of things" (qtd. in Chock and Manabe 59).

Divided into three parts—"I'll Crack your Head *Kotsun,*" "The Substitute," and "All I Asking for Is My Body"—the novella traces Kiyoshi Oyama's transition into adulthood. The novella's third part has captivated scholars for its stark depictions of plantation life, the escalation of tension between parents and children over duty and debt, and the wartime game of craps by which Kiyoshi wins enough money to pay off his family's crippling debts. Whereas the conventional reading of *All I Asking* has tended to focus on intergenerational conflict between Kiyoshi's older brother, Toshio, and his parents, I follow Stephen Sumida's lead in attending to the novella's focus on the oppressiveness of the "prime American institution in this novel, the Frontier Mill Plantation" (116). Overlooking the paternalistic relationship between plantation and laborer naturalizes the capitalist

system in which the Oyama family is trapped, casting participation in a capitalist system as a prerequisite for claiming subjectivity. However, that system is already stacked against ethnic minorities and immigrants. I thus situate intergenerational conflict as a byproduct of the plantation's efforts to control its workforce by shaping imaginations and experiences through the unequal distribution of resources and pollution. Sumida casts *All I Asking* as a bildungsroman that plots "the development of the narrator's psyche and value" (110) by showing Kiyoshi's growth into an adult "aware of the blindly conventional and the hypocritical in whatever quarter of society" (117). Yet, as I argue, *All I Asking* challenges the traditional conventions of the bildungsroman by highlighting the fragmented subjectivity of protagonists caught between allegiances to family and self as well as ancestral homeland (Japan) and adopted home (US). I suggest that we read the novella not as a novel of formation—or bildung—but of unbuilding—or anti-bildung.[32] The novella does not culminate in a triumphant return home with newfound knowledge but rather an uncertain future wherein the dehumanizing aspects of the plantation are traded for the exploitative conditions of war.

The novel's third part is significant for the way in which it mediates multiple transitions. First, the narrative shifts attention to Toshio, even as it continues to be narrated by Kiyoshi. Toshio's aversion to plantation work leads him to lash out at his family for saddling the family with debt, forcing their children to enter the same cycle of poverty that they entered. It is here that Toshio utters the infamous words that lend themselves to the title of the novella: "Shit, all I asking for is my body. I doan wanna die on the plantation like these other dumb dodos" (48). Second, the final section highlights the family's return to Kahana, the plantation village of the Frontier Mill Plantation, after failing to turn a profit on alternative ventures in Pepeleau, a community on the

[32] Patricia Chu has argued that "Asian American writers have remade the genre, asserting their stories into the literary canon, by developing a literature in which assimilation is a central figure for *bildung* as a process that combines individual development with the process of reconciling the ethnic individual with the nation" ("Bildung" 409).

outskirts of the plantation.[33] This move is not only registered in geographic terms but also in psychological changes about self and community. Third, this migration signals the end of Kiyoshi's childhood—his youthful forays into Filipino Camp while following Makot, the ostracized and emasculated son of a Japanese prostitute—and the subsequent adoption of his mother's superstitions about life and death. This "adoption" includes what Patricia Chu calls "the plantation workers' practice of sending their sons into the field from age thirteen onward [which] can never result in solvency due to the low-wage, high-expense financial environment controlled by the plantation" (*Assimilating* 55).

The novella's depiction of plantation geography demonstrates how infrastructure not only shapes access to resources and pollution but also contributes to the sense of entrapment felt by the Oyama family. Kahana is described as a remote place cut off from the rest of society, a place where the *bobora* or country pumpkin congregate in poverty (28). Whereas Pepelau is figured as a multicultural community that resists easy categorization, the segregation of Kahana allows for Kiyoshi to articulate the village's demographics in more precise detail: "There were many different races in Pepelau, but Kahana had about one hundred Japanese families, about two hundred Filipino men, about seven Portuguese and Spanish families, and only two *haoles*. Mr. Boyle was the principal of the Kahana Grade School, and Mr. Nelson was the overseer of Kahana. There'd been many Chinese workers before, but they left and opened stores in Pepelau" (28). Moreover, Kiyoshi frames the plantation village as a suffocating place where personal space is unheard of. As the family moves from Pepelau to Kahana, he must become accustomed to a lack of privacy, hygiene, and other "luxuries" to which he had become accustomed in Pepelau. Toilet paper, private outhouses, and paved roads free from rocks and dust are not readily available in Kahana. This sense

[33] While these sites are fictionalized, they draw inspiration from real places in West Maui, including the Pioneer Mill Company and Lahaina.

of stagnation is compounded by the family's move to No. 173, "the last house on 'Pig Pen Avenue' and next to the pigpens and ditch" (29). Pig Pen Avenue takes its name from the pigpens lining the concrete irrigation ditch around the lower boundary of the camp, and this same ditch is responsible for transporting waste from the outhouses to the edges of the plantation camp. Although irrigation ostensibly benefits the entire community, the placement of this ditch generates a number of competing affects for the residents of Kahana by distributing waste according to race and class. That is, the embodied experience of plantation life is augmented by the proximity of their home to the concrete irrigation ditch at the lower end of the plantation, which serves as a repository for waste from the outhouses and pigpens. When the family's senses are not being assaulted by the odor of the outhouses, the scent of manure pervades their everyday routines: "when the wind stopped blowing or when the warm kona wind blew from the south, our house smelled like both an outhouse and a pigpen" (29).

Kiyoshi's migrations between Pepelau and Kahana are ultimately dictated by his family's reliance on the plantation system to pay off their debts—debts that had initially been incurred by the exploitative contracts that brought Japanese laborers to the plantation. Pepelau and Kahana are framed as opposites, perhaps an extension of the binary logic of Japanese-American that is deployed in readings of the novella as an interrogation of assimilation. Although the two communities might occupy the same ahupua'a, their differing access to resources is noticeable in Kiyoshi's descriptions of the two towns:

> Once you got back down to the sea the road followed the shoreline. The cane fields came down to the tar road, and on the other side of the road was the narrow strip of sand and the ocean. The island was a mountaintop, and the land sloped from the shore for about five miles to the foot of the bluish-green mountains. Sugar cane covered the entire slope, and the plantation spotted camps like Kahana in the light

> green fields to farm the fields around them. Kahana sat on the northern slope and it caught a lot of wind and rain. Things grew wild in Kahana, whereas there wasn't enough water in Pepelau even for a home garden. (20)

Kiyoshi's depiction of island topography brings into focus the distinction between windward and leeward shores as well as lower and higher elevations; situating the plantation on the slopes of the mountain ensures that the plantation has access to water, even if it means exposing the laborers to the wind and rain. The pyramidal scheme that shapes Kahana's population is likewise replicated here, albeit in terms of access to natural resources, with Pepelau receiving little to no water. The distinction between Pepelau and Kahana is further registered in the built environment, with the macadamized or "government" road ending "in front of Mr. Nelson's big yard" while the rest of the plantation roads remained unpaved (29). Here, environmental and governmental forces align to ensure that laborers remain on the plantation focused on their own work.

Despite the wildness of Kahana, Murayama illustrates the standardization of the plantation, highlighting the efficiency afforded by its rigid schedule designed to exploit workers and leave them unable to pursue alternative avenues for financial security:

> The dust hangs in reddish clouds all around us. We are drenched, our denim pants cling to our wet legs, sweat trickles down faces and necks and moistens palms and backs of hands. We wipe continually, hands on pants, shirt sleeves over eyebrows, blue handkerchief around network. You wear a broad straw hat against the sun, you hold your breath and try to breathe the less dusty air in gasps, you tie the bottom of your pants legs to keep the dust and centipedes out, you stop and clean your nostrils of chocolate dust with the blue handkerchief wet from wiping your neck. Life is fifteen minutes for breakfast, thirty minutes for lunch, *pau hana* at 2:30. (39)

Here, the plantation system dictates not only the embodied experience of the workers through repeated exposure to environmental matter, but also manages them through the strict regulation of time. Life is not measured in how much work has been accomplished, but rather the "waiting for Sundays, the County Fair in October when you got a day off, Christmas when there was a program at the language school Methodist Church" (39). The schedule of plantation life is so regimented that Kiyoshi does not even need to look at his watch to know what time it is when asked by his contract: "I don't have to look at my dollar onion watch, '11:10'" (40). The precision with which Kiyoshi narrates his experience of time in Kahana drastically differs from the hours spent playing with Makot. As Takaki notes, plantation laborers were "thrust into a process of modern agricultural production, plantation sirens awakening them in the morning and sending them to bed at night" (*Pau Hana* 179). This regimentation is responsible for the development of a plantation consciousness, an identity formulated "in relationship to the process of production" (*Pau Hana* 179). Murayama thus makes legible the way in which the plantation not only treats their laborers as less than human, but does so in a systematic way designed to improve efficiency while lowering costs. What is ultimately left out of this equation is the care and empathy that dictate the reciprocity that previously characterized social and environmental relationships in Hawai'i. While this shared experience of labor would later form the foundation for labor organizing movements, the novel figures it as an isolating force, one that renders the thought of striking or retaliation unthinkable alongside the laborer's exhaustion.

Kiyoshi's teacher, Snook, is framed as a comical character whose communist ideals are dismissed by Kiyoshi and his classmates when faced with the prospect of making money at the expense of interethnic labor relations. He attributes their complicity to their inculcation with plantation values: "No wonder you're like stone. Too much pecking order makes for timid individuals. What do you want to be in life? A pecker in the pecking order? A cog in the machine?

An eternal yes man?" (33). Snook's lesson casts the plantation system as a feudal system that "divides and rules," but that characterization is troubled by several students who are firstborn, individuals who benefit from the pecking order (33). In a Japanese context, being a firstborn son not only means that they are responsible for their family's wellbeing but also the primary inheritors of the family's wealth. Kiyoshi jokingly suggests that "freedom means being a plantation boss" (34). Freedom, in this context, is not figured as being free from one's parents but rather from the rigid control over life that the plantation exerts. The scene offers an education to the outsider coming in to impart knowledge, but simultaneously reveals the imaginative constraints of life on the plantation. Mr. Snook's status as an outsider is not only reflected in his progressive politics but also his location outside of the plantation as a boarder at Matsuda Hotel in Pepelau with the means to travel by car, albeit a jalopy, to Kahana. His pupils, whose livelihoods are dictated by the plantation, cannot imagine any other system; even as Hawai'i has been sutured to the US through economic and political means, its residents are psychically removed from the experiences of mainlanders like Snook.

The move to Kahana also signals a mental change in the family—from hope for a future free from debt to resignation to past obligations. As the family patriarch Isao Oyama muses upon the calmness of the sea, where he formerly made his living despite several incidents that push the family further into debt, his wife, Sawa, notes that his entrepreneurship is "the story of the past" and that they have "to think of the debt from now on" (43). If the return to the plantation signals the family's entrapment in a cycle of debt, then Kiyoshi's winning hand in the game of craps frees them from that cycle. Tara Fickle identifies the novella's primary concern as the struggle between Toshio, the eldest son, and his family's $6,000 debt that has accumulated over generations. Fickle notes that Toshio is "required to surrender not just his educational aspirations and then his wages, but as the novella's title implies, his very body to the voracious demands of his familial and national

obligations" (748). Read in this light, the novella follows the logic of other internment-era works that highlight the breakdown of familial relations after the onset of WWII: joining the military provides *nisei* men the opportunity to reclaim their bodies from the expectations and burdens of the *issei* while satisfying those debts in the same process, even as the Japanese community in Hawai'i was not subject to the same exclusionary laws as the West Coast given the centrality of Japanese labor to the functioning of Hawai'i as a US military installation in the Pacific. In her reading of the novella's illustration of game theory, Fickle attends to the novella's emphasis on "sportive play" (748)—boxing—to demonstrate how Murayama draws links between familial and national obligations. For Fickle, "enlisting allows Kiyoshi to reclaim his body for himself—though he remains seemingly unaware of the irony that he can only do so by offering that body up as a sacrifice to an equally oppressive set of national ideals" (749). Choosing to participate in the military at the end of the novella—the means by which he wins enough money to pay off his family's debts—comes with the expectation that he will be granted full rights and citizenship in the nation. In trading fighting games for war games, Kiyoshi believes that "once you fought, you earned the right to complain and participate, you earned a right to a future" (98). Here, the opposition is not between parent and child, but rather the cyclical violence of the plantation system—with the plantation serving as the most stable site of employment—and the potential for a self-determined future.

In *All I Asking*, the familial debt is framed as a "model story of filial piety, which mother told over and over" (27) with Mr. Oyama sacrificing his monthly salary to his father for twelve years. This story is told over the course of a single page, leaving readers with a sense of the Oyama patriarchs as passive bystanders in the bankruptcy of the family. If the family's debt is figured as a psychological burden that constrains Kiyoshi's aspirations, then the debt takes on another character in the novella's follow-up, a prequel documenting the Oyama matriarch's journey from Kyushu to Maui. Although its title draws inspiration from a Buddhist saying that highlights the payoff of hard

work, *Five Years on a Rock* might also be read in another manner—as a tale of imprisonment on a desolate island. The latter contrasts the image of Hawai'i that has taken root in contemporary discourse that markets the islands as a paradise for touristic consumption, a place psychologically and physically removed from the stresses of a fast-paced capitalist society. *Five Years* exonerates the choices made by Kiyoshi's parents in *All I Asking* by rehearsing the breakdown of familial relations, the performance of defiant acts of self-preservation and self-interest that differentiate Kiyoshi's parents from his grandparents. Indeed, his mother's move to Hawai'i brings into focus alternative forms of relationality between husband and wife, parent and child, as well as individual and community.

I read *All I Asking* alongside *Five Years*, a prequel published nineteen years after *All I Asking*, in order to trace the longer genealogy of the $6,000 debt that haunts Kiyoshi, his parents, and his siblings. Narrated from the perspective of Sawa, Kiyoshi's mother, the novella distributes the fault that Elaine Kim attributes to an outmoded Japanese system of "authoritarianism and tyranny" in her reading of *All I Asking* as representative of the nisei experience (*Asian* 143). I want to suggest that such critiques underestimate the role of the plantation system in augmenting the relationship between parent and child and by inculcating plantation workers with a warped sense of debt and self-interest. Kim, for instance, identifies the parent-child relationship as a form of the Japanese feudal system, noting how Toshio's characterizations of his father as a samurai replicate the physical and financial exploitation of the Japanese working class. Cast in these terms, the novella assumes the quality of the paradigmatic struggle to assimilate—to leave behind one's Japanese heritage and embrace their status as American citizens capable of exercising choices that are more focused on the self rather than the community (or, in this case, the family). Kim suggests that Kiyoshi, unlike Toshio, finds freedom in joining the military where he is able to "earn the right to complain and participate" (*Asian* 98). While paying off familial debts might be viewed as a precursor to the

independent freedoms associated with US national identity, the financial logic underpinning the novella and its prequel are unmistakably capitalist, thereby situating the plantation as the primary force against which the family and its members operate.

As Balance Chow notes in his review of *Five Years*, "[t]he book also looks like a ledger of bills and debts, though to see it as such would be odd. Almost literally, the dollar sign ($) leaps out of every page to stab at the reader's eye, and the cry for money strikes the dominant chord in a cacophony of mundane life events running terribly out of control" (235-6). In this way, Murayama offers a genealogy of the family's financial ruin that is initially articulated in *All I Asking* but later shown to be a larger structural issue in the prequel. *Five Years* is not only a record of accumulated debt, but also a chronicle of the labors undertaken to pay off that debt and regain mastery of their own livelihoods. Even as the family attempts to extricate themselves from reliance on the extractive elements of the plantation system, their solution requires them to undertake risky entrepreneurial endeavors. In the wake of a financially catastrophic turn of events, the novella becomes structured according to an ever-increasing debt; in each subsequent chapter, the narrator adds up the current tally of the Oyamas' debt until it reaches nearly $6000. After learning about the debts incurred by her husband Isao while recovering at the Kula Sanitorium on the slopes of Haleakalā, Sawa is surprised by how far behind they are in their payments: "[t]he debt was now $200 to Mr. Kanda, $300 charged by Kawai Jiro, $100 of our own bills, then $300 in sundry expenses—Mikami taxi, boarding Toshio and Joji, not to mention $1,000 in obligations and bills father Takao had left us" (91). Although Sawa had momentarily begun to feel healthy again prior to the inadvertent destruction of Isao's fishing boat, that unfortunate event counters any improvement in her wellbeing and the family's financial situation.

Indebtedness not only requires the family to take on additional debt to pay off their current obligations but also to reproduce in order to increase their earning potential. With each passing

year, the services provided by the plantation become increasingly more expensive. Though "medical care used to be free on the plantation," it eventually becomes "$5, and the birth [of a child], $50" (92). The imposition of fees on health and reproductive practices that benefit the plantation economy with the production of an able-bodied workforce highlights the way in which the system penalizes plantation laborers for performing their roles, whether it be working on the fields or caring for families. Pregnant with Kiyoshi, Sawa must decide whether to follow the white doctor's advice to abort the baby or endanger her own life. Notably, she describes this decision in terms of self-worth: "But I'd be worthless if I could have only two children" (92). While this might simply be a reflection of cultural and social values of early twentieth century immigrant communities, I suggest that Sawa's exclamation reflects her value in the plantation hierarchy as part of infrastructures of flesh—bodies valued by the plantation for their (re)productive potential rather than their individual subjectivity. With the birth of additional children, the family home transforms into a "nursery" (102), highlighting the transformation of the domestic space into one dedicated to familial care that is intended to replenish the plantation's labor supply. In this context, Sawa's offspring are framed less as innocent children than as another source of labor who must be inculcated with the same values as their parents. Ironically, the implementation of financial barriers to reproduction further impoverishes the family while sustaining the economic health of the plantation. Thus, while Kiyoshi's efforts to pay a debt accumulated over multiple generations might be read as an attempt to break free from the "tyranny" of Japanese American culture, it is important to attend to the ways in which the plantation exploits cultural values to its own ends. Intergenerational conflict between parent and child—a dynamic that reverberates throughout both novellas—is made to serve plantation interests.

From an infrastructural perspective, Murayama's novellas highlight several aspects of the plantation experience. Larkin suggests that infrastructure is responsible for generating the ambient

experience of everyday life and is primarily registered on a surface level. In this case, we see how Kiyoshi and his family experience the scents associated with living on Pigpen Avenue—named for the pigpens kept around the concrete irrigation ditch tasked with transporting human and animal waste away from the camp. That Pigpen Avenue is figured as one of the least desirable places to live on the plantation speaks to the way in which resources and pollution are distributed unequally across the plantation based on one's racial and socioeconomic standing in the plantation hierarchy. However, the experience of infrastructure is not fixed but mutable depending on one's positioning, as evidenced by differences between Kiyoshi and Sawa's experiences of the plantation. Additionally, plantation infrastructure, which has been framed as the single greatest engineering accomplishment in the Hawaiian islands, concentrates wealth in white communities. In this case, we see how the plantation manager—an absent figure with whom the protagonists of Murayama's novel never interact—remains far removed from the abject poverty that impels the Oyamas to raise pigs, sell tofu, fish in unsafe waters, and labor on the plantation. While some of these endeavors are explicitly linked to large irrigation projects and the transportation of water from windward to leeward shores, others speak to the economies that spring up around infrastructure. Selling tofu, for instance, emerges as a prime economic opportunity in the wake of irrigation construction and maintenance, as the family supplies laborers, who must set up camps in remote parts of the mountain and pack ample food in advance.

Even as *All I Asking* has been conventionally read as a bildungsroman, it is important to recognize how the novel's three parts can be interpreted as both forms of growth (aging, changing values) and stagnation (debt, shuffling between imperialisms). This stagnation is shown to be cyclical in *Five Years*, redirecting our attention from intergenerational and intercultural conflict to the administrative, financial, and technical mechanisms of the plantation, which capitalize on Japanese notions of familial debt to keep their laborers financially indebted. In both works, the logic of debt

imperialism that allowed for white infringement on Hawaiian sovereignty is rearticulated in personal terms, with the economic constraints of the plantation intersecting with Japanese conceptions of self and family (e.g. family first). The economic and environmental forces that contributed to the overthrow of the Hawaiian monarchy also work to unmake the laborers, to bind them to the control of the plantation and the perpetuation of plantation interests. And, infrastructure, that which is shaped by and gives shape to the built environment, is one of the primary means by which the plantation accomplishes this, shaping conditions of labor and dictating imagined futures.

Unbuilding the Legacy of the Plantation

In Haunani-Kay Trask's poem "Waikiki," the speaker considers the irony underlying Western narratives of progress imbedded in infrastructural development: "Waikiki: exemplar / of Western ingenuity / standing guard against / the sex life / of savages" (*Light* 61). Condemning urban development spurred by the burgeoning tourist industry in Hawai'i that has transformed Waikiki from "home / of ali'i [chiefs]" to the "sewer center / of Hawai'i," the speaker highlights the negative implications of the "gifts of industrial culture" that have polluted Hawaiian waters, introduced infectious diseases, and reshaped Indigenous lifeways in barbarous ways (*Light* 60). Enfolded in this critique of US settler colonialism and imperialist expansion is the long history of religious, environmental, and political conversion of the Hawaiian islands from independent kingdom to emblem of US liberal multiculturalism—an idea that has repeatedly located the Hawaiian islands as a site for racial enlightenment in an increasingly polarized social and political landscape. In Trask's poem, water is deployed in two contrasting motifs: as the flushing "5 gallon / toilets flushing / away tourist waste / into our waters" and as the "careful *taro* / gardens" of Kanaka 'Ōiwi communities (*Light* 61). Significantly, these motifs are inextricably linked: plantation-era water infrastructure persists to this day, continuing to shape the way in which visitors and locals

alike interact with the built environment of Hawai'i, whether it be from the glistening high-rises that surround the Hawai'i Convention Center or the lush golf courses and resorts that have sprung up around 'Ewa Beach.

Trask's poem alludes to a solution to the problems engendered by the plantation and its infrastructure: a return to Indigenous practices—"careful *taro* / gardens"—linked to cultural resurgence and environmental restoration. Yet, recent efforts to restore the Waiāhole Stream in the Ko'olau Range on O'ahu highlights the structural impediments to ecological rehabilitation, with water rights tied up in long-term leases to American Factors and its subsidiary the Waiāhole Irrigation Company. With the closure of the Oahu Sugar Company in 1994, watershed restoration became a possibility, but contracts between landowners and lessees allowed the former to withdraw lands from agricultural enterprises for urban development. The restoration of the watershed thus ensnared local and native activists in a double bind: relinquish demands for ecological rehabilitation to ensure the execution of the leases or petition for water to be restored to the Waiāhole Valley and spur further urban development in Honolulu. Such urban development would further exacerbate a growing affordable housing crisis with racial undertones; while Native Hawaiians might be further displaced from ancestral lands, Asian and white settlers could increase their economic and political control over the islands by continuing to market a touristic vision of the islands. Decolonizing Hawai'i might thus begin with the dismantling of plantation infrastructures that continue to support territorial occupation by the US. But in advocating for the generation of new industries and, by extension, sustainable development, efforts to restore relationships between people and places in Hawai'i according to the principles of aloha 'āina cannot rely on the same infrastructural systems of unequal resource distribution—whether these be administrative, financial, or technical.

For the Asian American majority, a shift from building to unbuilding provides an opportunity to reflect on the shared oppression of Indigenous and ethnic communities under white

supremacy. The discovery of Honouliuli Internment Camp, for instance, brings into the focus the ways in which plantation infrastructure might be recuperated for alternative means—not the privileging of specific places and populations for (re)production but rather the recuperation of histories of disenfranchisement and dislocation. Volunteers from the Japanese Cultural Center of Hawai'i rediscovered the site of Honouliuli in 2002 by following the remnants of an aqueduct that had been used to separate prisoners of war from internees. Monsanto, the agricultural corporation associated with genetically modified seeds, donated the land on which Honouliuli was located to the National Park Service for historic preservation. Although the site remains closed to the public at the time of writing, its history of rediscovery and ownership speaks to the nexus of agricultural finance and war that dictated the experiences of Asian contract laborers and their descendants. Rather than building upon the existing remains of plantation-era infrastructure, thereby naturalizing ideologies of the plantation in the built environment, I suggest that we reinvestigate the stories emerging from the ruined and renewed structures crisscrossing Hawai'i's landscapes, whether they be contained in institutional and literary archives or repertoires of cultural memory. Like the volunteers from the Japanese Cultural Center of Hawai'i, we need to use the remnants of the plantation to interrogate investments in imperialist formations, thereby dispelling the illusion of equality that continues to pervade Hawai'i.

Reproducing Flesh and Labor in Asian/American Speculative Fiction
Chapter Three

In a November 11, 2020 article published in *New Scientist*, Richard Webb, executive editor of the London-based science and technology magazine, posed a question that has dogged demographers, environmental activists, and governmental agencies since the beginning of the Cold War: are there too many people on the planet? Webb's exploration of "The Population Debate" (2020) in light of the ongoing COVID-19 pandemic brings into focus the popular association of overpopulation with natural resource scarcity—an oft-repeated equation that might seem like common sense for a generation negotiating the effects of food insecurity, pollution, species loss, and zoonotic spillover in the wake of global climate change.[34] Yet, scholars at the intersection of environmental, feminist, and science and technology studies have pushed back against the assumption that exponential growth of populations have contributed to natural resource scarcity; instead, they identify overconsumption of polluting and wasteful products as the primary reason behind climate change and its environmental impact (Satterthwaite; Sasser). In shifting attention from population to consumption, these scholars highlight the racialized and gendered dimensions of population control, noting how the perceived fertility of nonwhite, poor bodies has historically been understood in terms of unsustainable excess. This critical reorientation in population studies takes into account what Betsy Hartmann identifies as the "push factors" which impel individuals in the Global South to enact environmental modifications that, on the surface, might seem at odds with principles of sustainability but are actually less harmful than the corporate industries that have contributed to deforestation, pollution, and soil erosion (118-9).

[34] This line of thought can be traced to Thomas Malthus, an eighteenth-century British economist whose writings suggested that population growth was dependent on food supply. So-called neo-Malthusians have adopted Malthus' propositions as the basis for population control, including contraceptives, as a means to combat a perceived link between population growth and environmental decline.

A trio of Asian/American literary and cinematic works from the last two decades register the imagined consequences of overpopulation and overconsumption by presenting dystopian futures wrought by environmental and manmade catastrophes: Margaret Atwood's novel *Oryx and Crake* (2003), Chang-rae Lee's novel *On Such a Full Sea* (2014), and Bong Joon-Ho's film *Okja* (2017).[35] These works bring together anxieties over dwindling natural resources, overpopulation, and technological advancement, drawing into relation the intimacies between sustainable food sources, human labor supply, and biotechnological development.[36] Each imagines a world populated by drone-like humans who not only cultivate food in a high-tech, ecologically damaged world but also replicate themselves to form a stable labor supply. In these bioscientific worlds, the development of biotechnologies ranging from genetic modification to serial therapies are figured as logical responses to environmental crises: hybrid creatures and expensive medical treatments might solve global food shortages while preventing species loss through the reduction of greenhouse gas emissions. These works collectively voice concerns over the intimacies between the biomedical and food industries, reflecting Nikolas Rose's characterization of the laboratory and factory as inherently interlinked (31). More interestingly, they highlight the enrollment of Asian affective and physical labor in emerging biotechnological industries predicated on the reproduction of flesh (food and labor), showing how the accumulation of wealth is predicated on the racial differentiation of global populations and the exploitation of bodily capacities as biocapitalist resources.

Speculative fiction is particularly suited for the study of infrastructure given its emphasis on future-telling and world-building. An infrastructural project is, at its core, a form of speculative

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[35] I adopt David Palumbo-Liu's use of "Asian/American" to account for the multiple crossings that take place in these works, which do not necessarily fall under the rubric prescribed by essentialist conceptions of Asian American literature that rely on race and ethnicity as the precursor for cultural authority.

[36] The rapid advancement of technology has also meant that a central issue in renewed debates over population has been genetic modification, which, according to Heather Houser, "entered environmentalism through consideration of whether feeding the world's growing population requires widespread use of genetically altered seeds, plants and other organisms" (8-9).

fiction stemming from unrealized ideas about how the environment might be transformed should the venture be completed. As an emblem of corporate and national aspirations, infrastructure is intimately linked to the speculative genre, a scheme dependent on speculative finance whose benefits can only be realized in the future. Yet, infrastructure can be a particularly precarious enterprise given the financial risks associated with its construction, its tendency to fall into disrepair and require more money than was initially invested to account for delays and unforeseen costs.[37] These projects can thus generate feelings of despair as once aspirational monoliths sit empty, remain partially constructed, or adjacent systems around which the infrastructure has developed remain incomplete.

As we have seen in previous chapters, infrastructure is a particularly useful way for thinking about how governments view their population, whether they are deemed worthy of reproduction based on the quality and consistency of the resources conveyed by the infrastructures that underlie modern society—energy, transport, water, waste. In other words, an attention to infrastructure highlights the environmental processes, material connections, and political ecologies that link people and places as well as illuminates the hidden categorizations by which local and national governments differentiate between populations. While infrastructure has traditionally been associated with heroic national projects in the US, the speculative works with which I engage in this chapter suggest that infrastructure is no longer tied to specific national aspirations or geographies, but is rather linked to global corporations that increasingly exceed the imaginative and legal constraints of national boundaries. What differentiates corporate infrastructures from national infrastructures are not only their intended recipients (consumers rather than constituents) but also the speed and efficiency by which structures can be erected when unmoored from political constraints. These corporations strive to replenish the world's supply of flesh—both food and labor—having exhausted the planet's

[37] It should be noted that there is a huge amount of infrastructure across Europe and Asia that is well-maintained and works well, from basic sanitation to systems of public transportation. In many countries, the problem is the absence of infrastructure to meet basic needs.

natural resources and capacity to cultivate food through traditional agricultural practices. In these futures, corporations are poised to or have already overtaken the nation as the world's dominant organizational structure, dividing the population according to race, gender, and class in pursuit of maximum efficiency and profit. These works rehearse what Jodi Melamed identifies as "the hyperextraction of surplus value from racialized bodies" (1), a process which historically has favored the Global North. In the absence of international regulatory bodies, this extraction can continue unimpeded, widening the divide between the privileged and the oppressed.

In classifying these works as speculative fiction, I am purposefully alluding to their indebtedness to the financial logic of speculation. More precisely, these works attune us to what Laura Hyun Yi Kang calls the appendage of "Asian" to "capital in terms of the shifting international political economy of accumulation, debt, and fiscal deficit" (301). Stephen Hong Sohn reminds us that the speculative genre, particularly cyberpunk strains of science fiction, have repeatedly imagined Asiatic figures as affectless beings that bear closer resemblance to robots than humans. Sohn traces the genealogy of this figure across the twentieth century, locating its origin in turn-of-the-century images of the yellow peril, "an overtly racist representation predicated on the danger it represents to the West's economic and military primacy" (7). In speculative fiction, such racial anxieties are projected into the future, where the threat of Asian dominance has become reality rather than one of several possibilities. Such works might thus be classified as techno-Orientalist, what David Roh, Betsy Huang, and Greta Niu define as "the phenomenon of imagining Asia and Asians in hypo- or hypertechnological terms in cultural productions and political discourse" (2). Roh, Huang, and Niu suggest that these representations emerge from neoliberal trade policies that have increased the circulation of people, products, and data across the Pacific. For Atwood, Bong, and Lee, anxieties about the decline of the US have been reactivated by the rise of China as a global superpower in the wake of WWII. But whereas earlier fictions might have lingered over China's burgeoning

population and its potential for limitless human resources, these literary and cinematic visions take aim at the environmental effects of rapid industrialization and the consumptive practices that privilege the self over the other, the local over the global. In these worlds, thriving hubs of production and consumption have been rendered inhabitable, necessitating the development of new food and labor supplies.

Techno-Orientalism is fundamentally linked to conceptions of population, as ideas of economic and military superiority are linked to the growing population of Asia, which contrasts declining reproductive rates in North America. It is not surprising, then, that the coolie, whose "biologically impossible body" registers "the possibility of a new human era marked specifically by Chineseness" (Hayot 103), re-emerges in these narratives in divergent but linked ways. While Atwood, Bong, and Lee imagine futures where coolie-like figures are shown to be ideal workers valued for their affective and physical labor, their works remain grounded in histories of racial violence stemming from colonial and imperial endeavors in the twentieth century that sought to control non-white populations in the Third World. As a result, race remains a central aspect of these narratives, where machines of extraction and accumulation transform the Asiatic figure into an integral component of flesh production.

Even as these texts draw from techno-Orientalist tropes in rendering the shuttling of people and capital between Asia and North America, they play on representations of Asiatic figures as cold and unfeeling. Sohn notes how "techno-Orientalism might suggest a different conception of the East, except for the fact that the very inhuman qualities projected onto Asian bodies create a dissonance with these alternative temporalities. Even as these Aliens/Asians conduct themselves with superb technological efficiency and capitalist expertise, their affectual absence resonates as an undeveloped or, worse still, a retrograde humanism" (8). All three texts play with the assumption that an inscrutable figure, at least by Western standards, must lack psychological depth. Yet, these

figures are repeatedly recruited into care work, negotiating the negative feelings that come with living in neoliberal or dystopian futures. All three texts also feature an Asian woman, whether it be the teenage Fan in *On Such a Full Sea*, the sex worker and pharmaceutical saleswoman Oryx in *Oryx and Crake*, or the orphaned girl Mija in *Okja*. And all three texts linger over the appearance of their heroine, using representations of the Asian female body as a reflection of pervasive economic ideologies that are entangled with race. Sharon Tran argues that cuteness, as it is deployed in representations of the Asian girl who represents intersecting forms of Asian racialization, operates as "a vehicle of affective transmission, openness, and connection" (104). Moreover, these works extend Kathryn Cai's consideration of "gendered affective care as a logic and technology of embodied resource extraction that underlies changing configurations of state policy and technoscientific developments" (157). As she suggests, "female Asiatic bodies make visible the historic continuities and future possibilities for capitalist exploitation to proliferate in ever more efficient ways and, in doing so, expand definitions of 'biocapital' to broadly consider the links between diverse forms of embodied resource extraction for profit" (157).

My reading of the three literary and cinematic works takes into consideration the bioscientific worlds imagined by Atwood, Bong, and Lee as well as the migration of the Asiatic figure through these imagined territories. I begin with an assessment of *Oryx and Crake*, which most clearly engages with the dynamics outlined here. Drawing inspiration from Paul Erhlich's concept of the population bomb, the belief that overpopulation would result in worldwide famine in the 1970s and 1980s, Atwood imagines a biomedical treatment that enhances sexual experiences but sterilizes its users to curb population growth. The intended but unknown side effects of the drug induce a global pandemic that wipes out the majority of humanity. Building on Atwood's consideration of population control, I turn to more explicitly Asian and Asian American imaginings of global environmental catastrophe, thinking about how Asian forms of labor, care, and kinship

augment the dynamics that undergird ideas of sustainability. I continue with a reading of *Okja* that interrogates the rhetoric of sustainability that pervades contemporary debates over water and energy scarcity, showing how sustainability, when hijacked by global corporations, deepens existing inequities between marginalized populations. Finally, I turn to *On Such a Full Sea* to consider how flesh production has been mobilized in service of corporate entities in the wake of environmental ruin caused by overpopulation and, by extension, overconsumption.

Oryx and Crake: Selling the Apocalypse

Margaret Atwood's dystopian novel *Oryx and Crake* (2003) imagines a future where the intimacies between biotechnology and capitalism have created the conditions for the creation of increasingly monstrous beings blurring the line between human and animal. Specifically, market-driven scientific research has transformed traditional food systems, moving production from valuable land into corporate-run laboratories responsible for solving the world's environmental and health crises with technical solutions. In this bioscientific world, corporations like HelthWyzer, OrganInc Farms, and RejoovenEssence design new forms of life—what Atwood terms "bioforms"—without governmental oversight or resistance. Through flashbacks readers learn how Jimmy, the son of scientists working for biotechnology corporations, came to be regarded as Snowman, one of the few human survivors of a global pandemic induced by BlyssPluss, a sex-enhancing drug created by Jimmy's friend Glenn, otherwise known as Crake.[38] In the post-apocalyptic present, Snowman must navigate from his seaside residence with the Children of Crake, genetically modified human-animal hybrids thriving in the absence of mankind, to the ruins of the RejoovenEssence compound to recover essential supplies. As he traverses familiar territory to the

[38] To differentiate between past and present, I use "Jimmy" to refer to the pre-apocalyptic past and "Snowman" to refer to the post-apocalyptic present.

compound where he once worked, he reminisces about his relationship with his parents, Crake, and the mysterious woman known only by the moniker Oryx.

Prior to the mass death caused by BlyssPluss, corporations had supplanted national entities as the dominant economic and social force, with the scientific elite living and working in compounds removed from the pollution, resource scarcity, and violence characterizing the pleeblands, the derogatory name given to the world's cities by corporate workers. Jimmy's experience of the pleeblands is largely dictated by the images promulgated in the media: "endless billboards and neon signs and stretches of buildings, tall and short; endless dingy-looking streets, countless vehicles of all kinds, some of them with clouds of smoke coming out the back; thousands of people, hurrying, cheering, rioting" (27). Living in a compound awash with "brilliant genes" (174) rather than one of the outlying neighborhoods, reduces the risk of exposure to this biologically and morally corrupted world by eliminating the need to ride exclusive high-speed bullet trains through sterile transit corridors. Although Jimmy's mother decries the compounds as "all artificial," his father lauds the community's "foolproof procedures" that allow for everyone to "walk around without fear" (27). As his father notes, outside of the compound's walls, "there were people cruising around in those places who could forge anything and who might be anybody, not to mention the loose change—the addicts, the muggers, the paupers, the crazies" (27). The sense of security provided by the compounds is both psychological and physiological: this live-work arrangement not only ensures that workers can fully develop their mental faculties in pursuit of scientific innovation and, by extension, intellectual property rights, but also that workers remain inoculated from the hostile bioforms (viruses and bacteria) running rampant amongst the general population. Such beliefs are enfolded in "accepted wisdom in the Compounds," which dictates that "nothing of interest went on in the pleeblands, apart from buying and selling: there was no life of the mind" (196). Significantly, Jimmy's father highlights the extent to which neoliberal practices have dismantled governmental

power in framing "the other side" not as the pleeblands but as other corporations: "The other side, or the other sides; it wasn't just one other side you had to watch out for. Other companies, other countries, various factions and plotters" (27).

When Jimmy and Crake visit the pleeblands as adults, they take precaution to inoculate themselves against the environmental and health threats posed by the city: "Crake had stuck a needle in Jimmy's arm—an all-purpose, short-term vaccine he'd cooked himself. The pleeblands, he said, were a giant Petri dish: a lot of guck and contagious plasm got spread around there" (287). Because they had grown up in the compounds, they were "a feast" for bioforms. Crake also provides Jimmy with nose cones "to filter microbes but also to skim out particulate. The air was worse in the pleeblands, he said. More junk blowing in the wind, fewer whirlpool purifying towers dotted around" (287). Even as Crake recognizes the dangers posed by the pleeblands in growing up in a secure compound, his characterization of the pleeblands casts the population as a scientific experiment for the enrichment of the compounds: they are a Petri dish in which tests can be carried out without oversight.

At OrganInc Farms, the biomedical corporation for which Jimmy's parents initially work, the pigoon or *sus multiorganifer* is the primary project. As its official name implies, pigoons are designed to grow human organs that would "transplant smoothly and avoid rejection, but would also be able to fend off attacks by opportunistic microbes and viruses, of which there were more strains every year" (22). To mitigate concerns over the implications of animals inserted with human genetic material, OrganInc advertisements place emphasis on "the efficacy and comparative health benefits of the pigoon procedure" and assert that "none of the defunct pigoons ended up as bacon and sausages" (23). Yet, despite OrganInc's efforts to reaffirm the boundaries between species, Jimmy notices "how often back bacon and ham sandwiches and pork pies turned upon the staff café menu" (24). Although Jimmy initially describes his encounters in "cute" terms, he changes his

opinion when he is attacked by feral pigoons while searching the ruins of the RejoovenEssence compound for food in the novel's post-apocalyptic present. Pigoons represent the pinnacle of market-driven scientific research, the union of capitalist and scientific forces in pursuit of efficient and profitable ways of negotiating increasing health disparities caused by environmental ruin: they can serve as both sustenance and treatment.

When Jimmy's father accepts a position at NooSkins, a subsidiary of HelthWyzer, Jimmy's life is transformed as his mother absconds with his pet rakunk, Killer, and he becomes friends with Glenn, later known as the Crake. Although the two are unaware of it at the time, HelthWyzer has created a market for its product by deliberately infecting pleebs, residents of the pleeblands, with virus-laden vitamin pills:

> They put the hostile bioforms in their vitamin pills—their HelthWyzer over-the-counter premium brand, you know. They have a really elegant delivery system—they embed a virus inside a carrier bacterium, E. coli splice, doesn't get digested, bursts in the pylorus, and bingo! Random insertion, of course, and they don't have to keep on doing it—if they did they'd get caught, because even in the pleeblands they've got guys who could figure it out. But once you've got a hostile bioform started in the pleeb population, the way people slosh around out there it more or less runs itself. Naturally they develop the antidotes at the same time as they're customizing the bugs, but they hold those in reserve, they practice the economics of scarcity, so they're guaranteed high profits. (211)

Although Crake mentions the presence of scientists in the pleeblands who might be able to identify the origin of the virus, the absence of governmental regulations makes it impossible to hold HelthWyzer accountable for their products; they are given free rein to infect undesirable populations and prolong their life with therapies intended to treat—not cure—manmade diseases. Prolonging

life, in this instance, allows for the sale of additional products that foster a culture of debt to biomedical companies; "lingering illnesses" are more profitable than wellness (211). Melinda Cooper suggests that "neoliberalism declares war against the whole standardization of life that underlies the very idea of social-state nationalism" (62). In other words, neoliberalism purposefully creates expendable populations through the creation of biotechnologies that produce environmental and health disparities; without social-state nationalism to regulate the market, corporations are free to dictate who gets valuable medical and alimentary resources. HelthWyzer's practices represent neoliberalism run amok, with intense competition between private corporations stimulating the creation of new markets for biotechnological products at the expense of the working poor.

Subsequent bioforms are increasingly more grotesque, further divorced from their "real" counterparts. When Jimmy visits Crake at Watson-Crick Institute, the premier university for science-minded students, the former is introduced to the ChickieNob. While the pigoon largely resembles its namesake, the ChickieNob looks anything but like a chicken: "What [Jimmy and Crake] were looking at was a large bulblike object that seemed to be covered with stippled whitish-yellow skin. Out of it came twenty thick fleshy tubes, and at the end of each tube another bulb was growing" (202). Readers learn that this monstrosity is actually a chicken that has been designed to maximize meat: "Chicken parts. Just the breasts, on this one. They've got ones that specialize in drumsticks too, twelve to a growth unit" (202). The student overseeing the project at Watson-Crick Institute lays out the technical specifications in a nonchalant fashion: "The high growth rate's built in. You get chicken breasts in two weeks—that's a three-week improvement on the most efficient low-light, high-density chicken farming operation so far devised. And the animal-welfare freaks won't be able to say a word, because this thing feels no pain" (203). The ChickieNob thus represents another kind of advancement, one that relies on alienating consumers from their source of food; unlike the pigoon, the ChickieNob bears no resemblance to the creature that gives it its

name, becoming something that is more aesthetically palatable in death than life. Yet, Atwood's framing of the ChickieNob as monstrous overlooks the immeasurable suffering that the agricultural industry inflicts on billions of chickens every years; that is, her representation of the ChickieNob as an aberration forecloses the possibility of finding alternative scientific solutions to the ongoing problem of animal welfare by activating feelings of disgust and horror.

Created in the student-run laboratories at the Watson-Crick Institute where students are rewarded with "half the royalties" (203) of their inventions, this monstrous creature embodies what James Stanescu has called "deading life" or "life completely denaturalized, life as completely produced and constructed" (148). This so-called "deading life" exists to be killed; it is, in his words, "thoroughly fabricated and artificial" (148). Thus, if "deading life" denotes a "sense of life meant as pure production, pure use-value" (151), then the factory farm can be read as a place devoted to the production of corpses—the fabrication of lives that are destined to be part of the fabrication and production of consumable flesh. Whereas scholars have previously likened factory farming to murder and/or genocide, Stanescu differentiates "deading life" from concepts like Achille Mbembe's "living dead" by showing how animals subjected to factory farming are ontologically "already dead" (151). Such concerns are articulated by Jimmy in his horrified response upon viewing the ChickieNob for the first time: "[t]he thing was a nightmare. It was like an animal-protein tuber." He further reflects on how "he couldn't see eating a ChickieNob. It would be like eating a large wart. But as with the tit implants—the good ones—maybe he wouldn't be able to tell the difference" (203). The ChickieNob thus represents what Susan McHugh has called "an industry solution to industrial problems" insofar as the tissue cultures required for genetically modified organisms emerge from the same petri dish as those for biomedicine (195). Yet, the ChickieNob is not immune to its environment, as its creation in the laboratory leaves it susceptible to creatures who have adapted to the world's changing environment: readers learn from an e-bulletin feed

describing the continued collapse of existing and modified species, including the ChickieNob, which has succumbed to a modified form of chickenpox carried by a parasitic wasp.

These temporary fixes to the larger problems of climate change, human violence, and species loss spur Crake to develop a two-pronged initiative to achieve "immortality"—his vision for a more sustainable future. First, Crake has created the BlyssPluss Pill, designed to "eliminate the external causes of death… which is to say misplaced sexual energy" (293). Crake identifies "misplaced sexual energy" as the primary cause for the spread of contagious diseases and overpopulation, which he links to environmental degradation and poor nutrition. Although BlyssPluss is marketed as a pill that will protect against sexually transmitted diseases, provide an unlimited supply of libido and sexual prowess, and prolong youth, it also sterilizes its users. Second, Crake has genetically engineered a humanoid species called the Crakers, or Children of Crake, that prospective parents could purchase and customize according to their needs following their sterilization from BlyssPluss. Despite their outwardly human appearance, the Crakers could not be racist since they did not register skin color; could not form hierarchies due to their lack of specific neural complexes; could not be territorial because they were neither hunters or gatherers; and could not be affected by destructive sexual urges given their mammalian mating practices. These entangled solutions should be understood as the culmination of Crake's ongoing concerns over overpopulation; while the ChickieNobs were designed to solve the problem of resource scarcity, BlyssPluss and the Crakers are intended to do away with the reproductive imperative underlying sexual intercourse. Crake's neo-Malthusian ideology reflects his idea that the planet can longer sustain the populations that exist: "As a species we're in deep trouble, worse than anyone's saying. They're afraid to release the stats because people might just up, but take it from me, we're running out of space-time. Demand for resources has exceeded supply for decades in marginal geopolitical areas, hence the famines and droughts" (295).

In Paradice, the climate-controlled dome housing Crake's classified research for RejoovenEssence, Jimmy views Oryx for the first time: "Like the Crakers she had no clothes on, and like the Crakers she was beautiful, so from a distance she didn't stand out. She wore her long dark hair without ornament, her back was turned, she was surrounded by a group of other people, just part of the scene" (308). Despite her central position in this idyllic tableau, Oryx is not a Craker. Rather, as the only human allowed to interact with the Crakers, Oryx serves as a "go-between, someone who could communicate on their level. Simple concepts, no metaphysics" (309). Oryx's caretaking of the Crakers participates in pastoral nostalgia, in an attempt to recreate an idealized prelapsarian setting. Vegetarian, docile, and endlessly customizable, the Crakers are thus formulated as the response to earlier iterations of genetic hybrids, and their herd-like tendencies are reminiscent of grazing animals like cows and sheep. After all, these creatures are neither hunters nor gatherers but ruminants who consume readily available grass. Crake frames Oryx as an indispensable aspect of the Paradice project thanks to her "great manner" and deems her a "devoted employee" (309-10). Yet, Oryx's employment goes against the accepted compound wisdom that casts residents of the pleeblands as lacking mental capacities; her demeanor and manner render her more suitable to the task of preparing the Crakers for their post-apocalyptic existence than any of the researchers recruited by Crake from MaddAddam, a group of experts who have broken off from the God's Gardeners, a religious sect devoted to honoring plant and animal life.

Jimmy links Oryx to a striking figure he and Crake had witnessed in their adolescence while watching HottTotts, a global child pornography web show, that has left an indelible mark on him. But even that memory is thrown into doubt by Oryx. What little information readers learn about Oryx is primarily filtered through Jimmy's recollections of her ambiguous stories. Crake describes how he met Oryx through Watson-Crick Institute's Student Services, a glorified prostitution service connecting students with sex workers of their choice, by using the same screenshot. Yet, he, too, is

unsure whether she is one and the same: "Not that she was underage, the one they came up with" (310). It is never made explicitly clear whether Oryx is the same girl or simply a lookalike, one of many girls whose identity might be linked to the one featured in the webcast. What little information we know about Oryx comes directly from her in stories told to satisfy Jimmy's curiosity: she grew up in a village surrounded by jungles, fields, or rice paddies, presumably in South or Southeast Asia; she became a child sex slave in an unnamed city after being sold by her mother to a man with a gold wristwatch; and she appeared in pornographic films after being relocated a different city. Whether this information is true or simply the result of Jimmy's obsessive need for her story is never made entirely clear.

While Oryx thinks that the figure in the screenshot could be any number of girls who "did these things" (91), Jimmy insists that Oryx tell him what she was thinking in the image because he needs her to, gesturing to the importance of storytelling in assuaging his attachment to the girl in the photograph. Oryx simply replies that "if [she] ever got the chance, it would not be [her] down on [her] knees" (92). This encounter serves as the point of departure for Oryx's later accounts of her life, which Jimmy interprets in sentimental terms even as Oryx casts the experiences in detached terms. I want to suggest that Oryx's role as caretaker and sex worker draws into relief the need for laborers to manage the affective fallout of capitalism's alienating endeavors. For instance, although Oryx questions whether she has any will (141) in her sexual encounters with Jimmy while narrating her history with Jack, a producer of pornographic films, she quickly stops laughing and adopts a more serious to assuage Jimmy's "pained look" at the suggestion of his complicity in her exploitation. Despite his repeated attempts to make Oryx share her personal history, Jimmy does not "buy" her "whole fucking story. All this sweetness and acceptance and crap" (142). Oryx simply replies with a question: "what is it that you would like to buy instead" (142)? This question not only gestures to the capitalist forces that underlie Oryx's relationship to Crake and Jimmy but

also the circuits of money that make possible her movement from her real or imagined homeland to RejoovenEssence. Although Oryx initiated the relationship with Jimmy, its maintenance is predicated on her capacity to care for Jimmy, situating Oryx as one of the world's affective labor workforce, which Christine Balance identifies as predominantly Asian and Asian American (148). Indeed, Oryx seduces Jimmy because she "didn't want to see [Jimmy] so unhappy" (312).

By contrast, Oryx's relationship with Crake is largely a matter of business. In describing her trips to the sex clinics and whorehouses to distribute samples of BlyssPluss, bypassing the normal mode of clinical trials, Oryx mentions how "she'd brief Crake, provide him with an account of her activities and their success—how many BlyssPluss pills, where she'd placed them, any results so far: an exact account, because he was so obsessive. Then she'd take care of what she called the personal area" (314). Oryx is an exceptional worker because she can serve multiple functions at once: she can transition from providing exact data regarding Crake's business operations to satisfying his sexual needs with ease. Oryx's ability to blur the lines between the professional and the personal can also be linked to her ability to traverse the boundaries between the corporate compounds and the pleeblands. Oryx's flexibility thus aligns with Crake's efforts to improve efficiency in all facets of life.

Oryx repeatedly dismisses Jimmy, who imagines himself as her savior in a stereotypical narrative of trafficking and sex work. Although she casts doubt on the veracity of the backstory he has invented for her, Oryx's interactions with Jimmy expose him to the affective power of storytelling. This exposure has the larger goal of priming Snowman for his role in caretaking the Crakers after BlyssPluss has achieved its goal of drastically reducing the population of humans. But Oryx's narrative intervention is also important insofar as it introduces issues of race into a novel that is otherwise focused on the machinations of the homogenous residents of corporate compounds in North America, whose lived experiences and needs have been defined by containment, routine, and

security. Aside from the live-in Filipina housekeeper who treats Jimmy with more maternal affection than his own mother, there are few, if any, emblems of otherness marked by their attachment to foreign geographies that are fleshed out in some detail. Oryx is a notable exception. The lack of specificity in Oryx's backstory transforms her into a universal figure intended to embody the violence caused by capitalism against the Third World but whose livelihood and salvation depends on her continued work within a system that requires her to capitalize on the products of her physical and affective labor. As J. Brooks Bouson notes, "[t]hat Oryx is vague and evasive about her traumatic past gives her a kind of general representative status as a female sexual victim and commodity in the novel's scheme even as she serves as a virtual and fantasized object of desire for both Jimmy and Crake" (148). Jovian Parry argues that the consumption of Oryx is literally and figuratively linked to the real-fake meat that is being produced in compounds like Paradice, albeit for different purposes: "The Western predilection for (land) animal protein is here strongly linked to the exploitation of the Third World's children by the unseemly appetites of Western men. Oryx seems to draw a pivotal distinction between fish, which she happily eats, and the flesh of farmed land animals, the consumption of which she sees as a particularly Western appetite" (253). Taken together, Bouson and Parry suggest that Oryx's body has been transformed into a commodity due to her positioning as a woman of color. Her vexed national origins mean that she is aligned with other forms of flesh that her Western clients readily consume; that is, her commodified body symbolically aligns her with the pigoon and the ChickieNob. It is no surprise, then, that Oryx can empathize with the Crakers, her experiences as a marginalized figure having prepared her to work with the otherworldly creatures designed in Paradice.

Even as the novel positions care labor as part of capitalist accumulation linked to bioscientific advancement, it also shows how acts of caretaking persist beyond the breakdown of society, suggesting that care is a fundamentally human quality. In her work on affective labor and

biocapital, Kalindi Vora has noted how "[t]he rapid pace at which scientific knowledge of bodily production through cellular and molecular biology and genetics . . . has opened up the human body and subject as a greatly expanded site for annexation, harvest, dispossession, and production" (3). Vora terms such labor "life support" in that emergent technologies, including regenerative medicine, gene therapy, and genetic modification, accomplish what Rose has identified as a drive to "change what it is to be a biological organism, by making it possible to refigure—or hope to refigure—vital processes themselves" (17-8). Vora notes how "contemporary transnational capitalism, like earlier forms of accumulation, has come to rely on the reproduction of life for continued growth and expansion. Human bodies and subjects are thus playing a role structurally similar to that of land and natural resources as they were dispossessed in the period of capitalist growth during European territorial colonialism" (3). While Vora focuses on gestational surrogacy and customer service centers in India to explore this dynamic, *Oryx and Crake* suggests that new forms of affective labor are recruited to help consumers negotiate an increasingly alienating and unfamiliar world. I situate Oryx in this paradigm, performing the work needed to sustain life, whether it be newly developed forms of life or conventional forms of humanity. Yet, this form of care need not be channeled into capitalist relations.

Both Jimmy and Crake seek to frame Oryx through the techno-Orientalist tropes that imagine Asian figures as inhuman agents of capital or helpless victims of an overconsumptive society, but Oryx resists these characterizations by adopting a flexible persona that allows her to adapt to the ever-changing constraints of this society, one that requires her to fulfill multiple roles in pursuit of economic and social mobility. Because the narrative is focalized through Snowman, we never gain access to Oryx's true identity, only the sentimental narrative that she fashions for herself to assuage Jimmy's need for care in a bioscientific world where emotion and feeling are not conducive to science and business. Crake's vision for a more sustainable future predicated on

population control does not take into consideration the stratified experiences of life across the globe, imposing a singular perspective of sustainability on communities that have historically been denied access to the promise of a more equitable future. The regions that experience the earliest effects of the pandemic are those that have already been cast as expendable, as fodder for consumption by consumers, like Jimmy and Crake, in the Global North who seek to exploit the bodies (physical and reproductive labors) and minds (affective and intellectual labors) of those residing in the Global South.

While Oryx's entrance into Paradice lends Crake's enterprise the veneer of liberal multicultural progress, the novel illustrates how neoliberal practices masquerading as benign forms of globalization have detrimental effects on the lives of the marginalized. Indeed, even as Oryx gains access to the resources of Paradice, she peddles death to disadvantaged communities as an agent of RejoovenEssence. Although Oryx is shown to be a crucial aspect of Crake's project, her body is, like the flesh of the pigoon or the ChickieNob, shown to be disposable. Towards the end of the novel, Crake, the exponent of neoliberal capital, murders Oryx presumably after learning of her tryst with Jimmy, thereby transferring care of the Crakers to a fellow white male. Snowman's caretaking relationship to the Crakers in the novel's apocalyptic present suggests that Oryx is ultimately replaceable; that is, his unintended role as caretaker is only made possible because his life has been deemed more valuable than Oryx's. And though Oryx remains present in the novel thanks to her impact on Snowman and his interactions with the Crakers, she remains an unknowable figure whose life's importance must be translated for audiences by an emblem of whiteness.

Okja: The Secret to Great-Tasting Tenderloins (Tenderness)

Financed and distributed by the online streaming platform Netflix, Bong Joon-Ho's *Okja* satirizes multinational corporations that advocate for environmental responsibility while

simultaneously profiting from environmental ruin. Lucy Mirando, CEO of the fictional Mirando Corporation, lays out the film's premise in a glossy product launch at the beginning of the film: twenty-six genetically modified superpiglets will be distributed to farmers across the globe where they will be raised using local knowledge and methods.[39] In ten years, the winning superpig will be unveiled to the public at the Best Superpig Festival in New York City—the culmination of a media campaign designed to make the general public more amenable to eating a genetically modified organism (GMO) and less averse to a former chemical company with a history of environmental degradation.[40] The eponymous superpig—Okja—is crowned the winner of the Best Superpig Contest due to her unparalleled size, beauty, and health. She is forcibly removed from her home in the mountains of South Korea, transported first to Seoul and later to New York City by Mirando's corporate lackeys. Her caretaker and companion, Mija, a 14-year-old girl who lives with her aging grandfather, leaves home to rescue an animal that seems more like family than her human kin. She, like Okja, is an orphan. With the assistance of members of the Animal Liberation Front (ALF), Mija races across the globe to save her friend. Her journey takes her through increasingly horrific sites of physical and representational violence: sterile corporate offices, unhygienic laboratories, and streamlined factory farms. As immigrant factory workers prepare Okja for slaughter, Mija convinces Nancy Mirando, Lucy's cutthroat sister, to spare the superpig in exchange for a gold pig figurine.[41]

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[39] Although superpigs are a fictionalized breed of animals, transgenic pigs are no stranger to controversy. Following in the footsteps of Canada's shuttered EnviroPig project, which aimed to limit phosphorus emissions responsible for species-stifling algae blooms in waterways, researchers at the South China Agricultural University and China Agricultural University have proclaimed their success in creating transgenic pigs designed to minimize their ecological footprint.

[40] The Best Superpig Festival can be read according to Sianne Ngai's interpretation of the gimmick as an aesthetic category: "The gimmick is thus capitalism's most successful aesthetic category but also its biggest embarrassment and structural problem. With its dubious yet attractive promises about the saving of time, the reduction of labor, and the expansion of value, it gives us tantalizing glimpses of a world in which social life will no longer be organized by labor, while indexing one that continuously regenerates the conditions keeping labor's social necessity in place" (*Theory* 2).

[41] To differentiate between the Mirando sisters, I use their first names "Lucy" and "Nancy." Unless otherwise stated, I use "Mirando" or "Mirando Corporation" to refer to the corporate entity that the two sisters lead at various points throughout the film.

The film culminates in an idyllic scene where Okja, Mija, and her grandfather enjoy a vegetarian meal at their remote house, presenting an image of ecological and familial equilibrium.

Okja extends ongoing debates in Asian American literary scholarship over the proliferation of GMOs and their disproportionate effect on people of color.[42] In my reading of *Okja*, I am particularly interested in the commodification of Mija's relationship with Okja, an animal created in the laboratories of Mirando. As I argue, this relationship is ultimately represented as profitable for its affective dimensions despite Mija's inadvertent attempts to sabotage Mirando's public image while rescuing an indispensable member of her family. This debate unfolds through the story of a human-animal relationship in the vein of E.B. White's *Charlotte's Web* (1952), illustrating the neoliberal drive to innovate and reinvigorate forms previously emptied of content for resale purposes. In this particular instance, biotechnologies derived from advances in genetic modification make possible the development of new forms of life, raising questions over the definition of what it means to be "human" or "animal" as the boundary between the two becomes increasingly blurred. Although the film situates Mija and Okja as doubles, motherless orphans navigating the capitalist underpinnings of a globalized world, I focus on Mija's assimilation into the world of finance and speculation, becoming a global citizen capable of wielding linguistic power—English—to enact contracts. While her corporate handlers attempt to cast Mija's foreignness and inscrutability (i.e. unknowability due to linguistic difference) as a malleable and thus controllable aspect of her identity, her actions ultimately demonstrate that her stoic appearance while migrating through global financial hubs masks her potential for resistance.

As one of the most celebrated South Korean directors in the last two decades, Bong might not be traditionally understood through an Asian American framework, but his works frequently cast light on the role of the US in shaping South Korean (diasporic) consciousness, whether it be

[42] This scholarship has coalesced around Ruth Ozeki's *My Year of Meats* (1998) and *All Over Creation* (2002).

through the association of American products with socioeconomic status in *Parasite* (2019) or the attribution of chemical waste to US military bases in *The Host* (2006). *Okja* more explicitly engages with the global routes of capital and its products by following its protagonist, Mija, as she navigates the cultural, economic, and linguistic divide between South Korea and the US. Moreover, Bong incorporates a Korean American activist, K, whose hybrid identity puts him at odds with both the animal welfare organization from which he seeks approval and the Korean agents of Mirando who cannot comprehend his poor mastery of the Korean language. Both figures allow viewers to interrogate the representation of Asian/American figures in contemporary media and their ongoing attachment to speculative finance.[43]

Okja's origin is initially framed in pastoral terms—her mother was found on a Chilean farm and brought to Mirando's ranch in Arizona—but viewers ultimately learn from the ALF that superpigs were created in Mirando's laboratories in New Jersey. Okja, like all superpigs, has been designed to solve the world's food crisis by leaving a minimal environmental footprint (4:59); challenge negative perceptions of GM foods by being "big and beautiful" (4:56); and taste "fucking good" (5:09). Viral marketing advertisements for the film include a website with quotes from Lucy, who highlights the need to discuss food insecurity: "the world is running out of food and we're not talking about it" ("What is a Superpig?"). With floppy ears, a pig-like snout, hippopotamus waddle, and dog-like tail, Okja could be viewed as a patchwork horror, a modern descendant of Frankenstein's monster, but instead exudes a coherence and innocence that transcends her origins in a laboratory—much like Atwood's Crakers. When viewers are first introduced to Okja, she is presented as Mija's loyal companion and friend; her value does not initially derive from her flesh, but is instead located in her bond with Mija. The film establishes this heartwarming connection in an early scene. As Mija guides Okja through precarious terrain, she loses her footing and falls off the

[43] See Aimee Bahng's analysis of speculative finance in relation to speculative fiction in *Migrant Futures* (2018).

cliffside. Using a rope that Mija had tied around her, Okja pulls her friend to safety. The film thus implies that Okja's extraordinariness is linked to several factors: her upbringing in a pristine wilderness seemingly untouched by capitalism; and her affectionate relationship with Mija, one that showcases her status as a sentient being capable of human connection. When Park Mundo, a Mirando agent, arrives to assess monthly health reports stored in a device under Okja's ear, Mija marvels at the man's MacBook Pro with retina display, viewing the laptop—not Okja—as a technological marvel. Asked by Dr. Johnny Wilcox, a television personality serving as the face of Mirando, how they managed to make Okja so beautiful, Mija's grandfather replies in simple terms: "He just let her run around" (24:02).

Even as Mija is familiar with the products of Western capitalism, including Apple laptops and Dr. Johnny's *Magical Animals*, she remains largely outside of the exploitative system. She, unlike her grandfather, does not understand that Okja is the property of Mirando and must be returned to the company at the conclusion of the competition. To distract Mija from Okja's forced removal, her grandfather leads her to her parents' graves, offering her a pig figurine made from solid gold while suggesting that she conform to societal standards (i.e. getting married, having human relationships, etc.). This scene suggests that Okja and Mija have both been husbanded: while the former has been raised for the competition (and ultimately slaughter), the latter has been groomed for adulthood and marriage—the fulfillment of filial obligations. This exchange—the gold figurine for the living creature— can be viewed as one of Mija's first forays into the world of finance. Upon reaching Seoul, striking images show Mija walking against the flow of foot traffic at one of the city's bustling subway stops as men and women in business attire move upstairs in sync with the person in front of them. Through another director's filmic lens, this scene might be read as a cliché of Asian conformity, but Bong situates this scene as a satire of capitalism, showing how Western ideologies have been replicated in South Korea to detrimental effect. Later, when Mija reaches Mirando's

office in Seoul, she breaks down a glass barrier separating the receptionist from visitors, figuratively shattering the illusion of security offered by corporate money. Tellingly, she knocks down a stylized tree that resembles Mirando's logo, which is revealed to be a synthetic creation made from plastic and electrical wires—engineered nature. Mija's journey across the globe might thus be viewed as a traditional coming-of-age story in which her adventures in Seoul and New York City inculcate her with knowledge of capitalism's resource exploitation.

Mija's conscription into Mirando's superpig project demonstrates how certain populations are reorganized and repositioned in ways that fit a new global order designed around corporate products. Despite her otherness, Mija serves as a human face with which consumers can more readily identify than Mirando's corporate figureheads. Lucy Mirando describes Mija as a "godsend" for being the embodiment of the Mirando ideal: "she's young; she's pretty; she's female; she's eco-friendly; and she's local" (1:05:26-1:05:31). Moreover, she characterizes Mija as an "extraordinary little girl," a "local farmer," the "fearless pig rider from across the globe," who raised the superpig in "wild and beautiful nature" (1:28:43-1:29:00). In forcing Mija to be the new face of Mirando, Lucy tasks her minions with highlighting Mija's Asianness in highly choreographed appearances in press releases, promotional materials, and public spectacles, like the unveiling of Okja as the winner of the Best Superpig Contest. To this end, Mija is paraded around press junkets in a bright pink hanbok, designed and signed by Lucy herself, and forced to participate in the company's social media campaign in the wake of negative publicity stemming from Mija's dramatic arrest while trying to singlehandedly rescue Okja in Seoul. Emphasizing Mija's affective labor in caring for Okja allows Mirando to promulgate a pastoral vision that starkly contrasts the real conditions of its laboratories and factory farms. For instance, Okja is raped by a monstrous superpig in Mirando's laboratories, where disfigured hybrids dwell in small, squalid cages. And, later, the factory farm is figured as a dense space overcrowded with superpigs who are slaughtered with remarkable efficiency. With Mija

at the forefront of Mirando's campaign, consumers are all too happy to consume superpig flesh, thereby participating in Mirando's efforts to secure a food source in anticipation of an impending ecological catastrophe.

Highlighting Mija's otherness qua cuteness serves as a means of sexualizing her and rendering her unthreatening: the cute Asian girl is seemingly attractive but poses no threat to the social order (Ngai, *Our* 72). Tran's theorization of the Asian girl as a specific form of racialization offers a productive way of thinking about Mija's interactions with her corporate handlers. Tran describes how the figure of the girl evokes "a dependent, not fully-autonomous figure that directly overlaps with 'minor,' which marks not only a perceived insignificance, smallness, and inferiority but also a degree of political illegibility" (11). She further notes how "the historical girlification of Asian/Americans has engendered an oppositional masculinist minoritarian politics invested in rejecting and disavowing Asian girlishness" (11).

But if *Okja* situates vegetarianism as a means of resisting Western capitalism—unsustainable practices of alimentary and technological consumption that are predicated on the exploitation of global markets and the selling of greenwashed narratives—then it also satirizes the narrow ideology of animal rights groups like the ALF that overlook their rhetoric's uncanny similarity to their corporate adversaries. Thinking about Okja's constitutive parts reminds us that animal and conservation activists have historically coalesced around cute animals, like the panda and the polar bear, that are viewed as worthy of care and concern. Mark Estren suggests that humans are invested in those animals that demonstrate neotenic traits—those that retain infantile characteristics, including large eyes and baby fat, into adulthood. He describes how figures like Hello Kitty are popular precisely because they need protection, playing into our instinctual attempts to care for what is perceived as helpless (6-7). And, significantly, he notes how the "animals to whom we feel the greatest attraction are those whom we deem, because of their morphology, to be cute" (6). Our

predilection for neotenic animals returns us to Sianne Ngai's characterization of cuteness "as a style that speaks to our desire for a simpler, more intimate relation to our commodities" and as "arguably a kind of pastoral (genre)" (*Our* 31).

From an Asian American perspective, the ALF's exploitation of K, a Korean American member who serves as both translator and surveillance technician, highlights the fallacy of the ALF's oath to "never harm anyone, human or nonhuman" (51:34-51:37). Portrayed by Korean-American actor Steven Yeun, K brings into focus the organization's exploitation of cultural difference in displacing blame for their inaction. K embodies not only the uncertain position of the diasporic Korean subject in both their ancestral homeland and their adopted country but also the continued exploitation of people of color in activist circles. K had been responsible for Korean-English translations while the crew attempted to free Okja from Mirando's headquarters in Seoul. When their plans go awry, they decide to transform Okja into a living tool of surveillance, using her capture by Mirando as an opportunity to expose the conditions of the laboratory where she was created—a grimy facility in New Jersey rather than an idyllic farm in Chile. To accomplish this, K purposefully mistranslates Mija after asking for her consent. As the ALF watch Okja's mistreatment in the laboratory—her rape by an abnormally large and aggressive male superpig—K confesses to his act of mistranslation. Rather than accepting culpability in Okja's mistreatment, Jay denounces K and removes him from the group. But because his surveillance technology is still useful to the group, he keeps K's materials and resources. This moment of denunciation—what K describes as feeling like an outsider—provides K with the impetus for getting a tattoo of Jay's comment—"translations are sacred" (1:37:50)—on his forearm as well as helping Jay and Mija track down Okja after the Best Superpig Festival descends into chaos following the arrival of Black Chalk, a paramilitary force employed by Mirando.

Although Mija's lack of English language skills initially prevents her from being able to contest the contracts offered by Mirando and the ALF, her later mastery of the language proves crucial in negotiating Okja's freedom. Lucy's twin, Nancy, replaces her at the helm of Mirando after the Best Superpig Festival is interrupted by the ALF, the result of the organization hacking the jumbotron, playing images of Okja being tortured on loop, and popping massive parade balloons shaped like superpigs. The deployment of paramilitary forces to contain the riots signals the end of Lucy's reign and Nancy's return to her former position, one that she had previously lost thanks to business decisions that privileged profit over people. Nancy orders Okja be sent to the slaughterhouse where she, like the other superpigs, will be slaughtered for mass consumption.

Even as Lucy and Nancy differ in their approach to business, they are fundamentally two sides of the same coin. Lucy's efforts to rebrand Mirando as an environmentally friendly entity are ultimately driven by her attempts to increase the company's brand recognition and to diversify the company's holdings. The adoption of marketing gimmicks, including the creation of the Best Superpig Contest and the recruitment of Dr. Johnny, simultaneously attract consumer attention and distract from the perpetuation of morally ambiguous scientific activities. That Lucy fully believes in the altruistic values embedded in the superpig project does not take away from Mirando's emphasis on profit. As Lucy's double, Nancy embodies the stereotypical representation of capitalism as cold-hearted and unfeeling. With her emphasis on business deals that maximize profit, Nancy is less interested in dressing up Mirando's enterprises: "we do deals, and these are the deals we do" (1:44:16-1:44:17). Her explication of dead superpig flesh at the film's climax illuminates her perspective: "This is the tenderloin for the sophisticated restaurants. The Mexicans love the feet. I know. Go figure! We all love the face and the anus, as American as apple pie! Hot dogs. It's all edible. All edible, except the squeal (1:44:19-1:44:34). Nothing goes to waste in this model because Mirando has capitalized on different dietary practices, transforming differences in cultural practices

into economic gain. Despite their differences, Lucy and Nancy still recognize multiculturalism as a valuable ideological tool in marketing the company's products; Lucy dons the hanbok to make the superpig more palatable for public consumption while Nancy uses racially-driven market research to ensure that no meat is wasted. Neither is concerned with building bridges across culture; rather, they simply wish to exploit difference to achieve their own ends, even if that alienates and marginalizes members of the general public. As Nancy states, "Daddy was a terrible man. He was a real horror. But, by god did he know about business" (1:36:23-1:36:34).

Nancy allows Okja to live only after the profit from the living superpig exceeds the value of its dead flesh. As Okja awaits her fate, Mija intervenes, removing the solid gold pig figurine from her fanny pack and presenting it to Nancy not with her hand outstretched in supplication but with her hand gripping the pig in a stance of power. She declares in perfect English, "I want to buy Okja…alive" (1:45:19-1:45:21). As the film cuts between Mija and Nancy, the latter's business-driven resolution begins to falter—her eyes fixated on the gold figurine and her lips beginning to form a smile. Mija throws the golden pig across the blood-spattered floor to seal the deal. Frank Dawson, Nancy's righthand man, brushes off the pig, which Nancy proceeds to bite to test its quality before proclaiming, "We have a deal. This thing is worth a lot of money" (1:46:02-1:46:05). With Mija transformed from saboteur into consumer, Nancy's demeanor undergoes a radical transformation. She instructs Frank to "make sure our customer and her purchase get home safely. Our first ever Mirando superpig sale. Pleasure doing business with you" (1:46:06-1:46:13). As Okja is released from the mechanism, Mija hugs her tightly. The two are seen leaving the factory escorted by two Black Chalk guards. But two superpigs, fearing for the safety of their child, nudge a superpiglet under the electric fence so that Mija can take her to freedom. Hidden in Okja's mouth, the superpiglet evades detection by Mirando's agents, and the superpiglet is next shown as part of an idyllic tableau in the mountains of South Korea as part of Mija's family.

The film ultimately culminates in a quiet scene between Mija and her grandfather consuming a vegetarian meal, having given up meat in the wake of Mija's introduction to the horrifying world of the abattoir, the unsustainability of the factory farm. Even as Okja is saved from death, the other superpigs remain unliberated, waiting to be transformed into pork products that taste "fucking good." In one of the film's final scenes, Mija faces the camera while standing next to Okja. Aside from Okja's breathing, there is no ambient noise, suggesting that they have finally returned to a place where human and animal can reside in peace. The naturalness of this scene—both the verdure of the countryside and the unassuming arrangement of the human-animal family—suggests that we have finally reached the pastoral ideal that Lucy had envisioned in her initial pitch for the Best Superpig Contest. Yet, one questions whether Mija and her family are actually outside of the system by the film's end and whether they can truly remain on the periphery, unnoticed by other corporate entities seeking to profit from the human-animal companions.

In her theorization of human-nonhuman entanglements in an increasingly high-tech, ecologically damaged world, Kath Weston has described how agribusiness and food culture have been shaped by so-called "techno-intimacies"—what she describes as "intimacies generated by relations of production that deploy technology to reconfigure the world as an alienated (and therefore distanced) collection of resources, the better to extract them for profit" (40). According to Weston, surveillance technologies derived from the military-industrial complex, like RFIDs (radio-frequency identification tags), have been deployed in agricultural practices to ensure the safety of the nation through the biosecurity of the category dubbed "US meat" and to meet consumers' demand for information regarding the origin of their food. These practices have been marketed to consumers under the guise of providing "face-to-face relations" between the consumer and the consumed object. This desire for "face-to-face relations" bespeaks a nostalgic return to a pastoral mode of agricultural production wherein animal husbandry is defined by ethical human-animal

relationships predicated on affection and care. However, the basis of these "face-to-face relations" is not solely predicated on knowledge about the origins of one's food. Rather, I want to suggest that these "face-to-face relations" can actually be viewed as an attempt to recognize oneself in food, to be able to recognize the human capacity for care while participating in exploitative food systems. The development of the superpig, while framed as a solution to environmental problems caused by overconsumption, does not ultimately disrupt existing systems that privilege the mass slaughter of animals in questionable facilities whose fluorescent lights bespeak the sterility of a healthcare setting but in reality might be viewed as a site of potential zoonotic spillover. Marketing gimmicks designed to occlude the laboratory origins of our food cannot substitute for the face-to-face relations that seemingly allow for more ethical treatment of animals. Mija's place in this schema positions those outside of capitalist structures, beyond the confines of the US, as capable of rejecting the imperialist and neocolonial logic proffered not by governments but by corporations. Yet even that vision comes across as a pastoral fantasy on Bong's part, especially considering the setting of the film in a hypercapitalist country like South Korea.

On Such a Full Sea: Family Matters

Set approximately 200 years in the future, Chang-rae Lee's dystopian novel *On Such a Full Sea* imagines a moment in which US cities have been repurposed as self-contained labor colonies where drone-like workers of Asian origin cultivate chemical-free fish and produce for the privileged elite, residents of exclusive Charter villages. Fan, a sixteen-year-old Chinese American fish-tank diver, escapes from B-Mor, one of these production facilities located on the ruins of Baltimore, to search for Reg, her disappeared boyfriend and a valuable resource to elite scientists because of his genetic resistance to C, a cancer-like disease. Reg's genetic makeup is deemed valuable by the pharmaceutical corporations (pharmacorps) that supply endless treatments to the Charters,

extending lives before the onset of the crash, a rapid failure of the organs, as his perceived immunity poses a threat to their profits. In searching for Reg, Fan migrates through the open counties, the forgotten spaces between the Charter villages and the production facilities, where she encounters a disgraced Charter veterinarian and a cannibalistic family of acrobats before being traded to a Charter couple, Mister Leo and Miss Cathy. There, she witnesses firsthand how wealth cannot purchase happiness, as she plies her affective labor until she is able to find her brother Bo Liwei, a former B-Mor whose high test scores have earned him a rare promotion to the Charters. Yet, this family reunion is short-lived, as Liwei offers Fan and her unborn baby to the pharmacorps to facilitate the sale of a biotechnological treatment that promises to sustain his family's upward economic and social mobility. All of these events are narrated by a chorus comprised of the residents of B-Mor, who recount Fan's exploits from an omniscient perspective, even as their last sight of Fan was recorded on video monitors the day she left the facility.

Lee's novel draws inspiration from the live-work factories of Shenzhen, China, which were made famous by a spate of suicides at a Foxconn facility in 2010. These deaths—and the poor working conditions that led to these acts—gained notoriety on an international scale due to the company's association with the manufacture of electronic components used by global corporations, such as Apple, drawing into relief the unequal relationship between consumer and producer in the global marketplace. Lee's fascination with US-China relations in the twenty-first century—a period that has seen the ascendance of China's economic power following its rapid industrialization—led to his visit to a live-work factory in 2011, an experience that motivated him to write a "social fabric novel about Chinese factory workers" ("An Interview"). Lee describes himself as "someone in the last five to seven years who had a lot of interest in China, about all the awesome things that were happening, but also this kind of dread about China, about its power, about its environment. All the things that make China special and noticeable" ("Q and A"). Yet, Lee's interests changed after

riding the train through Baltimore and witnessing the ruination of the neighborhood adjacent to the train station. Moved by this scene, Lee recounts his desire to address the affordable housing crisis: "what a waste! We need so much affordable housing in our cities, and in Baltimore especially. I thought, why don't we just invite an environmentally ruined village in China over? People can't live there. Fifty thousand people—bring them over here, let them have it" ("Q and A"). Even as Lee's experiences in Shenzhen have allowed him to imagine the live-work factory as an organized campus rather than an industrial wasteland, his understanding of the workers' lived experiences and needs remains limited: he remembers "not the details of that visit" but rather "the feeling, the ethos of those workers, the sense of community they had" ("Q and A"). These impressions coalesced into the fictionalized B-Mor, a production facility housing Chinese workers atop the ruins of Baltimore, and allowed Lee to explore how an "immigrant enclave inside a sort of strange world" would develop "given its heritage, given its practices, given its cultures, endemic culture" (Brada-Williams 2).

Despite this promising conceit, journalists and scholars, alike, have critiqued the novel for its unimaginative world-building, inaccessible characters, and meandering plotlines. Michiko Kakutani, for instance, has criticized the novel as "overly familiar and unconvincing" due to its "satirical extrapolations of current or incipient woes." For Kakutani, the novel's futuristic setting is undermined by its reliance on familiar tropes, which do not spark the imagination of readers. Likewise, Christopher Fan has lamented the novel's failure to fulfill its speculative potential: "Not enough time has been spent in science fiction for Lee to make his world work; not enough of his world has been built." And, perhaps more importantly, Fan takes issue with the protagonist's development: "Fan never resolves as a distinct character, even if we know a lot about her." These reviewers link protagonist's lack of psychological depth to the collective narrative voice, whose

ruminations on Fan's journey are thrown into doubt by their temporal and geographic distance from the events unfolding in the open counties (the Smokes) and the Charter village (Seneca).

Recent scholarship has sought to recuperate the aesthetic and theoretical value of Lee's vision by approaching the novel through the lens of affect theory (Cai, Tran), narrative theory (Enriquez, Lee), and critiques of capitalism (Fan). This scholarship has coalesced around the unremarkable stature of the novel's protagonist, a girl repeatedly described as a non-heroic figure, as well as the collective narrator's positioning as a stereotypical representation of the Chinese diaspora, an immigrant community whose emphasis on collectivity contrasts the individualism of the Charters. An infrastructural framework brings into focus racialized questions of population control and resource management in neoliberal futures by showing which bodies are framed as optimal for the maximization of profit through efficient production. I add to this body of scholarship by excavating the novel's setting and structure—its representation of the unequal distribution of resources, pollution, and wealth amongst the production facilities, the open counties and the Charter villages. Fan's perceived flatness allows her to be objectified in different ways (i.e. as bartering tool, as sexual object, as biocapitalist subject), which enables her migration across and through the secure borders that demarcate territory belonging to each of the three social formations. Whether she is exploited for physical or affective labor, Fan serves a critical function in each of these social formations, showing how she is not only tasked with maintaining infrastructure but might also be viewed part of infrastructure itself. Such infrastructure is linked to the agricultural and biomedical industries—systems that Atwood and Bong have shown to significantly overlap thanks to their emphasis on (re)production.

The novel is narrated from the perspective of the residents of B-Mor using the plural first-person pronoun "we." For the B-Mors, the story of Fan has become the stuff of legend after being retold and shared amongst the residents of B-Mor, whose last glimpse of Fan is through an archived

video recording that shows her leaving the production facility. Beyond the walls of B-Mor, Fan remains a figment of the B-Mors' nascent imagination, one that had been previously constrained by the routine of the production facility. Scholars have theorized the collective narrative voice in several ways. Some have decried the distance fostered by the narrators between the novel's protagonist and readers, noting how the narrative style refuses access to Fan's psychological development. Indeed, the narrators constantly throw into question their account, suggesting that the story of Fan must be so despite not having witnessed the accounts firsthand: "Every once in a while there are figures who draw such attention, even when they aren't especially charismatic, or visionary, or subtly, cleverly aggressive in insinuating an agenda into the larger imagination. For some reason, we want to see them succeed. We want them to flourish, even if that flourishing is something we'll never personally witness" (227). Ji Eun Lee has suggested that the narrators, not Fan, are the primary subjects of a novel of formation, wherein the collective narrative voice demonstrates the development of a diasporic consciousness as it charts Fan's progress across literal and figurative boundaries. Recognizing the self-determined actions taken by an unremarkable individual like Fan, the narrators begin to follow her example by disrupting the status quo through the dissemination of fugitive videos and stories, the appearance of graffiti about Reg and Fan, and the rejection of social mores (e.g. throwing waste into a decorative fish pond). By the end of the novel, the narrators have developed a sense of self, reflecting on the newfound potential of their collective imagination. Even so, the novel closes with the suggestion that life in B-Mor has mostly returned to traditional ways, with the cycle of production and labor restored following the publication of scientific studies disproving any link between B-Mor produce and toxicity. As the narrators state, the "period of disturbance" caused by Fan's departure and the rationing of services is "now nearly impossible to remember, not just its details but the very fact of it" (337).

Rather than reflecting on the role of storytelling in forming collective subjectivity, I want to propose another way of thinking about the collective narrative voice by turning to their representations of self, an identity that is repeatedly conflated with the fish they cultivate. Their collective ruminations on their self-identity speak to their status as both individuals with lived experiences but also critical pieces of the directorate's flesh production. In "becoming [their] best selves" (21), the narrators allow themselves to function in service of the directorate, benefitting the Charter community that depends on their labor for their subsistence. For the B-Mors, their racialized labor has come to substitute for the trappings of identity: "But maybe it's the laboring that gives you shape. Might the most fulfilling times be those spent solo at your tasks, literally immersed or not, when you are able to uncover the smallest surprises and unlikely details of some process or operation that in turn exposes your proclivities and prejudices both?" (5). Here, the B-Mors demonstrate how their identity is predicated on production, whether it be the fulfillment of tasks related to the production of food or the perpetuation of a larger system dependent on their labor and their future generations' labor.

Before delving into Fan's journey through different social formations, it is worth exploring the circumstances that contributed to the rise of the pharmacorps. Readers learn from the narrators that overconsumption spurred environmental disaster in Xixu City, one of several cities in New China devoted to harvesting the natural resources and producing the goods demanded by global consumers:

> Xixu City was made uninhabitable by the surrounding farms and factories and power plants and mining operations, the water fouled beyond all known methods of treatment. Although the population of the town was only 300,000, the cars and trucks and scooters and buses easily numbered a million, and so along with around-the-clock coal and rare-earth excavation, the air never had a chance to clear. Then

> one day the provincial government could not transport in anymore fresh water—fresh water was shockingly scarce even in the major cities—and so the town was forced to cease. Those who can remember the tales of the old-timers report that in the heydays it was as if the entire valley and everything in it were slowly scorching, all the rubber and plastic and alloys, all of what little real wood remained, all the rotting food and garbage, the welling pools of human and animal wastes, such that in the end it was as though the people themselves were burning, as if from the inside, exuding this rank, throttled breath that foretold of a tortuous lingering demise. (17)

As structures designed to deliver human and nonhuman resources from sites of production to consumption, infrastructures simultaneously produce and are produced by the built environment. In Xixu City, infrastructural development is mobilized around existing natural resources—the abundance of land suitable for intensive agriculture and the variety of minerals buried deep in the earth. As a result of unsustainable resource extraction, these infrastructure contribute to the city's demise: its water supply becomes undrinkable while its air becomes unbreathable. This exposure to pollution makes the residents feel as though they are "burning" from the inside, and C, presumably linked to the exposure to toxic chemicals, is the manifestation of "the tainted world" looming within all living creatures (65).

Upon arriving in North America, the arrivals find themselves in awe of the productive potential of decaying US cities, whose abandonment is never fully explained.[44] While the narrators recognize that readers might be incredulous after hearing about the gratefulness of the first migrants from Xixu City, they remind us that "so depleted a cityscape" could harbor "an entire community, ready for revitalization" (18). The importation of this displaced workforce thus satisfies two

[44] While these cities are framed as "abandoned" by the new arrivals, the novel makes legible how this new laboring population encounters and intermingles with those who have been left behind by the movement of the elite to Charter villages.

problems facing the pharmacorps: it solves a labor problem by securing a workforce who feels "genuinely grateful" (18) for being presented with a new home; and it ensures that vital landscapes can be restored at minimal cost by laborers who find value in activities offering "honest gratification" (18). But the transformation of Baltimore into B-Mor rehearses the settler colonial logic of displacement through infrastructural development. As the narrators note, Baltimore was home to a small "indigenous population" comprised of descendants of nineteenth-century African slaves and twentieth-century laborers from Central America and even bands of twenty-first-century urban-nostalgics" (19). Although the majority of these inhabitants had disappeared by the time of the immigrants' arrival, the remaining population occupies territory that would ultimately become the center of the production facility. These people are presumably displaced as the first wave of immigrants from New China "went about their first labors, renovating the row houses in the same way" (18). And, significantly, traces of their presence are removed as these immigrants install new infrastructure, emptying of the city's cemetery to make space for the facility's "first truly uncontaminated grow beds that are now a B-Mor trademark" (18).

Even as the novel implies that environmental ruin in New China spurred the migration of its people to North America, the chorus reveals a more sinister motive that casts B-Mor as a high-tech plantation: "The originals were brought in en masse for a strict purpose but with their work- and family-centric culture intact, such that they would not only endure and eventually profit the seed investors but also prosper in a manner that would be perpetually regenerative" (19). The financial logic underlying the recruitment of the residents of Xixu City is reminiscent of the arguments made in favor of adopting coolie labor in tropical islands, like Hawai'i, where a self-perpetuating labor supply was as important as a reliable water supply for sustained financial gain. Yet, the specific contours of the agricultural and biomedical industries portrayed in *On Such a Full Sea* reflect twenty-first century anxieties over China's economic and military rise. The novel plays with techno-

Orientalist tropes that render New China as a "a human factory" (Roh, Huang, Niu 4). Indeed, the narrators note how their "predecessors had the unique advantage of being husbanded by one of the federated companies, rather than the revolving cast of governmental bodies that overreached in their efforts" (19). The residents of B-Mor are thus framed as drone-like workers whose collective wellbeing stems from their devotion to labor and the status quo. Their specific cultural heritage make them ideal technicians for the maintenance of infrastructure, as they police one another to ensure that nobody shirks their duties or becomes overly dependent. The movement of people from the ruined wastelands of Xixu City to B-mor is not merely an altruistic gesture but a calculated business decision intended to increase productivity and, by extension, profits that sustain the Charter villages. Indeed, after experiencing life in the open counties, Fan realizes that B-Mor has developed a mythologized fear of the outside world's disorder in order to maintain productivity: in B-Mor, "routine is the method, the reason, and the reward" (164). Circumscribed within the secure walls of B-Mor, the narrators have literally and figuratively built upon the histories of their ancestors' arrival, enshrining hard work and collective identity as the foundation for B-Mor's past, present, and future. As the world's environment faces continued degradation, the success of the production facility persuades B-Mor's corporate directors to replicate the model elsewhere, transforming environmental ruin into an economic opportunity to create a new class of laborers: "Most every canton of the world ecology, in their view, had been contaminated beyond remediation, at least for the foreseeable future, which is why a place like B-Mor was developed at all, and then replicated many times over after our successes" (100).

How the B-Mors narrate their own labor is particularly telling insofar as it reveals a recognition of their collective value for the functioning of society: they provide not only fish but rather the stability of a food supply. Here, the conflation of food and labor cultivation is mixed, with the "bonds of blood or sexual love" explicitly linked to "what we ultimately produce" (7). That

the B-mors produce a state of being rather than a product speaks to their inseparability from the reproductive infrastructures in which they are entrenched. One of the more interesting aspects of the B-Mors' narration is their repeated representation of self in animalistic terms, casting themselves as livestock to be cultivated. They not only refer to themselves as a "hive" (46), evoking the stereotypical imagery of the yellow peril "swarming" across Asia and threatening white dominion in North America, but also as worker bees following directions for the betterment of the entire colony. However, the production facility is not the only cage to which the B-Mors find themselves confined; rather, they cast their reproduction as a form of selective breeding that allows for the perpetuation of specific cultural and biological traits: "we live in a kennel of our own blood, even if thoroughly mixed after numerous generations, which offers, during the fiercest storms, the most reliable shelter" (490). While describing changes made in the aftermath of Fan's departure, the narrators conflate themselves with their product. As they note,

> Charter biologists and engineers revised our feed and tank formulas, and instituted new facilities practices, and an outbreak of that scale has not happened since. Every level and composition—from the feed, to the water, to the air, to the grow media, to the spectrum of the lighting—is constantly monitored and reviewed, though the truth is that over the years the calibrations have grown so fine that new equipment was necessarily developed, given how decimal places kept being added, the measuring process itself evolving into a kind of test of our mettle, to see how far we could go in realizing an ultimate standard (100).

The indeterminate subject of the pronouns suggests that it could be the B-Mors, themselves, who bear witness to revisions to their everyday routines rather than the fish they tend. The narrators also describe the facility as a site specifically constructed to maximize productivity, much-like the climate-controlled Paradice in Atwood's novel that houses genetically modified hybrids: "Because it's rarely

pleasant out of doors, we've come to depend on the atmosphere of seasonally perfumed, filtered air and the honey-hued halo lighting and the constantly updated mood-enhancing music that all together are hardly noticeable anymore but would likely cause a pandemonium were they cut off for any substantial period" (12).

Fan's departure from B-Mor occurs amidst a series of infrastructural breakdowns that leave the B-Mors questioning their everyday routines. Following an unusually active hurricane season, the production facilities' pipes are overwhelmed with water, highlighting the precarious position of infrastructure in the wake of global climate change. Joseph, one of Reg's youthful friends, is swept away into a pipe while playing with his brother in a flooded pond with fish. While the community mourns his death, Fan leaves the production facility, with few noticing her departure outside of the recordings captured on camera. Only after Fan has left do her coworkers discover another rupture in their ordinary routine: Fan has poisoned the fish for which she was responsible for raising. As one of the production facility's tank divers, Fan had been tasked with cultivating the nutrient-rich, toxin-free fish that would ultimately be sold to the Charters at prices few B-Mors could afford. Although the narrators question why "she caused the deaths of only her own fish, the ones she so carefully raised" (11), Fan's act should be viewed not as sabotage but as a freeing of herself from any obligation to her labor or her family. These disruptive acts should be understood as attempts to extricate herself from corporate machinery, to remove herself from the cultural and economic systems that deny individual agency by binding her to the community.

In leaving B-Mor, Fan exchanges the routine of B-Mor for the chaos of the open counties. The open counties are characterized by a lack of infrastructure, with any resources siphoned to the Charter villages or the production facilities. The stark contrast between the livelihoods of these communities brings into focus how infrastructure is fundamentally unequal, mobilized to

concentrate resources and knowledge in desirable locales while moving pollution and capitalist excess to undesirable areas:

> For there's real struggle for open counties people, for in a phrase the basic needs are met but not much else; the power is thread, constantly cycling on and off; housing is rudimentary, with shantytowns the rule; water is plentiful only during the wet seasons, and should be boiled at any time. And talking about smell! The system of sewers in the open counties (ours in B-Mor was redone as recently as ten years ago) dates from nearly two hundred years *before* our people arrived from New China, truly ancient times, such that after there's a heavy rain and the wind blows from the southwest, you can pick up from our very block the sharp rot stink of human settlement, that undying herald: We are here! We are here! We are here! (13)

These impromptu settlements emerged in the wake of financial ruin caused by wasteful expenditures, which prevented the maintenance of infrastructure and the harnessing of resources for the community's own benefit: "[t]he settlements originally developed because the old-time towns and small cities were dying off because of crushing debts, as they couldn't afford to run the schools and repave street sand fix the sewers, the last intact services usually being the police" (132). Although there had been talk of collecting the settlements in the open counties into a confederation of state, in a model resembling the Charter villages, "[o]ne of the problems was the sheer number of them, some constituted and run like any old-time town or small city, with a fairly dependable infrastructure and public services, the much greater number being impromptu settlements that had grown over the years and were known only by somebody's name, such as Tinkersville or the Vromans" (132). However, competition for the limited resources made available to those outside of the Charter villages and the production facilities nullifies any attempt to recreate a unified nation. This is not to say that the open counties are free from capitalism but rather showcases what happens

when profitability is relocated to specific territories like the Charter villages or the production facilities.

Even as the failure of infrastructure to deliver on its promise of providing resources to consumers is made visible in the meager lifestyle of those living in the open counties, daily performances of capitalist relations persist outside the Charter villages and the production facilities, with a barter-based system of exchange creating an imbalance of resources for those without essential goods and skills. After being hit by a truck, Fan is cared for by Quig, a disgraced Charter veterinarian who has assumed a position of relative power in the open counties thanks to his medical knowledge. This "adoption" is not framed as an altruistic gesture but rather as a calculated move to improve the standing of the Smokes, the settlement that has taken shape around Quig's hilltop compound. While Fan proves her worth by improving the efficiency of Quig's medical practice through the reorganization of patients according to means, her value is ultimately shown to be linked to her status as a girl-like figure capable of being shuffled between infrastructures. Fan's departure from Quig's compound is precipitated by the lack of fresh water in the vicinity. Lacking the proper mining equipment to drill additional wells, Quig turns to one of his former contacts in a nearby Charter village. This contact, Mister Leo, owns a mining company and is willing to exchange the required equipment for Fan. The trafficking of Fan to Mister Leo is not an isolated incident but part of a larger scheme in which humans are bartered with residents of the Charters in exchange for essential goods. The narrators reveal that, prior to Fan, Quig had acquired two teenage boys after their parents needed emergency medical aid. These boys were kept within Quig's compound until they were "carted off in what looked to her like a Charter medical van" in exchange for "a fairly new vehicle equipped with four-wheel drive" (107). This is not an unusual occurrence, as Fan recalls Loreen, one of Quig's assistants, pushing back against the assertion that Quig's compound is an "intake facility for some purported 'Charter call' for youths" despite her role in leading the teenagers

to the Charter van (107). As readers later learn, many of the youths who turn up in Mister Leo's household—later adopted by his wife Miss Cathy—are castoffs from the open counties.

After Mister Leo suffers a debilitating stroke, Fan is taken into Miss Cathy's care, who adds her to a coterie of girls kept in a secure wing of the house accessible only by Miss Cathy and Mala, the housekeeper. The Girls—referred to by the narrators as One through Seven—have undergone surgical modifications, augmenting their eyes to resemble anime characters. In their quarters, the Girls adhere to a daily routine, which includes working on a massive mural covering one of the room's walls. This mural not only narrates the individual histories of the girls but also highlights their unique aspirations. For instance, we see One and Two as two small girls crouched in the corner with markers in hand and learn how the introduction of Three catalyzes a change in Mister Leo, whose sexual exploitation of the Girls is figured as an ominous figure looming in the background. In "keeping" a collection of young women who "had been practically orphans to begin with, toss-offs from the counties who were damaged by Mister Leo and then quartered in a literally hobbling protective custody" (223), Miss Cathy functions as a maternal savior figure, protecting these girls by denying their individual subjectivity. But even as these girls are ostensibly in Miss Cathy's care, their primary function is to care for Miss Cathy, allowing her to perform her daily routines without succumbing to the psychological burden of her troubled childhood. That all of the Girls are surgically modified to appear like anime characters speaks to a standardizing process aimed at providing continuity for Miss Cathy's care: "for it was ultimately not a particular girl or girls who were most important but their totality, the way they could web and cocoon her and settle her down each night and day so that there was no untoward pinch or ache or wrinkle, the temperature of their corpus always regulating and kind" (246). Miss Cathy's need for steady and stable companionship suggests that the conditions of the Charters is not as utopian as one might think; money cannot buy happiness, even if it might procure a coterie of girls and endless mani-pedi parties. By incorporating

those deemed "practically orphans" into their families, the Charters can avoid dealing with the larger infrastructural problems afflicting their neighbors in the counties.

Even as the open counties are figured as a place devoid of resources, the "keeping" of the Girls suggests otherwise. Because the Charter villages are devoid of the caretaking necessary to "treat" Miss Cathy's trauma, she relies on the affective labor of discarded populations. Mala, the housekeeper, occupies an intermediary position, choosing to work in Mister Leo's household to sustain her family in the open counties, an arrangement that limits how often she can visit and engage with her family. But Fan recognizes that Mala, also of Asian origin, might have been part of another population of Asian laborers recruited to replicate the success of the New Chinese immigrants: "There were some facilities that had experimented with bringing in groups from places like Vietnam and Indonesia and the Philippines but that didn't continue, often because there was trouble integrating them without claims" (172). The Charter villages' exploitative relationship with the open counties and the production facilities highlights how discarded humans are translated into resources capable of providing care for the privileged elite, who are weighed down by psychological trauma wrought by their financially-driven choices. And, in performing this care labor, these castoff individuals sacrifice their own futures in order to maximize the potential of their keepers, employers, or overseers. Whereas the residents of B-Mor provide the Charter villages with the alimentary products necessary to sustain bodily health, the people of the open counties perform other duties in service of the reproduction of Charter values, the perpetuation of the Charter way of life. As readers learn, that system is primarily predicated on economic gain, reflecting Lee's satirical portrayal of a society dictated at all levels by neoliberal competition.

Fan's pregnancy further complicates this model, as her search for Reg is not only motivated by her attempt to find her lover but also the father of her unborn child, a child that may or may not share resistance to C. The value of Fan's unborn child becomes apparent once she finds her

brother, Liwei, after the willful poisoning of Four and Five allows her to leave Miss Cathy's household. After his elevation from B-Mor, Liwei, renamed Oliver, is adopted by a childless Charter couple, who are less concerned with the wellbeing of their adopted son than the image of a family that his adoption allows them to project. Oliver's experiences motivate him to use money from the pending sale of Asimil, a revolutionary treatment—not cure—for C that will extend a patient's life of serial therapies, to construct a family-oriented. Betty Lane, the housing compound modeled after a clan's household in B-Mor, reflects Oliver's attempts to challenge the individualism that pervades the Charters, an orientalizing gesture that situates the Asian American model minority family as a neoliberal form (Koshy 346). The efficiency of this building project contrasts with the increasingly broken infrastructure of the open counties, where such development projects would be unheard of given the role of barter as the primary system of exchange. Oliver explains how this project can only be accomplished through structural (as opposed to cosmetic) changes:

> The way they would do this, Oliver explained, was not simply by 'wanting to' and 'promise keeping' but by making, literally, structural changes; the plan, still preliminary, of course, but at the same time something he had seriously thought through last night, was to reorient this brand-new house, changing everything so that the entrance and front were on the driveway side, which would be mirrored by a similar construction on the abutting lot that he was going to buy. . . . It was homey and tidy, safe and happy, a prettified version, Fan could see now, of a B-Mor street, one that seemed like theirs, as he rendered what appeared to be a tiny lion head on one of the front doors. (305)

Betty Lane is revealed as the idealization of B-Mor's qualities in the wake of rampant globalization, a pendulum shift by one who had grown up in B-Mor but matured in the Charters as the adoptive son of a couple less concerned with care and empathy than with outward appearances. This process is

made possible by the mirroring of the two structures, the standardization of the building process across two lots at the same time. Such efficiency comes at an exorbitant cost, depleting Oliver and Betty's financial reserves and impelling the former to seek alternative agreements to finalize the sale of Asimil.

The completion of Betty Lane depends on financing obtained through the successful sale of Asimil, a new series of C treatments with a 60% success rate in controlling spread, to the pharmacorps. That sale is only complete after Oliver agrees to hand Fan and her unborn child to the pharmacorps, thereby challenging the utopian vision embodied by Betty Lane. To be able to achieve a collective, communal style of living requires an individualist pursuit of money that privileges self over family, profit over blood. The novel holds the sale of Asimil and the recovery of Reg in tension: although both can be viewed as potential immunotherapies, only one can perpetuate wealth through a cycle of prolonged treatments. Cai suggests that we read the novel through the lens of biocapitalism, understanding the extrapolation of labor and genetic material (e.g. Reg, Fan's baby) as proof of the B-Mors' status as biocapitalist resources rather than individuals (189). For the pharmacorps, curing C is not as profitable as generating new treatments that will continue to prolong the life of those diagnosed with the disease. Making that longevity dependent on cutting-edge treatments ensures that they have a market for their products. Blood, the traditional signifier of biological coherence and genealogy, is thus shown to be weaker than corporate ties, as the conclusion of the novel, in which Oliver trades Fan's unborn baby to the pharmaceutical companies in return for the final sale of his research, further indicts the economics underpinning such transactions: "For Liwei was going to deliver you not to anywhere near us and Reg but to the pharmacorp, in the hope that someone bearing Reg's legacies would be fair exchange for their final purchase of his work. Or at least that was his intention" (351). Even as Asimil might be viewed as an altruistic project aimed at treating, if not outright curing, C, the novel suggests that the market's

corrupting influence transforms this form of biotechnology into a commodity that must be exploited for profit rather than freely shared.

If neoliberal policies are responsible for the degradation of the environment, those same policies also allow for the harnessing of people displaced by environmental ruin. In Lee's formulation, the displaced subject is then rebranded as an affective, agricultural, and/or biological resource that allows for the continued accumulation of capital within the very communities responsible for creating differentiated experiences of the environment. That such experiences are racialized reflects Jeffrey Santa Ana's suggestion that being Asian American "is a negotiation with the *felt* process of racialization, carrying within it layers of history that are mediated by emotional attachments to achieving a sense of home and belonging" (23). Yet, Fan's home cannot be located in the community she left behind or Betty Lane, the compound designed to promote feelings of kinship. Rather, Fan's actions suggest that she cannot feel a sense of belonging as long as profit is prioritized over bonds of kinship. The novel's ambiguous conclusion echoes David Eng's observation that "family is not only whom you choose but also on whom you choose to spend your capital" (99), illustrating how the rhetoric of adoption belies the consumerist tendencies underpinning such relationships. Although Fan never transcends the perverse economics of this dystopian future, she nevertheless escapes the confines of the competing narratives imposed on her by moving beyond the scope of the narrators' perspective and disappearing into the open counties.

Infrastructures of Flesh

Atwood, Bong, and Lee imagine futures wherein minority subjects have become resources for privileged populations, critiquing the neoliberal policies and practices that threaten to further commodify life itself. Reading these works through an infrastructural framework heightens their interrogation of racial capitalism and the enrollment of racialized bodies into circuits of

accumulation and ruination. When understood through the framework of state power, infrastructure can be understood as "a biopolitical project to maximize the health and welfare of the population at the same time as subjecting it to control and discipline" (Gupta 65). But with the replacement of governmental regulation with neoliberal competition, the biopolitical dimensions of infrastructure privilege the wellbeing of specific populations with the capital to consume emerging biotechnological products while controlling and disciplining those with limited means, primarily those from developing countries with ruined environments. That these futures are not so different from our own is an unsettling reminder of the issues facing our current society, the inequalities enshrined in a society built upon infrastructure that continues to disadvantage less desirable communities within the borders of the US.

Wasting Away: Slow and Infrastructural Violence in Rita Wong's *forage*

Epilogue

At a 2017 press conference held in the Steve Jobs Theatre at Apple's futuristic headquarters in Cupertino, CA, CEO Tim Cook suggested that the company's new campus—a circular, spaceship-like structure—"has been built to reflect Apple's values, both for technology and environment" (qtd. in Kelly). This idealized marriage of technology and environment is encoded in the campus' bucolic name: Apple Park. Boasting 175 secluded acres, more than 9,000 trees and shrubs, and running paths set amidst idyllic tableaus, the campus serves as a large-scale model of Apple's design aesthetics—clean, minimal, and simple. The fanfare surrounding the new campus is understandable given Apple's prominence in the public eye, but works to obscure the problematic circuits of production, consumption, and waste disposal that underlie the techno-utopian futures proffered by technology giants in Silicon Valley, a region noted for its concentration of technology corporations and active Superfund sites.[45] Even as Apple has gone to great lengths to sanitize its image in the wake of critical exposés documenting poor labor conditions in its suppliers' live-work factories, to promote electronic waste (e-waste) recycling through trade-in programs, and to reduce the materials (precious metals, plastics, etc.) required for its products, the company remains invested in a system of resource exploitation where laborers in the Global South must reckon with dystopian—not utopian—landscapes created by consumers' demand for the latest technology in the Global North. From Foxconn's factories in Shenzhen to the e-waste dumps of Guiyu, the landscapes (cultural, economic, physical, social) of Southern China have been radically transformed over the last three decades to manufacture *and* to dispose of the information and communication technologies needed to sustain digital environments.

[45] See Jennifer Gabrys' *Digital Rubbish* (2013) for an account of Silicon Valley's relationship to electronic waste.

In previous chapters, I explored how infrastructure has been used to differentiate between desirable and undesirable places and people, focusing on how wasted landscapes have been made to contain prisoners of war, install colonial forms of government, or concentrate resources in specific communities. In the first chapter, I explored how Japanese Americans, labeled as environmentally damaged and damaging, were interned in the deserts of the American West as part of a large-scale rehabilitation project aimed at reforming enemy aliens into patriotic citizens and revealing the productive potential of nonproductive lands. In the second chapter, I investigated how Euro-American businessmen and missionaries transformed the Hawaiian built environment through the development of Western infrastructure that sought to harness the archipelago's water for plantation agriculture, even as the coopting of water threatened indigenous agricultural practices and cultural beliefs. And, in the third chapter, I turned to speculative Asian/American futures to consider how the wasting of the environment through overconsumption has precipitated the formation of surplus populations, whose physical and reproductive labor form part of infrastructures of flesh. In this epilogue, I turn to material forms of waste and the waste infrastructure that have been mobilized to, in the words of Amy Zhang, reproduce "urban life by channeling the flow of discarded things out of city." As will be seen, the infrastructures that sustain urban life are fundamentally linked to the wasting of bodies and environments outside of the city, widening the gap between "here" and "there" in an increasingly globalized world.

Although air- and waterborne pollution have increasingly been viewed as harmful products of developing Asian nations and as threats to the biological and environmental security of the US, Canadian poet Rita Wong reveals how such perspectives overlook US complicity in facilitating the environmental degradation of foreign territories through technological development and corporate

marketing.[46] In *forage* (2007), Wong considers how contemporary forms of waste and pollution derive from unsustainable corporate practices and consumer habits in the Global North. Self-described by the author as impassioned rants against the abuses of capitalism, *forage* explores the embodied, ongoing percolations of involuntary exposure to genetically modified organisms (GMOs), petrochemicals, and e-waste by experimenting with poetic form to bring into proximity the macroscopic (global infrastructural flows) and the microscopic (chemical compounds, cancer cells). For Wong, the entanglement of capitalism, environment, and technology does not bespeak a nostalgic return to the pastoral mode but instead produces forms of slow violence that have been rendered invisible in the public consciousness with the aid of geographic and temporal distance. Slow violence is, in Rob Nixon's formulation, "a violence that occurs gradually and out of sight, a violence of delayed destruction that is dispersed across time and space, an attritional violence that is typically not viewed as violence at all" (2). In making visible the plight of laborers in the Global South who assemble the world's cellphones, laptops, and tablets, forage for precious metals from "recycled" e-waste, and negotiate unequal body burdens, the collection condemns techno-utopian discourse that imagines sustainable futures as the product of technological innovation.

One of the recurrent threads in *forage* is the accumulation of waste in bodies and landscapes at sites of production and disposal. In the collection, waste encapsulates a number of material and metaphoric objects that have been discarded. Although "garbage" and "trash" typically refer to municipal solid waste, the discarded objects that form part of everyday life, Wong extends waste to include humans and nonhumans as well as organic and inorganic materials (i.e. laboring bodies *and* the commodities they produce). Indeed, *forage* suggests that capitalism fosters a culture of

[46] In 2008, *The New York Times* featured an article titled "UN Reports Pollution Threat in Asia," which identified "brown-cloud hotspots" across the globe whose haze and smog pose threats to less polluted areas in the developed world. In 2017, *NPR* reported that smog in the Western US begins as pollution in Asia, highlighting the need to combat transboundary pollution through international cooperation.

disposability wherein the most vulnerable members of the population are figured as surplus and thus capable of being recruited as disposable labor. According to David Pellow, "although all human beings contribute to the waste stream, we rarely share the burden of managing garbage and pollution equally" (1). This unequal burden means that those responsible for the generation of vast quantities of waste do not have to reckon with the aftermath of their consumer choices based on their privileged position in the Global North. Yet, as Michelle Yates argues, "waste is on longer merely an object or result of production" but rather an "essential element of capitalist production" that necessitates the "wasting of human lives" (1681). She notes how conventional approaches to waste typically focus on consumption, distribution, and excretion of matter external to humans rather than production—a move that prevents us from recognizing how humans have been figured as waste in capitalist societies.

Wong's poetry engages with a longer history of Asian immigration to North America, which has been shaped by literal and figurative conceptions of waste, to highlight the recycling of xenophobic rhetoric and policies. The Chinese Exclusion Act of 1882, the first of several exclusion laws restricting the naturalization of Asians, formalized through federal legislation the US discourse of Chinese immigrants as unassimilable coolie labor. The influx of Chinese laborers in the late nineteenth century not only threatened the racial purity of the nation, but also signaled the advent of "infectious" ideologies across the West, a notion reinforced by miners, pioneers, and sojourners who viewed California as the limit of continental expansion and a pristine wilderness untouched by capitalism. As cheap, exploitable labor, the Chinese served as scapegoats for the imagined economic and moral decline of America. Indeed, cultural ephemera, literary texts, and visual media cast the Chinese as subhuman vectors of diseases, such as bubonic plague and syphilis. Partly because racialized zoning laws had restricted the settlement of the Chinese to specific sectors of cities, their densely populated communities were viewed as moral cesspools, furthering the perception of the

Chinese as a polluted race incapable of assimilation and as a risk to the health of the body politic. Yet, in the decades following the passage of the Chinese Exclusion Act, perceptions of the Chinese drastically shifted, and the discourse of yellow peril morphed into that of the model minority by the latter half of the twentieth century. Even so, the rise of China as an economic and military power in the twenty-first century has reignited anxieties over the Chinese diaspora's unknowable allegiances, with twenty-first century rhetoric re-invoking images of the yellow peril in heightening the otherness of Asian immigrants.

Waste and pollution continue to be mobilized against low-income communities and communities of color regardless of their nationality, but such concepts have increasingly gained material force. Robert Bullard and Beverly Hendrix Wright note how "Blacks, lower-income groups, and working-class persons are also subjected to a disproportionately large amount of pollution within their workplace as well as their neighborhoods. For example, much of the industry which is the source of an area's pollution problem is found near minority and lower-income neighborhoods" (71). For these groups, hazards extend from the workplace to the home. Building on the work of environmental philosopher Robert Higgins, whose research investigates racial environmental inequities, Julie Sze notes how "racial segregation at work and at home, insofar as it generates perception of populations as pollutants, facilitates the environmental burden placed on those communities" (54). The advent of globalization has amplified this logic, situating repositories of waste inside and outside the borders of the nation. The increasing movement of people, objects, and ideas across borders has meant that the border has, yet again, become a contested site of health and sanitation, and otherness, when understood in terms of waste, becomes a matter of "there" and "them" rather than "here" and "us." Indeed, as Sarah Jaquette Ray suggests, immigration continues to be framed as "dirty, ecologically irresponsible, and morally impure," a characterization that

"dehumanizes, even animalizes, immigrants and ignores the broader, perhaps less viscerally disturbing, sources of the environmental and humanitarian crisis occurring along the border" (148).

Because Wong adopts a fluid approach to waste, moving from electronic waste to household waste in a free-flowing fashion, this epilogue follows her lead in thinking expansively about what counts as waste as high-tech objects increasingly trouble the boundaries between conventional forms of waste—solid, liquid, organic, recyclable, hazardous. Even as Wong critiques the ideologies that make possible the disguised movement of waste, Wong's poetry is less concerned with following the specific routes by which waste is transported than with the sites of accumulation where waste and pollution collect—the peripheries and peripheral bodies. In *forage*, waste is not merely the material objects that facilitate modern life, but also speak to the landscapes and bodies that have been wasted over generations. For instance, in "opium," an exploration of what the speaker calls "chemical history narcopolemics," the speaker links the "crack war" to the Opium Wars, military campaigns waged by Great Britain to open China's ports to opium (13). Dependency, whether it be addiction or welfare, is not framed as an individual's responsibility but part of a larger historical arc predicated on the sale of addictive products. Additionally, poems like "value chain" and "perverse subsidies" ask readers to consider how the maintenance of urban life is dependent on the ruination of bodies and environments across the globe. And, "sort by day, burn by night" brings into focus the afterlives of material objects, entities that persist as chemicals in the bodies when discarded by consumers. Through poems like these, Wong situates the management of waste as a form of temporal and geographic deferral, an offloading of responsibility for our wasteful choices to future generations.

In *forage*, each poem's formal composition speaks to Wong's efforts to make visible the connections between familiar binary oppositions—"here" and "there" as well as "us" and "them." For instance, in "value chain," each of the lines in the poem read like discrete entries, and Wong's

speaker articulates the underlying desire animating the poem before turning to seemingly unrelated reflections on her state of being:

> how to turn english from a low-context language into a high-context language?
>
> tomorrow and tomorrow and tomorrow takes me back hundreds of years
>
> the internal frontier: my consumer patterns . . . (11)

The space between lines appears to function as a barrier to meaning, but each line's enjambment suggests continuity between each of these ideas. In making readers draw connections between language, history, and capitalism, Wong models a reading practice that she hopes can draw into relation inherited traumas and toxic legacies that have been distributed across time and space to corporations' benefit and to consumers' unwitting detriment. The cut-and-paste composition of the poem also speaks to the distributed practices and knowledges that are part of the process of endowing value to material objects. Just as the poem seeks to find language that is capable of encompassing the multiplicity of the speaker's identity, the poem itself is a commodity whose value is the sum of its formal and stylistic elements. Yet, as readers learn, the value is still linked to the "military industrial complex imbedded in my imported electronics" (11), geopolitical conflicts that make possible the opening of new sites of resource extraction, product assembly and manufacture.

The poem's minimal usage of punctuation sharpens its critique of waste infrastructure as a form of deferral. Aside from two question marks, the only other terminating punctuation in the entire poem is a period following a reference to Rachel Carson's landmark critique of pesticide use in the agricultural industry, foregrounding Carson's interrogation of "the contamination of man's total environment with such substance of incredible potential for harm—substances that accumulate in the tissues of plants and animals and even penetrate the germ cells to shatter or alter the very material of heredity upon which the shape of the future depends" (8). In greeting "silent spring" (11), the speaker not only situates her thoughts within a wider body of scholarship on chemical

exposure but also draws attention to the silence and absences that shape her sense of self and the world around her. The poem concludes with an incomplete sentence that recognizes the persistence of colonial and capitalist violence in the technologies that make possible the transformation of English from a low-context to high-context language, that contribute to the formation of the poem itself: "military industrial complex imbedded in my imported electronics" (11).

Beyond its modeling of critical reading as a form of active negotiation of the invisible practices that structure modern life, the speaker's attempt to "turn english from a low-context language into a high-context language" speaks to the inability for language to encapsulate the factors that contribute to her heterogenous, multiple, and hybrid identity. The poem explores the body as a site of contestation, where the individual's so-called "internal frontier" is simultaneously defined by their actions ("my consumer patterns"), their family's experiences ("my mother's silences"), and environmental matter ("cigarettes waiting for lungs to reside in") (11). Here, the speaker is affected not only by the silences and traumas that shaped previous generations but also by the invisible threats that pervade the built environment. In giving agency to a carton of cigarettes "waiting for lungs to reside in," the speaker suggests that material objects are, in the words of Jane Bennet, vital matter with the capacity to shape everyday experiences despite their inherent disposability (6). The speaker thus suggests that the forces that act upon her identity are the result of multidirectional—not unidirectional—flows of people and pollution.

Although the Asian (North) American experience has been shaped by the pursuit of the good life, with its idealized promise of freedom afforded by upward economic mobility, that dream is dependent on the purchase of material objects and affective states of being. "Perverse subsidies" allows readers to see how domestic corporations offload problematic matter(s) to foreign territories for a price. Paying to remove waste, however, does not mean that the speaker's consumer choices, emblematized by "cucumber rinds, ragged underwear, clumps of hair & toilet paper" (21), cease to

exist once they have been removed from sight and mind. Rather, the poem reveals how everyday household objects persist in the environment as part of an ecosystem where "seagulls & carrion will feed on rotting leftovers" (21) until those animals become "full, wasteful, extravagant to extinction" (21). In imagining the "extinction" of wildlife, the poem evokes images of birds and marine life whose bodies have been filled with plastic, unintentional victims of human overconsumption. Yet, the speaker "never [has] / to look at it, never [has] to imagine" the casualties of her consumer choices thanks to the infrastructural systems that channel waste through circuitous routes. This environmental privilege—what Lisa Sun-Hee Park and Pellow define as access to spaces and resources removed from ecological harm (4)—means that the speaker has the financial means to "pay for you to take [her] garbage away" so that her life is free from the affects mobilized by waste. Pellow also notes how "those social groups that consume the most natural resources (environmental 'goods') and create most of the waste and pollution are the least likely to have to live or work near the facilities that manage those environmental 'bads'" (1). That is, her positionality affords her a different experience of the built environment that is free from "rotting leftovers" and "fetid life," highlighting the role of social and economic factors in shaping not only awareness of but also exposure to waste (21).

This ignorance corresponds to the modus operandi of contemporary waste management, which largely adheres to the following proverb: out of sight, out of mind. Garbologists William Rathje and Cullen Murphy describe how "[p]eople put their garbage in the garbage can under the kitchen sink, in the bathroom, in the den, and then someone collects it all and takes it out. The garbage that is taken out is eventually left at the curb or in the alley, and very soon it is gone. All of this garbage is quickly replaced by other garbage. Garbage passes under eyes virtually unnoticed, the continual turnover inhibiting perception" (45). As Christof Mausch suggests, waste is "easily forgotten and dismissed" and "not meant to reappear" once it has been rendered invisible (6). In

the US, household waste and other forms of urban debris, deposited in containers that obscure their contents, are primarily transported to one of four destinations: landfills, waste-to-energy plants that incinerate garbage, recycling plants, or, in some cases, dumps in foreign countries. Yet, these sites are routinely hidden within the built environment, masked by clever geographic manipulations that hide waste from public view and benign names that emphasize the "naturalness" of manmade sites. This aversion to waste is linked to the proliferation of advertisements for modern cleaning products that tout their ability to neutralize odor, remove stains, and render waste invisible as well as the overwhelming increase in digital media celebrating the life-changing magic of tidying up, living minimally, and fixing up dilapidated houses. These examples point to the way in which the proverbial good life is dependent on the elimination—or, at the very least, concealment—of waste and other forms of debris.

As the poem develops, the speaker turns from everyday forms of waste to other remains that have largely disappeared from public consciousness: "corpses of Iraqi civilians, the ghost of ken saro-wiwa, the bones of displaced caribou" (21). The movement from the quotidian to the sensational implicates everyday objects—their manufacture and their disposal—in global acts of violence against humans and nonhumans predicated on the exploitation of natural resources. This violence subsidizes the petroleum-based products that constitute modern life, ensuring that the world's supply of oil remains both accessible to consumers and profitable to petrochemical corporations. Taking this into consideration, it is not surprising then that the "highway" masquerades as a "graveyard" because automobiles, whether they are personal vehicles or garbage truck, are not only capable of harming life with reckless driving but also dependent on resources obtained at the expense of victims of war, political prisoners, and vulnerable wildlife. Moreover, the roads on which these machines of death travel are also produced from petroleum products, with asphalt and plastic crucial to the transportation networks needed to move waste outside of the city.

In the second half of the poem, the speaker turns from the violence of resource extraction to the possibility of carving out a more sustainable existence that does not conform to the greenwashed narratives proffered by corporate entities. The speaker locates "small green / weeds" in the "cement cracks waiting to return earth / to her rightful promise" (21). Here, weeds are not framed as invasive species that must be removed to allow other life to flourish but rather as the potential for life to persist in spite of human interventions emblematized by "cement." As Ashley Carse writes, "weediness is a point of departure for making sense of relations with other places and times—to past aspirations and potential futures" (12). The ability of weeds to propagate in even the harshest conditions serves as the basis for environmental and social transformation, compelling the speaker to "begin walking & / bicycling for my life, for our lives, for the furry bats that await night's return, spring's diminishing secretions to / revive & spill forth" (21). The speaker's conscious decision to get out of the car, previously implicated in global conflicts over oil, reflects her increased sense of responsibility not only for herself but also the community in which she lives, an entanglement of human and, crucially, nonhuman inhabitants. Yet, as Samantha Walton argues, these lines highlight the inherent privilege of being able to make this promise: "this desperate and guilt-stricken promise draws attention to the difference between the position of the 'i' and the experience of the worker" (278). Removing oneself from exploitative systems of waste might be more beneficial to the speaker, the "i," than those affected by her actions, "you," given the persistence of capitalist enterprises despite individual dissent and protest.

"Perverse subsidies" is among the poems in Wong's collection that feature one of the more unique aspects of her work: handwritten marginalia in both English and Chinese that encircle the printed text. These notes not only heighten readers' understanding of the poems by providing relevant information (e.g. information about the prevalence of specific chemicals in certain industries; scholarly interpretations of world events) but also encourage readers to view the poem as

a product itself—one that has been written, edited, and printed using the same machinery that will be discarded after becoming obsolete. In "perverse subsidies," the speaker's handwritten note quotes biomimicry expert Janine Benyus. This quote provides an alternative way for understanding manufactured objects as inseparable—rather than distinct—from the environment: "Our cars, our computers, our Christmas tree lights all feed on photosynthesis as well, because the fossil fuels they use are merely the compound remains of 600 million years' worth of plants and animals that grew their bodies with sunlight" (qtd. in Wong 21). In highlighting the need to find and celebrate botanical life amidst concrete and asphalt, the speaker pushes back against an idea explored in the poem "recognition/identification test": that readers might be more familiar with the names of corporations rather than the names of plants. Such ignorance prevents us from recognizing the organic components of inanimate objects that make possible the functioning of modern life. The juxtaposition of harmful accounts of biological and chemical operations with the framing of photosynthesis as another restorative process highlights what Pauline Butling describes as Wong's ability to "step out of the ironic impasse with her phonic and semantic play; she finds generative potential *within* the materials at hand" (330).

In this way, Wong shows how waste does not merely disappear after being taken away but is transformed—whether it is buried in landfills, burned in incinerators, or dismantled in scrap yards—across space and over time. How this waste is "transported across oceans & into sad / rural neglect," as the speaker notes in "fluorine," is largely invisible to the general public by design (14). Even if the speaker could see the routes undertaken by her household waste, she might not be able to imagine the circuitous path undertaken by her garbage. This transformation undergirds another poem, "sort by day, burn by night," that exposes how our culture of disposal should be viewed as a culture of resource management, with e-waste recycling sites better understood as production facilities aimed at harvesting precious metals. In "sort by day, burn by night," the speaker follows

the disguised routes of discarded materials from North America to Asia, where she locates the accumulation of e-waste in the bodies that inhabit Guiyu, an agglomerate of four villages in China's Guangdong province. In illuminating the environmental degradation of Guiyu, Wong aims to collapse the boundaries between "here" and "there" to show how the center and the margin are intrinsically linked. Drawing the foreign and the domestic into relation vis-à-vis electronic waste reveals the racialized dimensions of waste infrastructure, which sustains urban life through the movement of waste to unimaginable zones that will ultimately become uninhabitable if corporate practices and consumer habits remain unchecked. As the speaker asks, "what if your pentium got dumped in guiyu village? / your garbage, someone else's cancer?" (47).

Written as a response to *Exporting Harm: The High-Tech Trashing of Asia* (2002), a documentary produced by the Basel Action Network (BAN), "sort by day, burn by night" exposes the mountains of circuit boards "most profitable and most dangerous" (46) that litter the streets of Guiyu. A combination of technological innovation and marketing strategies has spurred the development of e-waste. Guiyu, in particular, has developed a reputation as a center for e-waste and, consequently, a polluted environment. In the 1990s, the region underwent a significant transformation as e-waste recycling conducted in home-operated workshops surpassed the cultivation of rice as the town's primary industry. Although the Chinese government has restricted the entry of e-waste since the 1990s, illegal shipments of waste from North America and Europe reached Guiyu via Hong Kong and other ports in Southeast Asia. In Guiyu, "e-waste recycling operations [are] conducted by small scale family-run workshops, with approximately 100,000 migrant workers employed in processing e-waste" (Huo et al. 1113). These migrant workers come from rural China to perform this lucrative but hazardous work. Whereas critical interrogations of solid waste in the US make a distinction between home and workplace in describing the disproportionate burdens shouldered by low-income workers and workers of color, Guiyu is unique for the way in which the division between home and

workplace is collapsed. From a capitalist perspective, this collapsed boundary is the foundation for efficiency and productivity, ensuring that workers can continue production without losing time to commuting and other unprofitable delays. Recycling activities in Guiyu are divided by type of waste and include "the stripping of metals in open-pit acid baths, the removal of electronic components from printed circuit boards by heating over a grill, chipping and melting plastics without proper ventilation, and recovering metals by burning cables and parts are common practices. Unsalvageable materials are disposed of either by dumping in fields and rivers or by open burning" (Leung, Cai, and Wong 22). Workers disassemble e-waste with simple tools ranging from hammers and screwdrivers to pliers and wire cutters, and few workers are equipped with proper protective gear, as most rely on masks, gloves, and goggles while performing this hazardous labor. Clean-up operations, including the opening of an industrial park, have focused on reinserting a separation between home and workplace; even as workers are still likely exposed to hazardous materials in the workshops housed at the industrial park, they are able to return home. Nevertheless, that formulation overlooks the persistence of chemicals in bodies and the environment beyond initial exposure.

Wong's poetry suggests that the contamination of Guiyu extends from its inhabitants to its environment, creating what Steve Lerner calls a "sacrifice zone" that allows adjacent industries, like manufacturing, to thrive at the expense of Guiyu and its environs (2-3). Drawing from the emerging field of epigenetics, Wong suggests in "fluorine" that the violence of this environmental transformation might not be known until "generations later" (14), a deferment that destabilizes fixed conceptions of self and identity and that reinforces what Stacy Alaimo has called "bodily natures" or the "constant interchange [of the human body] with the environment" (14). As chemicals developed for heavy industries enter the mainstream marketplace, readers must, in Wong's words, "in mundane / acts assume poison unless otherwise / informed" (22). But even with this

assumption, it can be difficult to locate the material responsible for exposure after being diagnosed with bodily illness or injury. For instance, in "vessels," the speaker notes how "scientists can't tell how the PBDEs entered / me" (54). The bioaccumulation of polybrominated diphenyl ethers (PBDEs) in the speaker's fat cells means that "you and me, baby" (54) are exposed to persistent organic pollutants, chemicals that persist in the body long after exposure and that may be passed down through generations. Although Guiyu no longer resembles the spectacular images captured by Greenpeace activist Lai Yun and photographer Edward Burtynsky following the concentration of e-waste recycling operations in a government-regulated industrial park with ventilation systems and water treatment facilities in 2015, the damages wrought to the bodies and environments inhabiting Guangdong province might not be known until the descendants of migrant and local workers reach maturity. Scientific studies conducted in the area adjacent to Guiyu have already detected elevated levels of lead in children's blood, which may be responsible for neurological or kidney damage later in life (Huo et al. 1116). Thus, the environmental privilege discussed in "perverse subsidies" does not render the speaker immune to the afterlives of her garbage; rather, the transformation of e-waste into its constitutive parts, a compilation of "lead, aluminum, iron, / plastics" (46) defers the burden of her garbage onto workers in developed nations and, potentially, future generations. In her discussion of humans-as-waste, Yates suggests that surplus populations can be "theorized as a kind of disposability and throwing away within capitalism" (1680). She notes how the "body of the laborer is used up or wasted at accelerated rates in order to secure the most profit. Those who have work could easily be disposed of and end up as part of the permanent surplus population as well" (1680). In "sort by day, burn by night," the speaker lingers over the possibility that her waste might contribute to the wasting of another living being, negotiating the moral and ethical implications of the endless consumer choices made possible by the advent of neoliberalism.

At the time of the volume's publication (2007), the US had been negotiating a series of biosecurity "threats" of Chinese origin: children's toys made with lead. According to Mel Chen, the barrage of images in US media accelerated "the explosive construction of a 'master toxicity narrative' about Chinese products in general, one that had been quietly simmering since the recalls in 2005 of soft Chinese-made lunchboxes tainted with dangerous levels of lead" (164). This "master toxicity narrative" frames "Chinese environmental threats neither as harmful to actual Chinese people or landscapes, nor as products of a global industrialization that the United States itself eagerly promotes, but as invasive dangers to the U.S. territory from other national territories" (165). Drawing upon lingering fears of the Yellow Peril, this "master toxicity narrative" reinforces xenophobic perceptions of Chinese objects and bodies as unclean and morally suspect. Ray suggests that the "ecological othering of China as a nation serves more to perpetuate anti-Chinese sentiment than it does to protect the environment, as protecting the environment would involve targeting much more specific (but more complex and less identifiable) sources of the problem, such as lax environmental regulations and labor laws" (183). She notes the wide variety of positions occupied by the Chinese populace, from members of the Chinese Communist Party (CCP) to the e-waste recyclers carving out a living in Guiyu, which make broad characterizations less useful for interrogating the political, neocolonial, and capitalist agendas that emerge from "environmental disgust" (182), a cultural discourse deployed against communities viewed as environmental threats.

However, in noting how "cancer / consumes en-masse" in "sort by day, burn by night," the speaker understands how distinctions between "here or there" are largely irrelevant given the ongoing flows of people and matter across geographies and temporalities (47). Recounting Operation Ranch Hand, the military campaign that called for the bombing of Vietnam with "rainbow" agents previously used in agriculture, Rachel C. Lee describes how "a kind of border wall exists between acts of war on enemy territory and acts of industry in domestic settings" ("Lattice"

2). Lee suggests that the logic underpinning this ideology is fundamentally flawed given the way in which chemicals move through ecological systems. As a result, people in the Global North have developed a "fiction of comfort" that involves "imagining themselves geographically protected from the toxicant spillovers and secondary contaminations that will occur over 'there' (in foreign territory) and not also 'here' (in the homeland)" ("Lattice" 2). Wong dispels this "fiction of comfort," perhaps a form of environmental privilege afforded by "perverse subsidies," by suggesting that cancer "consumes en-masse." Here, the speaker not only plays with the idea of metastasis—the development of tumorous growths in cancer patients—but also suggests that cancer does not make distinctions between individuals. In positioning cancer as the result of environmental exposures linked to global infrastructures, Wong's poetry can thus be understood as illuminating what Hsuan Hsu calls the "circuits of 'transcorporeal' exchange between the immense and the molecular, between landscape and bodily matter" (275).

Wong's citation of Walt Whitman's "One Self I Sing" in "sort by day, burn by night" functions in two ways: first, it challenges the assumption that individuals are valued equally; and, second, it highlights how the production of literature predicated on equality and social justice can still be implicated in acts of injustice. In accessing Whitman's celebration of democracy via her laptop and writing her own indictment against the abuses of capitalism, the speaker recognizes her complicity in the degradation of Guiyu and its inhabitants—what she terms "keyboard irony" (46). In documenting the work of migrant laborers who salvage "circuit boards / most profitable and most dangerous" and "liberate recyclable metals" (46), the speaker aligns herself with the workers, breaking down keyboards, laptops and CRT monitors by listing their constitutive parts (lead, aluminum, iron, and copper) so that readers can see where metals come from in the contemporary supply chain. Although Whitman's poetics of merger and embodiment aim to equalize individuals by locating them in the same poetic line, his rhetorical moves in support of democratic ideals ignores

the fundamental inequalities engendered by capitalism. Rather than adopting Whitman celebratory tone to anatomize the body electric, the speaker sings "the toxic ditty of silica" to expose the poisoning of foreign bodies and environments (46).

In reckoning with "keyboard irony," the speaker questions how her democratic ideals might be compromised by the adoption of a "shiny laptop" that can be viewed as a compilation of metal and plastic that might end up as "someone else's cancer" (46). Indeed, "sort by day, burn by night" insists on the materiality of information and communication technologies that make possible immaterial, intangible products, ranging from digital applications to global financial systems. In this way, Wong recognizes her complicity in harming bodies and environments in Southern China, a sense of responsibility heightened by her family's ancestral ties to the region. In describing "keyboard irony," the speaker alludes to the dilemma of advocating for environmental and social justice using tools that will inevitably contribute to the problem being critiqued. This dilemma extends to the field of literature more broadly, with the circulation of literature dependent on information and communication technologies that may poison workers in Asia and Africa. Wong has reflected on her complicity in interviews, noting her efforts to find more environmentally-friendly ways of recycling her electronic devices: "I'm implicated by the computer I type this on, and it is hard, unresolved, painful to think about what was involved in both the manufacturing of the computer (mining, pollution, labour exploitation, etc.) as well as the eventual disposal of it (often shipped to places like China and Africa for toxic dismantling that hurts people)" ("4/4").

Even as electronic devices are responsible for the acceleration of information and communication technologies, the short lifespan of such devices and their role in fostering notions of speed and efficiency belie the long duration of their toxic material components that persist in "bony bodies" as cancer (46). Sabine LeBel implicates planned obsolescence as "a type of slow violence, and is also a structuring paradigm of the information age that obscures the environmental problems

it causes behind the veneer of technological progress" (301). She notes how planned obsolescence activates "multiple sets of temporalities associated with ICTs: their speed, acceleration, and simultaneity in use; the time it takes for them to move across the globe as raw materials, components, products, and trash; and the slow violence they enact through long-term pollution, including the time-specific, multigenerational, or contingent effects associated with certain toxic chemicals" (308). Wong engages with the multiple temporalities engendered by computers and other electronic devices that sustain the information and communication technologies on which global financial markets depend for real-time transactions. In "sort by day, burn by night," the conflation of "old cathay" and "cathode ray tube" highlights the tension between pre- and post-industrial China, showing how two temporalities persist even as China has emerged on the world stage as a global superpower second only to the US in economic output (46). Such temporalities exist side by side, with "primitive" tools for disassembly of electronic devices occurring in regions adjacent to the high-tech manufacturing centers that satisfy the world's demand for what Lebel terms "fast machines" (300). Buying into techno-utopian discourse, then, is a means of perpetuating the differentiated experiences of the built environment, of sustaining capitalism by contributing toxic matter to an industry predicated on harnessing difference (geographic, racial, socioeconomic) for profit. That the US remains one of the only developed nations to not have ratified the United Nations Basel Convention, which prohibits the export of e-waste to developing countries, is not surprising given its association with what Wong decries as the deadliness of hyper-capitalism in "reverb" (60).

While China's lax environmental policies allowed for the importation of recyclable materials that previously aided in its transformation into an industrial power, its relationship with the West has changed following its emergence on the world stage as a global superpower. In 2018, *The New York Times* proclaimed e-waste as the fastest growing waste stream in the world (Larmer). Recently, China

has overtaken the US as one of the largest producers of e-waste, which is not entirely surprising given its role as the manufacturing center of the world as well as its growing middle class. The CCP has also authorized environmental policies aimed at restricting the importation of multiple forms of waste. As part of Operation National Sword, an initiative launched in late 2017, the Chinese government has enacted more stringent rules for the importation of plastics, transforming the waste industry by forcing consumers in the West to find new repositories for their waste or re-evaluate their existing recycling programs. Although framed as an environmental initiative, Operation National Sword has been interpreted as a policy move aimed at reorienting international politics: by rejecting the West's waste, the Chinese government has disrupted existing relationships and made other countries vulnerable to pollution and particulate matter from waste, whether it be electronic or plastic (Katz). With China's stricter enforcement of import bans, including a new policy aimed at curbing other scrap material from entering the country, and investment in industrial parks with more advanced infrastructure, Guiyu has been supplanted by Agbogbloshie, a neighborhood of Ghana's capital, Accra, as the largest e-waste dumpsite in the world, where workers extract metals from discarded e-waste in open fires (Shibata). The stricter enforcement of regulations in Guiyu and China's ongoing rejection of waste imports have meant that e-waste has been transported to alternative dumping grounds where the financial benefits of extraction outweigh the long-term risk of illness and injury.

China's rejection of the West's waste has had ripple effects on its neighbors, whose limited economic and political power means that they are susceptible to the redirection of waste streams from their wasted and wasteful neighbor. Even so, the stark depictions of waste and waste salvaging has allowed neighbors to regain control over waste flows in recent years. For instance, in 2019 the Philippines rejected a container ship carrying 69 containers of rubbish (1,500 tons) filled not with plastic waste as described but household and electronic waste from Canada (Ellis-Peterson). This

waste had been languishing in Philippine ports since 2013 and 2014. A presidential spokesman for President Duterte denounced the treatment of the Philippines as "trash" by foreign nations, highlighting the ways in which ideas of waste can be applied to objects, people, and places (qtd. in Ellis-Peterson). Like the Philippines, Malaysia has also denounced the shipment of waste to its waters, returning 3,000 tons of waste from the UK, the US, Australia, Japan, France and Canada (Ellis-Peterson). That we see where matter accumulates is indicative of the ongoing efficacy of this ideology as well as the inherently invisible nature of infrastructure, its tendency to fade from view until its breakdown or rupture. Container ships bearing toxic waste come into focus precisely because they are not allowed to deposit their cargo, illuminating the unsustainable routes upon which our manufacturing and consumption practices are predicated. Yet, questions remain about where and when this waste will ultimately be negotiated.

M. Ann Phillips reminds us that "the contamination of our environment is a manifestation of the toxic elements of our culture. Chemical production and use are seen by many as an inevitable part of progress, and have become an accepted part of life" (36). *Forage* works to expose those elements by turning to the migrant labor required to disassemble and recycle e-waste. The bodies of laborers at sites like Guiyu are the archive, the documentation, of that which would otherwise remain invisible: the intimacies between corporate and military power, the gratuitous excess of neoliberal regimes that rely on infrastructure to assert control. That such archives have not been readily visible or available is a symptom of what Nixon calls slow violence. Slow violence contrasts traditional forms of violence that are "immediate in time, explosive and spectacular in space, and as erupting into instant sensational visibility" (2). Nixon implicates infrastructure in slow violence, noting how the construction of infrastructure, whether it be for oil extraction or flood control, reorients people and the abuses to which they are subjected. Infrastructure, like slow violence, exceeds human lifetimes; projects that might begin under one political regime may not be completed

until years later under the direction of another administration. This delayed violence, however, affects producers, consumers, *and* recyclers on both sides of the Pacific.

Though contemporary consumer practices are oriented towards techno-utopian futures, Wong shows us the need to dwell in the present and, perhaps more importantly, reflect on the past's irruptions in the present. Although Wong recognizes the limits of poetry in providing a solution to the slow violence of waste, she nevertheless offers a means of reckoning with the networks that obscure what she refers to as the "annoying" and "deadly" effects of poor consumer choices in "reverb" (60). She reminds readers that the objects we use and eventually discard will continue to exist even after we stop thinking about them, necessitating us to approach things through a longer temporal framework that accounts for the present, past, and future. Moreover, Wong's poetry works against the limitations of infrastructure, suggesting a need for restructuring society that begins with individual action but also requires the assistance of larger forces in shifting social, political, and economic systems that perpetuate environmental injustice.

Like Wong's poetry, this dissertation cannot exist outside these problematic circuits of production and consumption. The writing of this dissertation has spanned the lifespan of two Apple MacBook Pro laptops: one purchased in 2012 and another purchased in 2018. While the 2012 device remains functional, it has reached the end of its technological lifespan, incapable of handling the system-intensive applications (Zoom, PowerPoint, etc.) that have become standard in academia. The obsolete device has become more valuable for its constituent parts—an assemblage of precious metals and manufactured plastics—than any price obtainable on the resale marketplace for the whole product. When I finally choose to part with the machine, it will likely be taken to an e-waste recycling center for disposal. Yet, this is not the norm for millions of consumers across the globe. The majority of electronic devices will take uncertain routes from homes and offices to the landfill: they may be recycled in a facility specifically designed to disassemble consumer electronics;

they may languish in a warehouse; or, in most cases, they will be shipped and sold to e-waste recyclers outside of the US without consumers' knowledge or consent. Whose life am I impacting by upgrading my laptop to finish writing a piece that critiques, among other things, environmental and social injustices catalyzed by capitalism and colonialism? What forms of justice can be accomplished in spite of this "keyboard irony"? These are the questions that Wong asks us to reckon with in exposing the slow violence wrought by infrastructures of waste.

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