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Our Shared Planet

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Notes from the Editors

We, the editorial team, are delighted to present *Our Shared Planet: The Environment Issue* Volume 60:3/4. Our special issues often come from proposals by potential guest editors. This theme, however, came to us from our Editorial Board at our 2017 meeting at ASA in Chicago. We put out a call for proposals for an issue on the environment entitled "Our Shared Planet," and received two extraordinary submissions, conceived very differently, from two sets of guest editors. When we brought these to the 2019 meeting in Hawaii, we knew it would be a difficult choice. What we didn't anticipate is that the Editorial Board would accept both! Thus, the double-album! Not two sides, A and B, but a double issue with two curated pathways and conversations, with echoes between, to be explored in tandem.

The environment is a global issue, experienced locally, if unevenly. For many, the local effects have become increasingly intense. For the editorial team in Lawrence, Kansas, we feel those local effects as our region faces perilous ecological challenges around water usage and agriculture. The Ogallala Aquifer that underlies Colorado, Kansas, and Nebraska is quickly drying up, threatening to make the region that *AMSJ* publishes from a desert. Our regional ecological crisis forced us to think about Climate Change and the realities of desertification in our immediate future. It called for us to respond as an interdisciplinary humanities journal. How might we contribute to the refashioning of our environmental narratives that guide many of cultural, economic and political policy choices?

Our editorial team has put a great deal of intellectual energy into this publication alongside the guest editors. We are especially pleased that these two volumes are so timely and representative in terms of scholarly topics and scholars from across North America and Europe. We could not be more delighted.

Sherrie Tucker and Randal Maurice Jelks

0026-3079/2020/5904-023$2.50/0 American Studies, 60.3/4 (2021)

Introduction: The Climate Issue

Timo Müller and Michelle Yates

Climate is emerging as the predominant problem of the twenty-first century. The existential threat posed by climate change, which has long been understood in the abstract, is beginning to take concrete shape for more and more people. Released by the United Nations' Intergovernmental Panel on Climate Change (IPCC), the Sixth Assessment Report (2021) shows that climate change is not only a dire present issue but also now irreversible for the next few hundred to a thousand years. The Sixth Assessment Report also documents an increased certainty that there will be more frequent and more intense severe weather and climate-related extremes. People are already experiencing the effects and "slow violence" of climate change through heat waves, heavy precipitation, sea level rise, wildfires, drought, flooding, tropical cyclones, and the rapid loss of marine fauna. Agriculture and yield production in the United States and around the world are negatively impacted by climate change, and this impact will continue in the future. Climate change threatens lives and livelihoods across the world. These developments have engendered a variety of cultural practices, discourses, and imaginaries that range from targeted demonstrations (e.g., People's Climate March, Extinction Rebellion) and lawsuits (e.g., Juliana v. United States) all the way to influential scenarios of future decline or renewal. These cultural manifestations in turn shape not only our moral, political, and economic responses to climate change but our very understanding of climate itself.

As Matthew Schneider-Mayerson (2015) has pointed out, there is a dearth of scholarship within the field of American Studies addressing climate change even though the United States is a main driver of climate change. Schneider-

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Mayerson notes that there are no special issues within the field of American Studies dedicated to climate, and that it is only in the past few years that there have been American Studies Association conference panels dedicated to the topic.

Since the 2015 publication of Schneider-Mayerson's critique, there has been one special issue on climate in the field, "Cli-Fi and American Studies," edited by Susanne Leikam and Julia Leyda for the journal *Amerikastudien/American Studies* (2017). As Leikam and Leyda note in their Introduction, the twenty-first century has seen a "remarkable burgeoning of a heterogeneous body of cultural texts, including literature, film, visual arts, and performances, and scientific works that take on the challenge of prompting global audiences to engage emotionally and intellectually with the implications of anthropogenic climate change" (109). They further note that "the conceptual, methodological, and theoretical frameworks of American Studies offer extensive expertise for analyses of the heterogeneous body of cultural texts engaging with anthropogenic climate change" (111).

In 2020, *American Quarterly* published a special issue on "Energy Pasts and Futures in American Studies," edited by Natasha Zaretsky, Michael Zizer, and Julie Sze. Though the special issue has important overlaps with an analysis of climate, it is focused on the also relatively underexplored topic of energy studies. Meanwhile, a variety of social science and humanities journals whose scope partly overlaps with that of American Studies have recognized the importance of engaging with climate. Some have published special issues that include case studies about the United States, for example, *Theory, Culture & Society*'s 2010 special issue on "Changing Climates"; *ISLE: Interdisciplinary Studies in Literature and Environment*'s 2014 special issue on "Global Warming"; and *Polygraph*'s 2020 special issue on "Marxism and Climate Change."

Our aim with this special issue of *American Studies* is to expand the conversation around climate within American Studies, and to push the field toward a more robust dialogue and thorough engagement with all aspects of climate change. One of the things that an American Studies approach to climate can offer is an interdisciplinary perspective that captures the socio-cultural, political, and ontological dimensions of climate change, including experiential forms of knowledge that are frequently overlooked or not captured by scientific and quantitative methods. An American Studies approach can address issues that undergird or even shape such methods, for example, the impact of environmental activism, climate skepticism, or corporate greening strategies on the perception and negotiation of climate change in the United States and beyond. As the articles in this special issue exemplify, an American Studies approach provides structural analyses of climate that attend to history, social power and hegemony, intersectional perspectives, and a centering of climate justice.

Transdisciplinary Approaches

As far as academics have contributed to the production of public knowledge about climate change, this contribution has overwhelmingly come

from the natural sciences. Within the academy, the predominance of the natural sciences manifests on material, semantic, and structural levels. Programs in Environmental Studies, for example, are typically run by the natural sciences, with a few contributions from the quantitative social sciences but rarely from the humanities. The legitimacy and importance of empirical research on climate are evident. The natural sciences can tell us how the climate is changing, and they can project how these changes will affect global and local ecosystems. What they cannot tell us is how humans perceive, understand, and imagine the climate; how it affects their attitudes and behavior; and how that translates into political action.

Yet these human dimensions frame empirical knowledge about the climate on both ends. They shape the basic categories and approaches—including the very notions of climate and of the human—that the natural sciences use to gather data and develop projections. They also influence how these data are interpreted and which projections are regarded as plausible. They also determine whether and how this knowledge makes its way into society at large. These human dimensions need to be understood in order to address some of the most crucial questions around climate today.

Scientists have spent decades pointing out the dangerous consequences of climate change and proposing a range of countermeasures, but attitudes have been slow in changing and very few of these measures have been meaningfully implemented. To accelerate this process it will not suffice to gather more empirical data. The most pressing task is to examine the discourses, practices, and imaginaries that shape climate politics from local communities all the way to national and transnational organizations. This kind of examination requires the expertise of the humanities and social sciences.

What the humanities and social sciences explore is not only climate itself, but the discourses that create and modify knowledge about climate: newspapers, television, film, social media, literature, music, photography, oratory, and many others. These media reach much broader audiences than scientific publications, and they affect these audiences in personal, emotional ways. Each medium and each genre can draw on a range of specific techniques for illustrating the impacts of climate (change) on individuals and communities.

The humanities have long examined such processes of knowledge production and aesthetic representation. American Studies has taken a leading role in drawing attention to the power structures in which these processes are entangled, and especially to the construction of social difference along lines such as race, nationality, or gender. These differences challenge unified conceptions of the "human" while at the same time stressing the impact of human (in)action both on the climate and on the way climate affects individuals and communities.

The ambiguous temporality of climate change—*longue durée* yet urgent—indicates the importance of historical research and diachronic perspectives. Climate itself has multiple histories, both as material phenomenon and as cultural concept; its American history is entwined with the history of science and agriculture but also of settlement and imperialism. Climate change is usually

discussed by extrapolating potential futures that demand adjustments in the present—futures that are already the present in parts of the Global South and increasingly in the United States. The political debates around climate change disturb received notions of conservatism and progress. Most environmentalist activism aims to preserve a stable climate, while anti-environmental policies aim to continue received traditions at the price of accelerating climate change.

In engaging questions of climate, American Studies connects with a range of related disciplines in the humanities. This special issue draws on perspectives from history, economy, political science, literary studies, urban studies, geography, and ethnography. The approaches adopted from these disciplines have a common denominator in their qualitative focus, which enables them to trace the complexity of social structures and cultural narratives. The subject of our inquiries, the fluid geographical and cultural entity called America, requires collaboration among these disciplines—collaboration that may result in modifying the terms and procedures each discipline brings to the task.

This transdisciplinary approach puts American Studies in a position to identify and interrelate a wide range of perspectives on climate. It encourages attention to multiple meanings, conflictive perceptions, and hidden ambiguities. It also encourages methodological and epistemological self-reflection. Like all discourses on climate, scholarship in American Studies is structured by tacit presuppositions, conventions, and exclusions. Self-reflection on these issues can help scholars identify and evaluate analogous structures in other discourses and in society at large. This includes conventions of media representation, access to positions of authority in institutions including the media, strategies of politicizing or monetizing climate, vocabularies and iconographies of climate change (*e.g.*, resilience, green technology, or the word "climate change" itself), and aesthetic patterns that shape and are shaped by the sensual apperception of climate.

An American Focus

The United States is an important case study for cultural approaches to climate change. It is arguably the main driver of climate change worldwide, both in terms of per capita emissions and as the center of a global capitalist system that drives up emissions around the world. Not least to legitimize this role, corporate interests within the United States have fostered an unusually large and uniquely vocal group of "climate skeptics." By turning climate change into a partisan political issue, climate skepticism has become yet another case of scientific knowledge entangled in and dominated by cultural identity narratives organized around class, religion, race, and gender.

From an early point, marked by Leo Marx's classic *The Machine in the Garden* (1964), American Studies has been attentive to the ambivalences and vested interests of American narratives about human-environment relations. Marx's observation that American settler culture celebrates pristine nature not least to distract from its own destructive exploitation of that nature remains pertinent

today. A similar ambivalence runs through denialist claims that American climate is not really changing, especially as these claims are being made amid visible evidence that the effects of climate change are literally coming home—engulfing American homes in wildfires, dismantling them in hurricanes, or collapsing them along eroding coastlines.

International studies consistently rank the United States among the most climate-skeptical countries on the globe while it is also the site of key advancements in climate science. The common explanation for this new "American exceptionalism," Greg Garrard and his collaborators note, is that conservatives in the United States "identified the threat from climate science and politics to free-market, fossil-fuelled capitalism in the early 1990s, and mobilized against it rapidly and successfully" (2019, 29). Social scientists have found that the gap in *knowledge* about climate science is negligible between Democrat- and Republican-leaning voters, whereas *belief* in climate science is unusually divided along partisan lines (Kahan, Peters, Wittlin, Slovic, Ouellette, Braman and Mandel, 2012). This disconnect attests to the key role of cultural narratives in climate change debates, and to the extent to which these narratives are entwined with categories of sociopolitical identity.

Several such categories have been identified as statistically relevant and invite further examination from an American Studies perspective. Conservatives, for example, have exerted a greater impact on climate change debates in the United States than in most other countries, and conservative denialist positions have been disproportionately represented in the media (Garrard, Goodbody, Handley and Posthumous, 2019). Another specificity is the pervasive religious framing of climate skepticism in the United States, which has a stronghold among Christian fundamentalists and intertwines with eschatological interpretations of the Bible to distract from the human impact on climate (Handley, 2019). Generally, identity categories are particularly pervasive in climate change discourses and attitudes in the United States, from national framings on the right to race, class, and gender on the left (Pechar and Mayer, 2015). The United States has become a testing ground of the struggle for climate justice as an increasingly diverse coalition of environmentalists is calling for an approach attuned to such sociopolitical differences.

Climate Justice

Social justice is a defining trait of American Studies, and climate justice is one of the important perspectives American Studies can offer to environmental scholarship. Climate justice activists and scholars have long articulated the unequal impacts of climate change, and the way that marginalized populations in the United States and around the globe disproportionately experience the "slow violence" of environmental pollution and climate crisis (Nixon, 2011). These disparate impacts are likely to increase as the planet approaches, and likely exceeds, 2°C warming (EPA, 2021). In response, climate justice strives for social and environmental equity, while also recognizing that communities of color

and other socially vulnerable communities "possess a unique environmental perspective that is critically needed in today's fight against climate change" (Byrnes, 306).

As the other "side" of this special issue brings to the fore, race is central to conversations about climate change. Centering the perspective and experiences of people of color as well as how people of color envision surviving the climate crisis, present and impending, is an important contribution to American Studies. As Laura Pulido (2018) argues, climate change is a fundamentally racialized process, and racism shapes the differential ways climate change is experienced, including life and death. Scholars like Kathryn Yusoff (2018) are making connections between climate change and racial capitalism, showing how the kinds of extractive economies that cause global warming are intimately tied to colonialism and slavery. Julie Sze (2021) also articulates an intersectional framework, highlighting how the climate crisis and environmental pollution are fundamentally interconnected and inextricably linked to crises such as incarceration and policing, immigration, housing, and public health.

Gender is also an important component of climate justice. Women, girls, and gender nonbinary people tend to be some of the world's poorest, are more likely than men to lack access to resources like education, and are more likely to be cut out of policy development and other decision-making processes. As a result of gender inequity, women, girls, and gender nonbinary people in the United States and around the world are also more vulnerable to the effects of climate change. Furthermore, as Stacy Alaimo (2009) highlights, men and masculinity are frequently associated with a greater carbon footprint. For example, Alaimo shows how aggressive masculine consumer cultures, like those associated with the rise of the SUV and the trend of the McMansion in the United States, contribute to global climate change. Utilizing the concept of petro-masculinity, Cara Daggett (2018) argues that fossil fuels, which cause global warming, are intimately tied to the maintenance of white patriarchal dominance.

Populations in the Global South, including regions in Asia, Africa, Latin America, and the Caribbean, also disproportionately experience the impact of climate change, while simultaneously bearing the least responsibility for producing the kinds of greenhouse gas emissions that contribute to global warming. A transnational American Studies approach to climate justice offers an understanding of the way that the United States is not a singular bounded entity. Rather, American politics, culture, and economics extend beyond the reach of the United States' physical borders to impact people and geographies all around the world, including potentially rendering those in the Global South more vulnerable. As Julie Sze writes, "the United States has much to do with the present state of the world characterized by environmental racism, injustice, and climate disasters—a world that relies on the exploitation and cheapening of nature and peoples" (2021, 260).

Utilizing a range of conceptual and methodological approaches, the contributions in this special issue address climate justice as a common denominator.

Rob Gioielli shows how climate crisis, and the United States' contribution to carbon emissions, is fundamentally tied to debates around (auto)mobility and public transportation in many metropolitan American cities. Centering race in his analysis, Gioelli highlights how white suburbanites in the Atlanta metropolitan region in the decades after World War II mobilized against mass transit, leading to the centrality of carbon-intensive automobile dependency.

Julie Sze examines the web series *The North Pole* as an abolitionist climate justice narrative that is able to articulate links between incarceration and policing, gentrification, speciesism, and climate crisis. Sze argues that storytelling in cultural productions like *The North Pole* are important for the environmental justice movement to envision what social and environmental equity looks like, including mutual aid, kinship between humans and nonhuman animals, and solidarity in the face of climate crisis.

Aaron Eddens shows how the climate crisis is utilized as an opportunity for American financial companies and the American security state to expand operations across the continent of Africa, developing agribusiness markets for the former and increasing militarized interventions for the latter. Eddens shows how discourses of resilience justify these kinds of American interventions while reproducing racialized logics that render socially vulnerable populations ever more vulnerable.

Moritz Ingwersen illustrates how modernist aesthetics of the early twentieth century represent entanglements around energy and climate. Reading William Gibson's "The Gernsback Continuum" (1981) and John Dos Passos' *Manhattan Transfer* (1925) alongside examples from art and architecture, Ingwersen demonstrates how these texts represent carbon-intensive energy infrastructure while simultaneously concealing its environmental implications.

Claudia Sadowski-Smith anayzes two novels, Karen Tei Yamashita's *Tropic of Orange* (1997) and Merlinda Bobis's *Locust Girl: A Lovesong* (2015), that focus on climate migration and cross border mobility within the context of settler colonialism. Coining the term climate migration fiction, Sadowski-Smith highlights how both novels use magical realist imaginaries of *multispecies* movement, representing hope in the face of climate crisis, militarized borders, and racialized exclusion.

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Mobility, Race, and Climate in Postwar Atlanta

Rob Gioielli

During the 1980s and 1990s, Gwinnett County, just northeast of Atlanta, was one of the fastest growing counties in the country, more than tripling in size in twenty years, from about 160,000 to almost 600,000 residents. Like many fast-growing suburban counties, it was facing its share of infrastructure pains during this period, as the stream of new residents crowded schools, shops, and especially, roads. Increasing pollution also meant that the county, like much of the region, was in violation of federal air quality standards, which could eventually mean the suspension of federal road funds. In response to this, county officials and activists began pushing for the creation of a county-wide bus system. Many residents were supportive of the plan because it would help the mobility of the handicapped and senior citizens. But even many of those who were in favor were adamant about one thing: No MARTA [Metropolitan Atlanta Rapid Transit Authority].

"I've been opposed to MARTA in the past," Lawrenceville, Georgia resident Maclyn Smith told the *Atlanta Journal and Constitution* in 1995, referencing the official acronym for the Metropolitan Atlanta Regional Transportation Authority that had begun operations in 1971. "That being the case, I think a private bus system would be appropriate on a limited basis."[1]

Why were Smith and others supportive of transit, but opposed to MARTA, which was the state-legislated mass transit provider for the region? Crime and taxes. Smith said they had voted against bringing MARTA to Gwinnett because it would create a news sales tax, and would give criminals "easy access" to the area. Even Gwinnett should not have a county-wide system, Smith argued, because

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it would give "the ghetto access to the rural areas." Others polled in the article echoed Smith's sentiments. "I don't believe we need anything like that in our lives right now because it would make our lives more difficult with more crime," Cathy Pines of Sugar Hill said. "No it will bring a lot of different people in here and make things too much like Atlanta," Dee Dee Adams, also of Lawrenceville, said ("Views Divided on County Missing the Bus" 1995, 109). Gwinnett County would go on to create its own bus system a few years later, with both local routes and express buses to other parts of the Atlanta metropolitan area. Multiple proposals to merge the systems have failed, most recently in 2019.

In 2020, metropolitan Atlanta and its sprawling suburbs are some of the most carbon-intensive regions in the United States. On a per-household basis, the majority of this comes from carbon dioxide emissions from transportation, particularly from cars, trucks, vans, and sport utility vehicles.[2] And Atlanta is not unique. Similar suburbs all across the country, but mainly in the "Sun Belt South," are tremendously auto-dependent. This makes suburbia one of the biggest contributors to America's carbon footprint. Thus, if we are going to try and understand what drives climate change in the United States, and the hurdles to noncarbon sustainability, then we have to understand why American cities, and especially the suburbs, are so completely built around the car, to the hostile exclusion of almost all other forms of mobility.

Explicating automobility in American life is difficult, however, because the system is so naturalized—among the general public, but also among scholars. Most popular explanations for automobile dependency argue that it's an American "way of life," which historian Peter Norton (2009) calls the "love affair" thesis of American automobility. Policy and urban historians provide more complexity, pointing toward road construction subsidies, low-density housing patterns, and how land development patterns shape automobile use, leading to the creation of what Chris Wells has dubbed "car country" (2012; cf. Gutfreund 2004; Rose and Mohl 2012; Seely 1987; Shelton 2018). Nevertheless, the dominance of the automobile and its seeming intractability as the dominant form of metropolitan mobility in the United States is still largely unquestioned in histories of the modern United States.[3] But the reality is that the carbon-spewing system of automobility we live with today was not predetermined by American culture, or even social developments and policy decisions made in the first half of the twentieth century. It is very much a product of the past half-century. During the 1950s and 1960s, the United States faced a significant metropolitan mobility crisis brought on by the postwar resurgence of automobility. In cities across the country, residents wailed over increasing traffic and longer commute times, all the while bemoaning the decreasing quality of public transit service. City leaders, including downtown property owners and large corporations, rapidly tried to formulate new solutions. At first they remained committed to new roads and highways, but escalating antihighway protests in the 1960s shifted the debate, and many American cities worked to create viable mass transit alternatives to individual automobile use during the 1960s and 1970s (Kobrick 2010; Isenberg

2004; Mohl 2004). Aided by billions in federal government funding, a number of cities built new rail systems from scratch during this period, and dozens more purchased and stabilized previously private bus systems, providing real "public" transit for the first time (Schrag 2014; D. Jones 1985; Young 2015).

All of these efforts were birthed from a core conflict over whether or not the American city could be reconciled to the automobile. But, other than the antihighway protests, which were an important part of these debates, this moment has been marginalized in both academic histories and popular narratives about urban transit. This is because the American city did not reconcile itself to the automobile. The car won. With the few notable examples of cities that had robust pre-war systems, like New York and Chicago, American metropolitan transit failed to provide a viable alternative to the automobile, and the car quickly became embedded—physically, culturally, and politically—as the primary, and in many ways the sole, means of metropolitan mobility in American life.

What was the reason for this victory? The short answer is race. The battles over cars, highways, and public transit in most American cities occurred at the same time as the Black freedom struggle, and in many cases, these two conflicts became wrapped up into each other. From Rosa Parks and the Freedom Rides to protests against urban highway construction, civil rights activism was often directly or indirectly about equitable access to democratic forms of mobility, or against the destructiveness that automobility brought to Black communities.[4] The success that many Black communities achieved was often pyrrhic, as whites abandoned public transit systems in ever increasing numbers for the private and segregated sanctity of the individual automobile. The spaces of urban transit became thoroughly racialized from the 1960s forward, and thus largely delegitimized to many whites, who not only refused to use public transit, but also were opposed to funding it through tax dollars or having services extended into their suburban communities. Their solution to the metropolitan transportation crisis was to funnel subsidies to road system expansion and upgrades. The goal was to maximize mobility options for white suburbanites, with the result of confining low-income city residents to poorly maintained and operated transit systems, and creating a feedback loop of ever worsening traffic and carbon dependency for the entire metropolis.

This process of racializing mobility, and particularly of racializing more efficient, less carbon-intensive forms of mass transit, was to firmly tie race to energy use, and thus to climate. This is a key part of understanding what Andreas Malm has called "history in climate": the social and political conflicts that led to the adoption of carbon intensive systems. To Malm, struggles between workers and factory owners in northern England led to the adoption of coal as a "prime mover" that was more flexible than water turbines and allowed capital to break the backs of labor (Malm 2017). In the United States many of the social conflicts that have led to the adoption of carbon intensive practices revolve around race, particularly in the post-Civil Rights era automobile metropolis. After the civil rights successes of the 1960s, whites began experimenting with more decentralized,

ad-hoc, and theoretically "race-blind" solutions to maintain metropolitan segregation. The majority of these solutions centered on suburban housing. With the lack of centralized planning in American cities and the proliferation of suburban municipalities, towns, and townships, suburban whites could use local zoning and development restrictions to great effect to block the construction of public housing, apartments, and really any form of domicile that might be affordable and accessible to Black city residents (Danielson 1976; Dreier, Mollenkopf, and Swanstrom 2004; Frug 2013; Trounstine 2018). But opposition to public transit, especially to the extension of any routes or lines from the city center, became important as well.

The racial delegitimization of apartments, public housing, and mass transit meant that in suburbia whiteness became embedded directly within the most energy intensive forms of metropolitan infrastructure, especially single-family homes on large lots and the centrality of the automobile. The result of all of this was to turn the American metropolis, and especially its sprawling suburbs, into a simultaneously racialized and fossil-fuel–dependent landscape—what we could call a racial petro-scape.[5] This was a "landscape of intensification" where the ever-increasing addiction to fossil fuels was being driven by racism. Every new zoning law meant more single-family homes on large lots, in single-use developments that required a car just to drive to the grocery store, to the local school, and to jobs and leisure activities (C. Jones 2016).

This story played out differently in each American city. Atlanta is particularly interesting because a vibrant and successful local Black freedom struggle was embedded within a rapidly growing metropolitan area that was constantly struggling to deal with its traffic problems. Local white elites were eager to address these issues with a modern commuter-rail and subway system that would put the city on par with the great industrial cities in the northern part of the country. But their aspirations ran into the complex racial politics of the post-Civil Rights South that required navigating a newly empowered Black electorate and political class, and a newly embittered and racially hostile white working and middle class. This played out in the late 1960s and 1970s, as Black residents and leaders were opposed to the original MARTA rail plans, demanding that any new transit proposal prioritize upgrading the city's decrepit bus system, which was the primary form of public transit for thousands of working-class Atlantans. This requirement led to a series of political compromises that by the 1980s had undermined the system's fiscal viability, limiting the ability to expand service even as the metro region's population exploded. These structural challenges then became exacerbated by a new era of racial panic. Suburban whites, who had originally fled to the suburbs to escape integration, now used the fear of urban crime to fight any attempts to extend train or bus service into their single-family home utopias. The result of all of this is that by the turn of the twenty-first century, Atlanta was America's poster child for dysfunctional, racially inequitable, environmentally unsustainable urban mobility.

For most narratives about Atlanta's traffic, pollution, and climate woes, the key year is 1965. That was when Cobb County voters declined to be part of a five-county district that would make up MARTA. Opposition to the system was firmly motivated by the politics of race and white flight. "These people feel that they were evicted from their homes, so to speak, by politics of Atlanta. They're afraid of Atlanta's control," Georgia State Senator Kyle Yancey, who represented Cobb County, explained to a newspaper reporter in advance of the county-wide vote. By "these people," Yancey references the many white Atlantans who moved to Southern Cobb in response to the general desegregation of public facilities and schools that began during the 1950s. Those in the southern part of the county, bordering on Atlanta, wanted to make sure that the city "stopped at the Chattahoochee River," which was the municipality's northwest border (Herbert 1965, 7).

Cobb's opposition is often considered part of an emerging suburban "color-blind" conservativism. Residents sought to disassociate themselves from metropolitan political issues, especially those that dealt with racial inequality, by claiming that their social and economic privileges had little or nothing to do with race. Within this context, color-blind conservatism was primarily used to rationalize support for a retreat from urban social policies, especially those that benefitted the urban poor (Kruse 2005; Lassiter 2006). And this was definitely part of the Cobb opposition, right down to the emergence of a new Young Republican organization that made significant waves in opposing the transit system. The group, formed to support Barry Goldwater's 1964 presidential campaign, created a "Rapid Transit Truth Committee" that released a series of reports in advance of the vote asserting that the rapid transit system was too expensive and unnecessary, that it was worthless to try and save the city with transit, and that industry was moving to the suburbs ("COB GOP Opposition to MARTA" 1965; Kruse 2005).

But in the larger context of Atlanta's politics in 1965, Cobb's defeat of MARTA was actually an outlier. Four other counties did approve the system, and in Cobb 44 percent of voters approved the transit plan. The majority of county officials supported extending mass transit to Cobb, and the opposition by the Young Republicans and a conservative group in the county "to the right of the John Birch Society" was mocked by a local columnist. Calling the opposition to MARTA "dial-a-fear," the *Atlanta Constitution*'s Bruce Galphin equated it with criticizing railroads, airports, and other forms of technological progress. "Where the heck, by the way, was Dial-a-Fear when they started flying airships into Atlanta? People belong on the ground anyway, and the airport is just an obvious scheme to make Atlanta rich at the expense of the suburbs" ("Commentary on Opposition to Transit 'Dial a Fear'" 1965; "Cobb County Transit Referendum 1965" 1965).

To many of Atlanta's political and business leaders and commentators, Gelphin's sarcasm was not an outlier in Atlanta in 1965; the voters of Cobb County

were. The mark of a modern metropolis like New York, Chicago, and Philadelphia, they believed, was an urban rail network. If Atlanta wanted to compete, it needed to build one. This sentiment was not exclusive to the legendary Sun Belt boosterism of the "city too busy to hate." After suffering for more than three decades in the face of depression, war, and—most importantly—the swift rise of the automobile, rapid transit had a renaissance in the United States in the 1960s. Twenty years earlier, city leaders had looked to new urban freeways as a savior that would bring suburban shoppers and workers back downtown. But by the end of the 1950s, traffic and congestion were becoming enough of an issue for daily commuters that many were beginning to rethink their passion for highways. Plans emerged for balanced systems that would include both freeway investment and new rapid transit lines that would swiftly bring suburbanites into city-center jobs and shopping (See Image 1) (Schrag 2014). In 1964 President Lyndon Johnson signed the Urban Mass Transit Act, which provided grants to cover two-thirds of the capital costs for metropolitan systems. Although many older cities in the Northeast used these to upgrade ailing infrastructure and rolling stock, younger cities, like Atlanta, Washington, D.C., and San Francisco, planned systems from scratch (D. Jones 1985; Young 2015).

Atlanta's white elites conceived MARTA under this commuter model. Like many American cities in the years immediately following World War II, Atlanta was dominated by a "growth coalition" that brought together corporate presidents, downtown real estate magnates, and politicians in a bid to ensure the continued

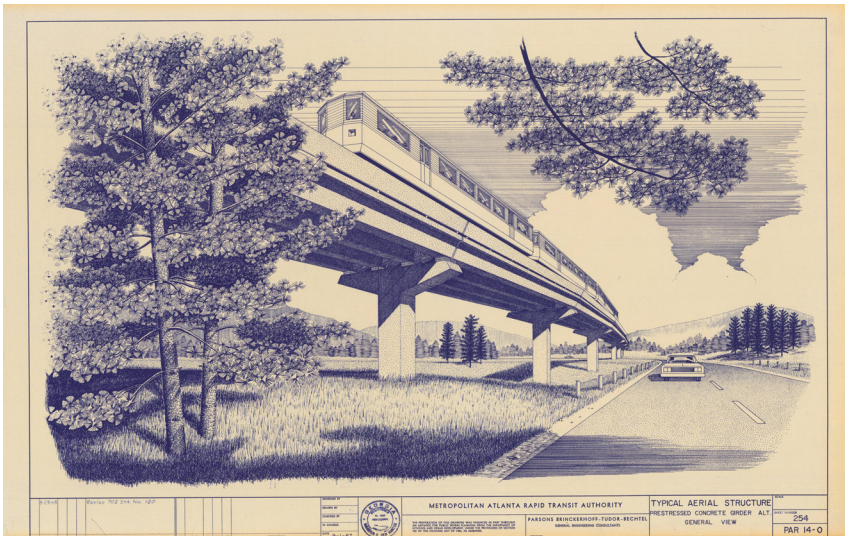

Figure 1: A schematic from one of the earliest engineering plans for the MARTA rail system in the 1960s. Note how the tracks are elevated above a highway, reflecting how the system was designed to augment, not replace, the automobile. Metropolitan Atlanta Rapid Transit Authority Digital Collection, Georgia State University Library.

economic success of the central city. In some places, such as Pittsburgh, these efforts revolved around preparing the city for deindustrialization (Cowan 2016; Teaford 1990). But in Sun Belt cities like Atlanta, it was also about trying to transform the city into an elite American metropolis, and most of these cities proposed some sort of metropolitan rail network. Atlanta's plans, developed in the early 1960s by regional planning agencies, called for essentially a north/south series of lines that would connect the well-heeled, in-town suburbs and Buckhead and the farther-afield locales of Norcross and Marietta with the central city. Similar to systems in Washington, D.C., and San Francisco, the hope was that if a trip was comfortable and convenient, the white-collar office worker would ditch their car for transit, easing pressure on roadways and ensuring a steady market for downtown commercial real estate. "To attract patrons, the system must and will offer a fast, economical, comfortable ride—completely safe and dependable," a 1962 consultant's report argued (Metropolitan Atlanta Transit Study Commission 1962).

With the federal government providing the majority of capital costs through the Urban Mass Transit Authority in 1964, city leaders believed they had a model to create a metropolitan system. It would cover five counties—DeKalb, Fulton, Clayton, Gwinnett, and Cobb—and be approximately sixty-six miles, with two main lines and what were essentially two suburban spurs. The next challenge became getting approval for the system. It took four separate local referendums before MARTA was created and then the system was funded. In the first vote, in 1964, all five counties approved an amendment to the state constitution to create a mass transit system. The second, in 1965, was to actually form MARTA as an agency. It was in this referendum that Cobb backed out of the system. The third vote, in 1968, was to fund the system. This failed in all four remaining counties by a significant margin. The fourth and final vote, in 1971, successfully created a sustainable, long-term funding source for MARTA, but passed in only the two counties that included Atlanta proper: Fulton County and DeKalb County (Keating 2001).

Within the annals of Atlanta history, the failure of Cobb and then Clayton and Gwinnett counties to approve MARTA is considered to be the most important example of the racially driven "suburban secessionism" that doomed the city to such horrible traffic (Kruse 2019; Monroe 2012). But although the antitransit motivations of white suburban voters are important when it comes to understand how Atlanta, like most American cities, became such a sprawling, carbon-intensive metropolis, that is only part of the story. The other, often ignored aspect is that the 1968 referendum was also soundly defeated by Black voters within the city of Atlanta. Why that was, and how Black voters were eventually convinced to support MARTA three years later, is key to understanding race and mobility in Atlanta—and that is to understand what pushed the city down an ever more carbon-intensive path.

Over the past half-century, the core concept in Atlanta politics has been the creation of an interracial governing regime. Since the turn of the twentieth century,

Atlanta had developed one of the New South's largest and most influential Black middle classes, which by the 1940s had been able to carve out a significant amount of political power. White politicians and business elites, through a combination of pragmatism and paternalism, worked to accommodate the Black community as junior partners in the city's growth coalition. Although most white leaders believed in segregation, they were also keen to burnish the city's image to a national and international audience. This ultimately allowed Black activists and community leaders, through negotiation and compromise, to successfully push basic desegregation reforms during the Civil Rights era. As Kevin Kruse and others have shown, the period was no less contentious than in other Southern cities, but white Atlantans just removed themselves from public facilities like buses, parks, and schools as these were being desegregated, with many leaving the city entirely through white flight (Bayor 1996; Kruse 2019; Stone 1989).

Combined with the dramatic breakthroughs of the Civil Rights Act of 1964 and the Voting Rights Act of 1965, white flight gave African Americans a significant amount of political power in Atlanta by the end of the decade. They exercised this in 1968, when a referendum to fund MARTA, via property taxes, was on the ballot. Although many Black leaders and advocates for the Black poor welcomed the progressive nature of the funding mechanism, in general they pushed their community to vote against the proposal. Concerns were numerous: there was a lack of MARTA connections to public housing complexes with Black residents, and the first line constructed would overwhelmingly serve white neighborhoods. In general, many felt that the system was designed to serve white suburbanites and downtown business owners, and not all city residents. Moreover, there had been virtually no outreach by the referendum proponents to gain the support of the Black community and address broader Black concerns, such as equal employment guarantees for construction, contractor, and employment positions (See Image 2). After the defeat of the referendum, the general lack of engagement was glaring. According to a later analysis of the defeat by research staff at the University of Georgia, "it was not until the last week of the campaign that a black 'community relations representative' and a black secretary for the MARTA office were hired, and these were the first members of the staff to be dismissed after the defeat" (Keating 2001, 118–19; cf. Coogan 1970).

Within Atlanta, the defeat of the MARTA referendum was noteworthy for a number of reasons. Downtown elites were "simply used to winning," in the words of MARTA board member Alexander Smith, and so took the campaign for granted (University of Georgia Department of Political Science 1981, I-2). Postmortems of the election pointed out the lack of information about the system that was available to voters—the exact routes were still being planned—and the general haphazard nature of the campaign. MARTA leaders and staff would work to address these issues before asking for funding again. But the other lesson was that they had been short-sighted to take the Black vote for granted, and so they worked assiduously to address Black concerns before putting another referendum to fund the system on the ballot in 1971. This

referendum passed, and Black community and electoral support was key to its success. That support was not simply won with better outreach, but through a fundamental reorientation of MARTA to address the needs and priorities of the Black community, particularly around the issue of mobility (University of Georgia Department of Political Science 1981).

One of the key critics of the MARTA plan had been the Atlanta Summit Leadership Conference, a civil rights coalition headed by Reverend Sam Williams and Jesse Hill, an insurance executive. Hill and Williams argued that the system presented to the voters in 1968 was intended for suburban whites and downtown (white) business interests. "The system is designed for the rich at the expense of the poor," Williams said. "The plans fail to take into account the people who most urgently need rapid transit. Two sections, Thomasville and Perry Homes [both large, majority-Black public housing communities], have no lines, but there are numerous branches and spurs in affluent areas," Williams said at a 1968 press conference. In other venues, Hill had pointed out that the apparent neglect of a bus system, which was the primary form of transit for many in the Black community, in the MARTA plan symbolized to many in Atlanta that this was a system designed by and for the white community ("Negro Group Raps Plans for Transit" 1968; Bayor 1996).

Most histories of MARTA rarely mention the bus system, but it was a key component of the MARTA controversy. It is also vitally important to understanding the racial politics of transit in Atlanta, which helped lead to the metropolitan region's dependence on carbon-intensive and climate-altering automobility (University of Georgia Department of Political Science 1981). Like all public transit systems in the South, Atlanta streetcars and buses had been segregated since the 1890s, with strict rules regulating where Black passengers could get on or off, where they could sit, and how they could be treated by the white drivers. Public conveyances were notoriously contested spaces between Blacks and whites. Arguments about proper behavior and seating location were common throughout the Jim Crow era, so much so that white drivers became notorious for their violent treatment of Black passengers. Drivers routinely belittled and insulted Black riders, kicked them off the bus, or struck them during altercations. In addition to poor treatment, Jim Crow systems also poorly serviced Black communities. Black leaders and passengers routinely complained that the public systems refused to extend service to their communities, and often those that did offer service were not integrated with other companies, resulting in expensive and time-wasting transfers and longer rides (Hale 1998; Kelley 2010).

Thus the desegregation of the transit system, like all desegregation campaigns, was not just about removing yellow lines on the bus or allowing Black passengers to sit next to white people. It was forcing the system to see the Black community as a full and equal constituency. This meant respectful and courteous treatment on the bus, but also full accommodation of Black mobility needs, which primarily meant a well-run and affordable bus system. Atlanta's buses had been quietly desegregated in the late 1950s, but white riders still fled

the system in droves, vacating the integrated spaces of the bus for the private sanctuary of the automobile (Bayor 1996). Census data shows that even by 1960, the vast majority of Atlantans who rode the bus on a regular basis were Black. Only small sections of working-class white communities, on the city's South side, rode the bus with any frequency. By the end of the 1960s, this divide was even more pronounced. The bus system was primarily used by poor and working class Black Atlantans (U.S. Census Bureau, n.d.).

In the aftermath of the failed 1968 referendum, city leaders and MARTA proponents realized that the Black vote would be vital to funding the system into the future. To accomplish this, they made a series of straightforward but also significant moves. Outreach and lobbying to the Black community was increased, and previous outside critics were brought into the fold. Hill was appointed to the MARTA board in 1969 and a prominent civil rights leader was hired as a key spokesperson (Wright 1969). But the biggest move was arranging for purchase of the Atlanta Transit System (ATS), the private corporation that ran the Atlanta bus system. ATS had been in a transit "death spiral" for more than a decade. Because it was completely dependent on fares for its operating budget, decreases in ridership caused a drop in revenue, which usually ended up in a combination of rate increases and service cutbacks, both of which further decreased ridership. By 1970, the system's manager, William Maynard, claimed that it was on track to lose almost $1 million within the next year. He lobbied the city and state government to cut taxes on the system (as a private franchise it paid almost $1 million per year in various fees) to keep it afloat. But over the course of 1970, MARTA officials developed a plan to purchase the beleaguered bus system. Through the UMTA, the federal government promised to pay about $10 million of the estimated $15 million purchase costs, as long as MARTA then would upgrade the system, improving routes and the overall experience for riders (Maddox 1971; Stepp 1970; Teel 1971; Miles 1971).

In more general accounts of MARTA's history, the ATS purchase is an afterthought. But an examination of sources from the city's Black community show how much this decision shifted the politics of race and mobility in Atlanta. Although MARTA officials promised system integration, newer buses, and better routes, the most important part of the bus system integration was a lower fare. Immediately upon passage of the 1971 referendum, they promised that the bus fare would drop from forty cents to fifteen cents and remain that way for the rest of the decade. The low fare was seen by some as a ploy to lure in low-income voters, but that would have ignored the fundamental concern many in the Black community had about constantly rising fares. "We have one of the highest bus fares in the nation, and our people do not have the corresponding salaries to go with them," an editorial in the *Atlanta Voice*, a Black community newspaper, argued when commenting on the hike to a forty-cent fare in spring of 1971 ("Where Will Increases Stop?" 1971, 2).

MARTA officials developed alliances with key members of the Black community, but there was no consensus about supporting MARTA in Black

Atlanta. There was also some active opposition, including a loosely organized "Cross-City Citizen's Committee Against MARTA." Black critiques of MARTA were wideranging, but the most salient was opposition to the new funding plan. The 1968 referendum had been to approve a property tax increase that would fund MARTA, while the 1971 referendum shifted toward creating a 1 percent sales tax in each county that would go exclusively toward MARTA, a more regressive system that sparked significant critique in the Black community. Financing the system this way would be a burden on "poor families who spend their money in small amounts," MARTA opponent and noted "maverick" City Alderman Henry Dodson argued ("Dodson, Citizens Committee Question Worth of MARTA" 1971, 8). MARTA officials had debated this when debating the shift from a property tax to sales tax over the previous two years. They knew a sales tax was regressive, but other plans, such as a property tax, polled at even lower levels among voters. Black MARTA supporters argued that a sales tax increase was more than balanced out by the increased mobility and accessibility for poor and working-class people, and especially lower fares. With the drop from a forty-cent to fifteen-cent fare, the average rider would save ten dollars a month, no small sum when many Black families still earned less than $2,000 per year ("Dodson, Citizens Committee Question Worth of MARTA" 1971; Independent Research Associates 1971).

Despite critiques from Dodson and others in the Black community, it was Black support that led to passage of the 1971 MARTA funding referendum in

Figure 2: Unidentified women, most likely drivers, in front of a MARTA bus in 1975. For many in the Black community, well-paying jobs as drivers, maintenance or construction workers that MARTA provided were just as important as better transit connections. Photo by Boyd Lewis/Kenan Research Center at the Atlanta History Center.

Fulton and DeKalb Counties, albeit by a slim margin of only a few percentage points. The measure was defeated, by a wide margin, in suburban Clayton and Gwinnett Counties. According to precinct totals, newspaper analysis, as well as polling and research done in advance of the election, the strongest opposition to MARTA came from working- and middle-class whites who were residents of Clayton and Gwinnett, as well as from sections of DeKalb and Fulton Counties that were outside of city boundaries ("Voters in Fulton, Dekalb Okay Rapid Transit Plans" 1971). Motivation for opposition appeared to be based strongly on race. Many of the residents of Cobb had fled Atlanta because of race, Cobb County Commission Chairman Ernest Barrett told the *Atlanta Constitution*. "People fear that rapid transit would give Negroes greater mobility and consider the fifteen-cent fare as a gift to 'a certain segment of the population.'" Residents of the southern portion of Fulton county had been actively trying to incorporate to block "Atlanta expansion." They aimed to create their own police force and prevent the construction of public housing, "which they fear would bring large numbers of Negroes into the neighborhood," a postmortem analysis of the MARTA vote argued (Gailey 1971, 12; Murphy 1971, 10).

This journalistic evidence was backed up by pre-election polling. In early 1971, MARTA commissioned a large-scale survey to gauge voter attitudes about rapid rail and how it should be funded. According to the polling report, white voters on the bottom half of the income scale, categorized by the survey as "blue collar/middle class" and "working/lower class," not only had an unfavorable opinion of rail transit, but they were also opposed to funding the system with a 1 percent sales tax. The survey authors argued this made sense, because this was the income group that is most sensitive to sales tax increases. But whereas Blacks who were surveyed saw how the benefits of funding MARTA could outweigh the drawbacks of a sales tax, lower-income whites did not. When seeking to explain this, the survey authors said "it is possible that racial overtones are part of the cause for this, but it is possible that working class whites are simply more concerned about the tax money that the rail transit would cost to build, and they cling dearly to the power that the auto gives them to get away from things." The report concluded that any ensuing campaign should focus on Black voters and whites on the top half of the income scale, which it called the "limousine" demographic, since they were the most like to support MARTA now or sway to support it into the future (Independent Research Associates 1971).

The victory of MARTA in the 1971 referendum campaign was the result of the political bargain between the city's traditional white corporate and political leaders and the increasingly powerful Black community. But despite this success, the nature of the compromise and campaign would further lead metropolitan Atlanta down the road of carbon intensive mobility. Many middle- and working-class whites had been ambivalent about MARTA in the first place, but after 1971, began to see it as a "Black" system. Not only were the purchase of the ATS and the fifteen-cent fare seen as a "giveaway" to the Black community, but there was active fear among suburban whites that city buses could now be used to enforce

school integration across municipal boundaries, busing Black students from the city to the suburbs. This racial delegitmization of the system further led many whites to see the gasoline-powered automobile as not just their preferred, but their only means of mobility around the city.

The opposition to MARTA in many white communities would have significant long-term implications for the transit system and carbon-based mobility in Atlanta. But the passage of the 1971 referendum had an immediate positive impact for many Atlantans. Simply put, the system took off in the 1970s. By 1975, with lower fares and more frequent and wide-ranging service, ridership on MARTA buses was more than 30 percent above what it had been on the old Atlanta Transit System. Lower fares were especially helpful for lower income riders, but research showed that the system brought in new riders as well (Bailey 1975a, 1975b). Although ridership was a key metric for MARTA's early success, it was not the sole indicator, especially in Atlanta's Black community. In addition to regeneration of the bus system, Black leaders had also pushed MARTA and city officials to guarantee equal access to both construction and operations jobs in return for supporting the 1971 referendum. They wanted Black welders building the new rail lines, and Black drivers and mechanics running the new bus system. This was part of the larger social-democratic vision for Atlanta in the 1970s that would best be represented by the work of Maynard Jackson, the city's first Black mayor, who took office in 1974. Jackson tirelessly pushed for affirmative action in city contracts, so that Black workers and firms would get equal access to the region's billions of dollars in construction contracts (Ware 1971; "Coalition of Black Leaders Endorse Rapid Transit" 1971; Suggs 2003; Hobson 2017; Stone 1989).

The success of the system attracted United States Environmental Protection Agency photographer Jim Pickerell to the city in 1974, on assignment for the DOCUMERICA project (See Image 3). Conceived as a modern update of the Farm Security Administration's New Deal photography program, DOCUMERICA sent photographers across the country during the middle of the 1970s to try and document environmental issues. In addition to photographing pollution and other environmental problems, many images were of efforts to address environmental problems, including new and successful transit systems like MARTA. Pickerell took dozens of photographs of MARTA bus riders in June 1974, with all of the captions noting how much ridership had expanded over the past five years.[6] The success of MARTA's investment in the bus system helped reverse the "death spiral" that had plagued ATS and many other American transit agencies in the postwar decades, whereby declining ridership led to worse service and increased fares, which led to declining ridership, etc. Recent research has shown that this sort of investment is key to making bus systems popular and profitable, even in the "low-rise" cities of North America. Toronto's suburbs, for example, have extremely busy bus lines that also have high levels of "farebox recovery," which means most of their costs are covered by passengers, not by public subsidies (English 2019).

Figure 3: Riders waiting for a MARTA bus in downtown Atlanta, June 1974. Ridership boomed in the 1970s, but the majority of patrons were still working class African Americans. Photo by Jim Pickerell DOCUMERICA/EPA.

Atlanta appeared to be going down this path in the early 1970s, when ridership was especially strong. But there were nevertheless cracks in the system by the end of the decade, as administrators were hamstrung by a series of local decisions that had been made years before, as well as a global economic crisis. Research and polling after the failure of the 1968 referendum revealed that subsidizing MARTA with a local sales tax was much more palatable to voters than a property tax. But a sales tax proposal required support at the state level, especially by governor Jimmy Carter. The governor agreed, but a key provision was that at most 50 percent of the money raised would go to subsidize operations. The rest would go to the capital account to pay for the construction of the mass transit rail system. This goal was to guarantee that MARTA would fund the rail lines. But over the course of the 1970s, inflation saw the agency's construction and operation costs spiral upward, all while it was locked into a fifteen-cent fare until at least 1980, another political compromise made to ensure passage of the referendum. The result was that by 1980 MARTA quickly found itself at a crossroads. Demand for services was high, not least because of the decade-long energy crisis. But there was very little funding to add services, and it was very difficult to increase fares, even as annual inflation was more than 10 percent per year by the end of the decade (University of Georgia Department of Political Science 1981; Huie 2014; "The MARTA Fare" 1980).

It is possible to read this as a crisis of bad luck: a series of calculated political gambles (lowering fares and accepting certain funding schemes) intersected

with the pricing pressures of almost a decade of significant inflation. But built within those compromises, and the system overall, were the politics of race and geography that shaped decision-making in Atlanta, and every American metropolitan region, in the postwar era. MARTA was never planned as an intermodal (train, bus, etc.) metropolitan mobility system. It was only designed, essentially, to be a commuter rail system that would shuttle suburban workers and shoppers downtown, hopefully reducing congestion and keeping downtown property values high. Through this, it would also be a symbol of urban modernity for a Sun Belt city looking to compete with the likes of Chicago, New York, and Boston, all of which had mass transit systems. And although this was never made explicit, from conception through construction it was always understood that the target ridership for the suburban rail system would be white. The purchase and integration of the bus system was not seriously considered until 1970, and even then there is significant evidence that pressure from federal transit officials, who also offered funding, is what ensured the final system purchase.

Lack of integration—primarily from a transit perspective, but also racially—meant that MARTA was essentially funding two systems from one pot of money. The gamble, local observers argued, was whether or not ridership would be strong when MARTA opened up its stations in the northern suburbs. If the white-collar workers from Buckhead and other tony communities north of downtown took MARTA into the city, then the construction of the system would have been worth it. "Since World War II, we've had this feeling that mass transit is for the poor, that it's OK for someone else, but I love my car. That tradition has got to change," MARTA chairman Clay Long said in 1984, on the eve of the opening of four stations in the northern part of Atlanta (Straus 1984, 1). Clay had estimated that in order to reach revenue goals and qualify for additional federal funding, ridership had to increase by 25 percent pretty quickly. The new stations did draw in new riders, but not at the level MARTA officials had hoped, only going up about 18 percent over two years. This was good for the system, but not nearly as much of an increase as was necessary.

The primary problem for MARTA, and for any efforts to reduce traffic, general air pollution, and greenhouse gas emissions in Atlanta, was the booming expansion of the city's northern suburbs. From 1960 to 1990, the "favored quarter" of the Atlanta metropolis, roughly the areas along and between the Interstate 75 and 85 corridors, grew by more than a million people, almost all white and middle class to affluent. Much of this was "white flight" from Atlanta, but a significant amount were new Atlanta residents who had never lived in the city. White and middle class, they considered the city's northern suburbs to be the most attractive residential option. But as the suburbs exploded, morphing into even farther-out exurbs, residents and local governments both made a range of choices that reinforced automobility and were actively opposed to other, less carbon-intensive forms of mobility such as public transit. Almost all of these decisions were motivated or undergirded by race: by a desire to maintain

white privilege, white spaces, and white mobility while limiting Black mobility to Black communities as much as possible. The most obvious form of controlling Black mobility, while simultaneously reinforcing carbon-intensive automobility, was through opposition to MARTA, specifically the full extension of the system into the suburban counties.

The needle to thread for white suburbanites was how to make a racial argument that was socially acceptable and politically legitimate. By the 1980s in Atlanta, even the most conservative whites rarely made outright bigoted declarations using racial epithets. They developed a new language and politics of race that did not focus on outright opposition to Black people. Instead they focused on fear of the behavior and social problems within certain sectors of the Black community, particularly the poor who lived in the central city, and argued that the physical infrastructure of rapid transit would bring them into suburban communities. In interviews with reporters, letters to the editor, and public forums, residents said they were concerned about "riff-raff" and "unemployed parasites." "If you bring MARTA here, you are going to bring the people from Perry Homes out here," Cobb resident J. P. Lilburn said at a public forum in 1986, referring to one of the city's largest, and entirely Black, public housing complexes (Roehl 1986, 31). White Atlanta suburbanites were tapping into racial scripts about African Americans, particularly about laziness and irresponsibility, that had existed since at least the nineteenth century. During the 1960s and after, these scripts had been remade to characterize the Black poor as a permanent underclass that was irredeemable and thus undeserving of social support. These were powerful arguments to many suburban whites. They tapped into a broader national narrative about the central cities and the Black poor that was crystallized into a powerful political force in the 1980s. This ultimately resulted in punitive policing policies, the massive expansion of the carceral system, and the gutting of social services—particularly welfare—at the state and national level.[7]

But the most powerful racial script that white suburbanites were able to deploy against MARTA in the 1980s and 1990s were concerns over crime. The argument itself was straightforward: if extended into suburban communities, MARTA would be a "crime train" and a conduit to bring the social problems of the central city, particularly violent crime, to suburban areas. There were two key features to this argument. The first was that MARTA itself was crime-ridden, aboard its trains and especially in its stations. A number of high-profile incidents, including a murder at one station in 1990, brought about often sensationalistic coverage by the local press. This led MARTA officials to invest in security guards (eventually creating its own police force), increased lighting, call boxes, and cameras. It also led to increased reporting on MARTA crime and crime statistics in the local media. All of this effort to show how safe the system was had the perverse impact of emphasizing crime as the major issue that MARTA faced. Officials were even challenged that they underreported crime on the system, leading to an audit by the state government that showed that if anything, MARTA was overreporting incidents: it included crimes that occurred off station

property, and it counted each charge in one arrest as one incident. MARTA was actually quite safe. Almost all of the crime was property based, and very little of it was violent (Brady 1989; Harris 1986; "MARTA Crime Wave Only a Trickle" 1986). Moreover, MARTA was a pretty large metropolitan system that carried more than 200,000 passengers every day and operated a number of large park-and-ride lots, so there were bound to be some pickpockets and auto break-ins. But it didn't seem to matter to many white suburbanites for whom any incident on a MARTA train confirmed deeply held anxieties about crime, race, and urban space.

The racialized fear of crime among white Atlantans was the product of both national trends and local particularities. Since the end of the 1960s, crime had arguably been the primary framework through which the majority of Americans, especially whites, had understood the social problems of majority Black central cities. Concerns over crime drove a series of major policy shifts toward punitive policing and incarceration that began in the 1970s, and that were exacerbated by the War on Drugs policies of the Reagan, Bush, and Clinton administrations in the 1980s and 1990s.[8] In Atlanta a number of high-profile killings at the turn of the 1980s, including the shooting of a doctor in town for a medical convention and the infamous child murder spree, helped spark a narrative of central-city danger that accelerated over the next two decades. Atlanta regularly topped the list of most dangerous cities in America, and crime became one of the most important political issues in the 1990s, threatening to derail the city's ultimately successful bid for the 1996 Summer Olympics.[9]

Even though whites were fearful of MARTA as a place where crime occurred, there was a simple solution to that problem: don't ride MARTA. And many didn't. In the 1990s Metropolitan Atlanta was about 65 percent white, but whites only made up about 20 percent of daily ridership, and much of that was on the rapid rail lines from the northern suburbs. But many of the fearful believed they could not avoid the crime that MARTA would bring to their communities, and this was also what mobilized suburban opponents. This argument had existed in an anecdotal sense since the original debates over the project in the late 1960s and early 1970s. But it received its most thorough public airing twenty years later, during debates over bringing MARTA express commuter buses to Cobb and Gwinnett counties, and then over a referendum to fully extend MARTA into Gwinnett and make the county a full member of the system. Two weeks before the vote, the *Atlanta Journal-Constitution* polled 410 likely voters in Gwinnett County. Half of respondents said they believed MARTA access would increase the county crime rate, and 30 percent said that was their primary reason for opposing the system extension (Beasley 1990a). "I think there could be a bad element coming out here that we don't want with MARTA," Norcross resident Tedd Howder said after leaving the polling place on election day in November 1990. "I am not opposed to progress, but you hate to see those bad elements come out here" (Beasley 1990b, 10).

This debate over the MARTA extension was not uncontested. There were a number of countervoices arguing that concerns about crime were overblown,

if not themselves a version of a racial language. "MARTA trains and buses make great public transportation, but they are lousy getaway cars," *Atlanta Constitution* columnist John Head wrote in 1990. "I can't remember the last time a bank robber, with loot in hand, came sprinting up to me at a bus stop and asked "Did I just miss the No. 2 Ponce De Leon?" The claims about crime were simply a form of veiled racism, Head argued (1990, A-11). When asked for evidence about how MARTA would bring crime to suburbs, many whites pointed to Lenox Square mall, arguing that the once tony shopping center was in decline because of the opening of a MARTA station, giving Blacks access and increasing crime. But "myths, especially those that are racially tinged, do not die easily," journalist Cynthia Tucker wrote in 1990. Lenox Square was thriving and expanding, she wrote, giving lie to the belief of white suburbanites that "the opening of a MARTA rail station six years ago ruined the once great shopping complex" (Tucker 1990, A-19). The *Atlanta Constitution* went as far as doing a crime comparison study between Lenox Square and Gwinnett Place, the suburban county's major mall. Incidents of crime were actually comparable at both malls, they found, and experts argued that there was no correlation between access and crime. A crime analyst at the Federal Bureau of Investigation in Washington, D.C., even said both malls had low crime rates for being such large shopping centers. But local opponents to MARTA were undeterred by the evidence. "If Gwinnett Place mall is already worse than Lenox, just think what it could probably be if MARTA came," Anne Roupe, a noted MARTA opponent, said (Gelb and Beasley 1990, 12).

Evidence and counterarguments did not deter Roupe or any of MARTA's suburban opponents, as Gwinnett County rejected the 1990 referendum by a nearly two-to-one margin. If there was no evidence that MARTA would actually increase crime, why was the crime argument so important in mobilizing opposition? It's because crime, and concerns about crime, was a form of racist language that was accessible and acceptable to white suburbanites in Atlanta, and across the United States, over the course of the 1980s. The Black communities of America's central cities faced a profound social and public health crisis during this period, as decades of disinvestment and deindustrialization intersected to bring about a wave of drug addiction and violence related to the drug trade. Regimes of punitive policing and social policy reinforced and compounded these cycles of incarceration and poverty. But to suburban whites, and in America's mainstream political discussions, this profound social disruption was always filtered through the language of crime. From their point of view, the crack epidemic was not a public health crisis but something that could only be solved, or contained, with massive increases in prison sentences. Urban school districts were massively lacking in resources, but state and federal governments responded with funding for police officers. In Atlanta and elsewhere, some argued that fear of crime was a code word, or dog whistle, masking racist intent. But to many African Americans this sheen of respectability mattered little. It was still a racial language, just one that was more socially acceptable for whites to engage in, no matter how little it was supported by the evidence (Bonilla-Silva 2017).

The racialized "moral panic" over crime in late-twentieth-century America was a powerful cultural and political force that, as Stephen Macek and others have documented, had a major role in shaping right-wing, anti-urban politics among suburban whites.[10] But it also had a significant material impact on the physical landscape of the metropolis and the global climate. Because the spaces of public transit were seen as both sites for and mobilizers of racialized crime, in the minds of many suburban whites they were thoroughly delegimate—at best a last-resort option for the urban poor, and at worst a dystopian thunderdome of gang violence. The other side of this coin was that the automobile became, in both culture and policy, the only legitimate tool for metropolitan mobility. This futher inscribed energy-intensive, auto-centric sprawl onto the metropolitan landscape, making it harder and harder for Atlanta residents, Black and white, to choose a form of mobility that didn't commit them to spewing tons of carbon into the atmosphere every year.

This intensification of carbon-based automobility was also aided by policy at the state and federal level that helped naturalize the system for Atlanta's white suburbanites. Despite the size and importance of Atlanta, Georgia was a very rural state all the way through the 1950s, and legislative gerrymandering gave rural legislators a lot of power. To them transportation only meant one thing: roads. The Georgia Department of Transportation was dominated by rural interests all the way through the 1970s, and they prioritized road building over all other forms of transportation, funneling both state and federal dollars exclusively into road projects (Goolrick 1979; Henderson 2006). Although every state had a "roads first" transportation policy in the immediate postwar decades, there was a better chance at long-term balance in states with older, industrial cities with legacy transit systems, like New York and Pennsylvania. Not so in Sun Belt cities like Atlanta, which saw much of their growth during America's road-building heyday. Here metropolitan mobility became solely focused on the automobile.

Funds for road building primarily came from state and federal fuel taxes, which are collected as excise taxes and built into the price of every gallon of gasoline and diesel. All of these monies go into a "trust fund" to pay for roads, creating a permanent funding source for automobility. For millions of Americans, this naturalized the construction of automobile infrastructure as a type of "submerged state," where tax dollars, government subsidies, and political decision-making are vital to the maintenance of the system but exist "out of sight" for everyday drivers (Balogh 2009; Mettler 2011). This subsidy for the consumption and mobility of the majority group—middle-class, white suburbanites—meant that their mobility priorities had significant sway over the public purse. This included not only the construction of new state routes in suburban districts, primarily in the more affluent, northern suburbs, but also the widening of existing roads that had previously been two lanes but then were expanded to four or eight lanes (Georgia Department of Transportation 2007).

This naturalization of energy-intensive automobility went hand in hand with the racialization of more energy-efficient forms of public transportation. Whereas

gas excise taxes seamlessly funneled money into road-building projects year after year, any attempt to expand or subsidize MARTA was met with vigorous debate and opposition and characterized as an option only for the city's poor or as a giveaway to the Atlanta's Black community. Carbon-based automobility became an entitlement to metropolitan Atlanta's white middle class, something to be assumed and never questioned. And the same pattern occurred across the United States, as white suburbanites expected an ever-expanding network of roads but vigorously debated any form of mass transit. When we consider that metropolitan automobility is an important part of America's historic and continuing contributions to climate change, it is possible to argue that we can see whiteness in that climate. It is the product of decades of white privilege and racially driven metropolitan mobility policy.[11]

Beginning in the 1960s, Atlantans worked to slay the twin monsters of racial segregation and automobile traffic. But it proved an illusory task to create an equitable urban political system where Black residents had real political power and access to good jobs, education, and resources, and simultaneously to implement an affordable and accessible system of metropolitan mobility. Generations of working- and middle-class whites seceded to the suburbs and worked to maintain a new form of racial segregation built around limiting Black access to suburban space. This was about suburban housing, particularly ensuring the proliferation of low-density, single-family homes in homogeneous subdivisions, but also about mobility. MARTA's buses and trains became racialized spaces of social dysfunction that would bring crime and drugs into their suburban idyll. This made the private space of the individual automobile not just the default option for metropolitan mobility, but the only one. This wrapped whiteness into the fossil-fuel intensive form of automobility that would have devastating consequences for the climate, and the planet.

Notes

1. "Views Divided on County Missing the Bus," 1995, 109. *The Atlanta Journal* and *Atlanta Constitution* were separate papers during most of the period covered in this article, and will be referred to as such. But they did publish a joint Sunday edition, *The Atlanta Journal and Constitution*, in the 1980s and 1990s.

2. C. Jones and Kammen 2014. For a visual representation of this research, see https://coolclimate.org/maps. For density, sprawl, and emissions see also Gately, Hutyra, and Wing 2015; Glaeser and Kahn 2010; Goldstein, Gounaridis, and Newell 2020.

3. In much of the literature, it is taken for granted that policies and decisions of the 1920s and 1930s in many ways predetermined the automobile century. See McShane 1994; Wells 2012.

4. The majority of metropolitan civil rights histories are case studies that focus on all aspects of activism in a particular city. For transit- and mobility-focused works, see Arsenault 2011; Frohardt-Lane 2012; Kelley 2010.

5. For work that has been influential in my approach to race, space, and the city, see Anderson 2011; Hale 1998; Lipsitz 2011; Voyles 2015.

6. Inspired by the Farm Security Administration project of the 1930s, DOCUMERICA was designed to create a record of America's environmental challenges, but also

successes, during the 1970s, but also cement the creativity and credibility of the newly formed Environmental Protection Agency. See Shubinski 2009; Environmental Protection Agency and Pickerell n.d.

7. On the use of racial scripts to define the characteristics of particular groups, see Molina 2010. On the development of particular narratives and conceptualizations of urban Black residents and the impact social policy and policing, see Hinton 2016; Kohler-Hausmann 2017; Muhammad 2011; Weaver 2007.

8. Hinton 2016; Kohler-Hausmann 2017. For an excellent introduction see Hernández, Muhammad, and Thompson 2015.

9. Wiggins 2020. On the Atlanta child murders see Baldwin 1985.

10. On moral panics and the shaping of urban policy and politics, see Davis 1991; Hall et al. 2019; Macek 2006.

11. On the cultural politics of petroleum in American life, see Huber 2013. For a general call to examine the ways that race is embedded, materially within the Anthropocene, see Yusoff 2018.

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Abolitionist Climate Justice, or ICE Will Melt

Julie Sze

Introduction

As climate scientists and environmental justice activists have long predicted, the impacts of climate change in the shape of hurricanes, heat waves, and wildfires have become relentless, hitting the Global North with urgency and impacts that hit the most vulnerable (and least responsible) in particularly devastating ways. Interconnected crises have long been the leitmotif of environmental justice activists, who defy static notions of home, time/history, and space/geography and who reject ideas of environment and protection/pollution as separate from race, class, gender, and indigeneity. It is precisely in this moment of interconnected crises that it becomes essential to foreground the stories and perspectives of environmental and climate justice activists. Environmental justice movements link diverse problems and defy state and corporate attempts to artificially separate out harms and issues (health from pollution, social from environmental factors). Activists have long understood the prevalence of violence for people of color and indigenous and poor people in the United States and globally and how narratives can act as a resource to reframe responses to such violence. For justice movements, it is not enough to say that problems are connected. When environmental and climate justice movements narrate connections between problems, they understand them as spatial, political, temporal, and ethical. These movements and the organizers and communities that make them fight and struggle against interconnected forces. They write and rewrite stories, make artwork, and seek to build and grow a different world than the one we currently inhabit.

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What does environmental justice look like in the face of interconnected disasters caused by environmental and state violence in its myriad forms: climate change, gentrification, policing, and deportation regimes? Culture and media offer a partial response in the form of abolitionist climate justice narratives. These narratives bridge distinct strands of abolitionist praxis: against incarceration/prisons/policing (including Immigration and Customs Enforcement and Border Patrol), carbon emissions, and speciesism (hierarchy between human and nonhuman populations).[1] Abolitionist climate justice narratives enact an imaginative reclamation and recognition in a brutalizing economic and political system that seeks to deny the rights of survival for vulnerable peoples and communities, animals, and ecosystems. These narratives build kinship between people of color and animals and imagine what abolition might look like. They highlight conceptions of home and a politics of mutual aid, care, and solidarity in the face of climate crises that have provoked tribalism, closed borders, violence, and individualism.

My case study is a particular web series called *The North Pole*. Culture matters in defining and broadening the concept of abolitionist climate justice narratives and their audiences within the cultural sphere. I use a close reading of *The North Pole* and its characters within the broader context of its production grounded squarely from within the climate justice movement. *The North Pole* is a seven-episode, two-season show (each episode ranges from eight to seventeen minutes and is posted on YouTube and on the show's website).[2] The executive producers are Movement Generation (affiliated with the Climate Justice Alliance)[3] and actress Rosario Dawson.[4] *The North Pole* was created with a theory of change with storytelling and a focus on radical imagination as its core. Three of the characters—Nina, Benny, and Marcus—are working class, Black, and Latinx respectively and grew up in Oakland, and another—Finn—is a White transplant from Minnesota. In season one, the main themes are gentrification/eviction, geoengineering, and drought ("Culture Shift" n.d.; Dry 2017). In season two, migration, deportation, wildfires, asthma attacks, racist microaggressions, and the negative consequences of online centered organizing are the putative subjects.

Although I focus on *The North Pole*, it is not unique. Abolitionist climate justice narratives abound in hip-hop and spoken word.[5] The show represents a climate justice perspective that centers the lived experiences and perspectives of the peoples most impacted by (and least responsible for) climate change. It centralizes the voices and perspectives and the fight of young people of color in the Bay Area. *The North Pole* also represents different strands of abolitionism and, thus, is an important bridge between conversations and critiques that have not well integrated among parallel abolitionist movements—against prisons, policing, carbon, and species domination. In bridging seemingly disparate abolitionist theories and movements, *The North Pole* has the potential to speak with and expand the conversations among all through what I identify as abolitionist climate justice standpoints. Expanding these conversations

preempts a potential critique of each to build solidarities in imagining a more just and liberatory world without incarceration, climate chaos, and animal exploitation.

The show is an abolitionist climate justice narrative in that it highlights the links between climate change and social issues that are not traditionally thought of as environmental, specifically between housing/gentrification, policing, and immigrant deportation. The first half of this article introduces three seemingly disparate conceptions of abolition: abolition of policing/prisons/deportation, fossil fuel, and animal exploitation. The second half of the paper focuses on how *The North Pole* bridges these conceptions and, in doing so, brings a unique abolitionist climate justice perspective to the fore. Climate justice narratives rely on affective strategies, and an analytic attuned to these strategies identifies the agents and actors of climate disaster significantly differently from mainstream analyses of climate change in which science and policy discourses predominate. In this refusal to center science and policy discourses lies a rejection of undifferentiated causes ("humans did this" to "the planet") and an affective mode of despair and hopelessness. The Anthropocene concept has been critiqued from a number of perspectives, including Marxist, indigenous, and feminist stances.[6] Abolitionist climate justice narratives name their enemies clearly. They reject neoliberalism, polluters (particularly oil and gas companies), and white supremacy—and, thus, oppose venture capitalists, privatization proponents, real estate developers, gentrifiers, and racist cops. What makes *The North Pole* an abolitionist climate justice narrative is how the characters in the show become agents of political transformation. They build social movements by mobilizing in the face of overwhelming crises and odds and by centralizing a politics of care and solidarity.

The North Pole models a situation in which critical consciousness about kinship between people—particularly people of color and indigenous peoples—with animals, combined with capacious notions of home, lead the characters toward direct action to advance broadly abolitionist politics. For the protagonists, critical consciousness enables a shift from analyzing complex problems such as climate change to focusing squarely on direct action and social disruption. Once the characters understand how social precarity and environmental vulnerability are connected (and the role of histories of activism that precede their own moments), they are able to act, build solidarity, and grow opposition to hegemonic power and institutions. In the face of state-sanctioned violence, abolitionist climate justice narratives such as *The North Pole* center their resistance to dominant structures and institutions, thereby modeling what abolitionist and radical action looks like in the face of unrelenting, interconnected crises.

Abolitionist climate justice narratives begins in the terrain of consciousness and culture. Black radical and musician Boots Riley, who voices a central character in *The North Pole*, describes how "rebellion is edited out of the worlds we have built…we put those rebellions back into the stories we create and consume" (Noah 2018). *The North Pole* puts rebellion back into the story

of gentrification and climate change by linking important themes within animal and fossil fuel abolition. Its characters and storytellers are grounded in a cultural politics of home built upon artistic creation, love, and relationships (including with and among animals) imagined and lived in response to historical trauma, ongoing violence, and horrific forecasts of climate disasters. The seeds of a climate-just future can be found in the fight itself.

Abolitionist Threads and Antecedents

What does abolition mean in *The North Pole*? And why does the show's conception of abolition matter vis-à-vis climate justice? Abolition of prisons/policing/ICE, fossil fuel abolition, and abolition of species domination make similar arguments about the political task of freedom based on the history of emancipation movements from slavery. Each draws inspiration from the antislavery movement as its primary model, but how each represents that history offers some important touchstones for how abolitionist climate justice can bridge various abolitionisms. All three movements focus on the role of the imagination with their own literatures, scholarly investments, political agendas, leaders, theorists, and blind spots, which are too numerous to fully document. This section introduces their interlinking concepts of abolition related to culture, narrative, and notions of freedom.

Of the three, carceral abolition is the most extensively known. The prison abolition movement began in the 1980s, coinciding with the coinage of the prison industrial complex (PIC). Prison abolition is a large field with many different ideas and influences.[7] Its most visible scholars, for example, Angela Davis and Ruth Wilson Gilmore, have worked closely with groups such as Critical Resistance and authored key publications of the movement. Critical Resistance's mission is to abolish the PIC, "eliminating imprisonment, policing, and surveillance and creating lasting alternatives to punishment and imprisonment" ("What is the PIC? What is Abolition?" n.d.). More recent calls to "abolish ICE [Immigration and Customs Enforcement]" are, one scholar argues, a "natural extension of years of thoughtful organizing by a loose coalition of grassroots immigrant-rights groups" (Markowitz 2019, 131). Many write of "crimmigration" or the intersection between criminal and immigration law (132). Legal scholar Allegra M. McLeod (2015) describes the "prison abolitionist ethic" as a critique of human caging as a solution to social problems. This ethic "recognizes the violence, dehumanization, and moral wrong inherent in any act of caging or chaining—or otherwise confining and controlling by penal force" of human beings (1172). Despite the critique of human caging, incarceration abolitionists generally do not foreground the links to animal exploitation.

Fossil fuel abolition emerges from attempts by scholars, journalists, and activists to explore the links between the political economy of slavery and fossil fuel dependence. These writings focus on historical precedents, the audacity of imagination/perspective, and the limits of historical analogy. Journalist Chris Hayes (2014) argues in "The New Abolitionism" that averting planetary disaster

due to climate change is only possible if fossil fuel companies relinquish $10 trillion in wealth. The climate movement, in coalitions such as the *Keep It in the Ground* and *Extinction Rebellion*, and in hundreds of antipipeline and antifracking protests, are demanding that "an existing set of political and economic interests be forced to say goodbye to trillions of dollars of wealth" with no historical precedent other than abolition. Hayes continues, "There is absolutely no conceivable moral comparison between the enslavement of Africans and African-Americans and the burning of carbon to power our devices. Humans are humans; molecules are molecules. The comparison I'm making is a comparison between the political economy of slavery and the political economy of fossil fuel." Similarly, Eric Beinhocker (2019) argues that "science has given us a clear, specific rallying point. …We must abolish carbon. …The climate change movement must become a Carbon Abolition movement."[8] The current inability to imagine the end of carbon is similar to how it was simply unimaginable to conceive of a world without slavery (at least from the perspective of white people). Environmental historian Jean-François Mouhot demonstrates the links between the abolition of slavery and the Industrial Revolution and similarities between societies in the past that have used slave labor and those in the present that use fossil fuels. We are as dependent on fossil fuels as slave societies were dependent on bonded labor.[9]

Animal abolitionism, like fossil fuel abolitionism, draws upon the historical prologue to ending slavery in its call to eliminate harm to animals. Historically, the link between animals and slaves consisted in their shared dehumanization and in the legal relationship of animals and slaves as property. Legal scholar Gary Francione with co-author Anna Charlton, in *Animal Rights: The Abolitionist Approach* (2015), rejects an animal welfare approach in favor of a more radical conception that eliminates the framework of "concern" in favor of one based on rights.[10] But their approach has important limits, particularly in regard to race. Political scientist and animal studies scholar Claire Jean Kim (2018) argues that animal abolition conceptually "displaces the issue of black oppression" (18). She faults animal abolitionists for their lack of engagement with history, pointing out that enslaved peoples sought to "resuture" into humanization. In other words, animal abolition takes as its operating premise the putative resolution (the "problem solved" approach) of racial slavery as a problem of history (19). Kim draws on Afro-pessimists Frank Wilderson and Jared Sexton in recentering Black existence, the afterlives of slavery, and the foundational role of antiblackness in "repositioning" animal abolition within the larger abolition movement (29).

This repositioning of animal and fossil fuel abolition within the PIC abolition movement is not only possible, but necessary given the glaring whiteness of both animal and fossil fuel abolition. Rather than using the end of slavery as a triumphalist narrative that decenters the perspectives of those most impacted, abolition in a capacious sense can include ending the violence associated with carbon and animal death in equal measure within movements for freedom. Theorists and activists within the prisons/policing abolition movement center

the lives and perspectives of those most impacted and allow for a broad environmental politics that makes conceptual space for the more than human. Ruth Wilson Gilmore, a prominent Marxist associated with the prison abolition movement, argues for the central goal of freedom in the abolition movement as a wide-ranging one. She says, "we work the entire ecology of precarious existence that shapes, but is not bounded by, the aggrandizing 'criminal justice system,' including housing, jobs, education, income, faith, environment, status" (Gilmore and Kilgore 2019). In addition to pushing for concrete policy or movement demands, abolition is, thus, a capacious prefigurative practice that potentially creates alliances toward the goal of abolishing prisons and police and ending carbon and animal exploitation simultaneously.[11]

The centering of those most impacted and those least historically responsible is a key demand of the climate justice movement and, by extension, abolitionist climate justice ("Bali Principles of Climate Justice" 2002).[12] Geographically uneven productions of nature rooted in colonialism and capitalism shape the roots and consequences of climate change.[13] Numerous scholars discuss the globally uneven and racially disproportionate impact of climate change through colonial/postcolonial and environmental/climate justice lenses and examine how these might be addressed. Historian Dipesh Chakrabarty (2014) provides an overview of the collisions of "histories" of "the earth system, history of life, history of industrial civilization (mostly, capitalism)" (cf. Ghosh 2016; Klein 2014; Whyte 2018). Climate debt, he argues, is "a special case of environmental injustice where industrialized countries have over-exploited their 'environmental space' in the past, having to borrow from developing countries in order to accumulate wealth, and accruing ecological debts as a result of this historic over-consumption" ("Climate Debt: Making Historical Responsibility Part of the Solution" 2005). The broadest impacts of climate change are most devastating for the Global South and the poor, those historically the least responsible for carbon emissions.

Although these observations are not new, emergent scholarship is drawing out the abolitionist justice perspective in problem analysis and social movement responses to environmental problems. Philosopher Olúfẹ́mi O. Táíwò (2020) argues that "climate apartheid" is linked to the coming police violence crisis. Drawing on research on past disasters, he articulates the security strategy that seeks to make safe and stable spaces for the affluent that are "generated from the very insecurity that their policing creates for others." Legal scholar Nadia Ahmad (2020) likewise addresses the linkages between mass incarceration and human caging as similar responses to climate change and the coronavirus. She names "climate cages" as responses to "atmosphere dynamics (that) limit mobility, worsen prison conditions and increase carcerality" (although cages are not only literal, but refer to policing and caging in a broader sense of limits on freedom).[14] She points to three emancipatory movements that open these cages: fossil fuel divestment, prison abolition, and abolishing ICE. This scholarship takes the perspectives of those locked in the cages as its foundation and goes quite far in making more explicit the racial and global injustices of climate change.

Abolitionist Climate Justice Kinship

What does an abolitionist climate justice ethic look like in *The North Pole*? It begins with the title and central image of the show. The "North Pole" is a reference to the endangered Arctic as well as a specific neighborhood in Oakland that has faced gentrification. It connects the precarity of polar bears vulnerable to losing their homes (ice) to people of color losing their homes due to gentrification. For Black and Brown young people in Oakland, the most "gentrified city in the U.S.," vulnerability means gentrification and the policing that goes with it (Richardson, Mitchell, and Edlebi 2020). In the Bay Area, the Black population declined 43% in San Francisco and 40% in Oakland over the last three decades (Helpler 2020). Although a significant number left the Golden State for Nevada, Texas, or the South, a larger number went inland in search of more affordable housing in cities such as Stockton and Modesto. *The North Pole*'s signature image is a polar bear, an iconic symbol of global warming. The show takes an abolitionist climate justice perspective by rejecting anthropocentric notions of hierarchy. Rather, the show reveals and values connectedness between living beings.

The characters make this connection clear in the very first episode. *The North Pole* works and rewrites the conflation of nonwhite bodies with animals by linking Black and Latinx people with polar bears ("The Black Panther Party" n.d.). The first episode introduces Nina, Benny, and Marcus at home where they have received a massive rent increase. They document and narrate the signs of "ecosystem" change with their binoculars (yoga classes and overpriced hipster cafes). They drive around on the search for what they call a "rare sighting," the "majestic polar bear," a local born-and-bred resident of color who has yet to be priced and pushed out of their home. In their search to make the money to pay their rent increase, Marcus and Nina collect spare change with a bucket outside the local Whole Foods "for the polar bears." The polar bear begins as a metaphor for their own precarious status.

The notion that Black people—and Black young men in particular—are "endangered species" has a particular history. Psychology and counseling literature used this highly contentious connection in the 1980s (Knight 2014; Parham and McDavis 1987). Black comedians then popularized the frame (Patterson 2012).[15] The category of the human and processes of dehumanization/animalization can be understood through the historical experiences of racialized others in the United States, in particular African Americans and Native peoples. Racist conflation of nonwhite peoples/communities and animals has a long history. Political scientist Claire Jean Kim (2017) writes, "Blackness and animalness, then, form poles in a closed loop of meaning. Blackness is a species construct (meaning 'in proximity to the animal'), and animalness is a racial construct (meaning 'in proximity to the Black'), and the two are dynamically interconstituted all the way down" (10). Literary scholar Lindgren Johnson (2018) argues that African American literature reveals both the dangers and opportunities of closeness to nonhuman and nonhuman animal nature, calling this closeness "fugitive humanism" in the title of her book. Animal abolitionists argue that African American subjectivity, freedom, and

citizenship were intimately entangled with discourses of animality and animalization. In arguing for such intimacies in the relationship between Black people and animals, Johnson argues that African Americans also refused some of liberal humanism's most "cherished" assumptions of what constitutes shared goals of progress, specifically processes of "property making and property taking." This refusal is enabled through a framework of "shared vulnerability" of some African Americans with animals.

Nina, Marcus, and Benny's connection with polar bears is based (in part) on these notions of fugitive humanism and shared vulnerability. These connections are based on interspecies relations rather than human domination or hierarchy over nature and animals. *The North Pole*'s identification of Black people with the polar bear is understood in the series as a source of connection and solidarity in times in which people of color, indigenous communities, animals, and ecosystems face grave threats. The show makes this point about hybridity between different species a feature of climate change adaptation. Nina lectures her housemates about how climate change is impacting the habitats of polar and grizzly bears. She talks about "pizzly bears" that emerge when their habitats are threatened due to global warming (Milman 2016).

But, when Marcus and Benny talk excitedly about this adaptation to climate change, Nina makes clear that the polar bear's hybridity and adaptation is not to be romanticized, naturalized, nor inevitable. Rather, it is a by-product of pollution, extraction, and the political-economic search for endless capitalist growth, which push polar bears—and the main characters—out of their natural habitats or homes. Gentrification further weakens a sense of community and home and contributes to feelings of powerlessness that the characters express. In the penultimate episode of season one, "Spirit Animals," the life-sized polar bear becomes a character in the show. Before the polar bear speaks, he is a silent symbol for tragedy. That tragic polar bear is instantly belied once he talks. Polar Bear is voiced by Boots Riley, the well-known Black revolutionary and Bay Area local (Voynocskaya 2019). He says to Nina, "There won't be any of us left unless you fight against your apathy." He says, "I'm not going out like that. … And I would go 'beast' mode on these fossil fuel fools." She equivocates, saying, "I don't know what to do," to which he presses with urgency, "Who… are you?"

Rebellion (in the form of the polar bear) overcomes apathy (in Nina) by tapping into the stories of historical racialized rebellions that took place in Oakland. Nina calls an Uber to find her grandmother, a former Black Panther Party (BPP) member. Her grandmother, played by real-life BPP icon Erika Huggins, talks to Nina about the Panthers who rebelled against the racism in their city through a political program that sought to make conditions better. The Black Panther is itself another example of how radicalized Black people used an image of a powerful animal to make a political statement.[16] The grandmother admonishes Nina for her negative attitude, saying that problems such as "police and pollution" have to be countered with "a program and a vision that will lead people to walk with you."

The season finale, "Survival or Collapse," ends with the main characters joining a standoff at a house where a local elderly woman of color is being evicted due to a rent hike spurred by gentrification. By taking a stand against this police-aided eviction, Nina, Marcus, and Benny fight back against their own vulnerability and against losing their homes. The standoff is loosely based on the real-world actions of the "Moms 4 Housing" occupation and the subsequent eviction of four homeless mothers of color from an empty house in Oakland (Elassar 2020). These activists point to the problem of the housing market, in which a speculator boom displaced long-time renters and made houses a commodity rather than a human right to shelter. In Nina's rallying speech, she decries the forces of disrespect for the community: "Do we become toxic like Flint, flooded like New Orleans? They already got us on underwater mortgages. We are not for sale." As the police drive up with sirens, she takes the words of the (Rebellion) Polar Bear and her grandmother to ask of the crowd, "What you going to do?"

Nina's identification and ultimate kinship with the polar bear is what enables her to act against her own apathy and claim her home against displacement from a housing market based on ability to pay. The polar bear goes from a tragic symbol of climate change to a "beast," a kinship that enables Nina's transformation to an abolitionist activist who fights "fossil fuel fools," real estate speculators, predatory banks, and the police.

Abolitionist Climate Justice Against Deportation and Beyond Borders

When the show resumes in season two, we do not know if the direct action to stop the eviction "worked," but the audience does see the immediate consequences for the main characters. Season two links climate change, deportations, and global migrations as a way to further an abolitionist climate justice analysis of "home" and what home means in a context of war and climate change. Ultimately, the show threads these issues together to centralize an abolitionist critique of policing and deportation in tracing out what climate and social justice looks like for Benny and his friends.

As a result of the direct action, Benny, who is undocumented from Central America, is arrested and threatened with deportation. Benny is one of California's two million undocumented young people, subject to deportation, especially after an arrest. His stand at the eviction has a huge personal and individual cost. Benny's approach to his deportation order is that offense is the best defense, and publicity for his cause is that offense. He runs against the local sheriff seeking to deport him, thereby inverting the classic tale of the noble sheriff and the lawless criminal. The show relies upon and inverts these archetypes. As with the real-world undocumented activists who proclaim themselves "undocumented and unafraid" (Wong 2014), Benny takes his cause public with the help of Nina's social media activism on his behalf.

For Benny, Nina, and Marcus, the notion of home is what they are fighting to preserve and protect in their fight against gentrification and deportation.

This notion of home can be found in broad and expansive notions of family and community. One of the episodes recounts their first encounters as children. Benny's family was the first Latinx family on the block. Benny's arrival on the block does not signal Nina and Marcus' displacement because they share a working-class background. Significantly, Nina first spots (Rebellion) Polar Bear as a child in Benny's backyard. The series indicates that these expanded notions of kinship began decades ago as families and communities welcomed one another and remade working-class Oakland in ways that both honored Black communities and made space for other working-class people of color. These connections can be found in the characters' families and in their parallel struggles and experiences. Like Nina, Benny has radical elders in his family. His aunt and her wife are queer radicals who fought the military in El Salvador with the Farabundo Martí National Liberation Front.

Like Nina in season one, Benny suffers moments of apathy and crisis when he doubts whether his campaign for sheriff is working. Benny's Tía Carmen speaks to him, pushes him to be strong by telling him that he must continue the journey of his ancestors. She helps him fight the demonizing voices of racists that are literally in his head. With her help, he is able to drown those voices out and connect the dots. In the finale, he says,

> Truth is, I didn't want to come here. None of us did. We were bleeding a civil war with bombs and bullets paid for by the CIA. You want to arrest someone, arrest the Salvadorean Army generals who firebombed their own town. Arrest Lockheed Martin who sold them weapons. Arrest the Ghost of Ronald Reagan. If you want us to stop invading your shores, stop invading ours.

The connections between U.S. foreign policy in Central America and corporate globalization leading to NAFTA are just some of the "push" factors that destabilized economies and homes throughout the Americas. Racist nativism is focused on defending home in a context that ignores the histories of U.S. violence over space and time.

Climate change, in the shape of massive hurricanes and mega droughts, is another "push" factor for migrations (Hallett 2019). Recent reports argue that the recent spike of migration from Central America is directly related to climate change (Sigelmann 2019). Climate refugees move globally in the world as a direct legacy of 400 years of modernity and development. The industrial food system similarly relies on the movement of farmworkers to follow crops, yet the idea of workers migrating over political borders remains anathema to racist nativists. Free trade agreements and industrial agricultural industries seek free borders for products and pollution while limiting protections for workers and the environment. However, justice movements take conditions of corporate and

government exploitation and politicize and collectivize them. Here again, critical consciousness and storytelling are keys to individual and collective action.

Benny makes his final pitch for sheriff in a livestreamed speech that narrates an abolitionist climate justice perspective on home and kinship from a global spatial perspective. He looks directly at the camera and says,

> As Tía Carmen likes to say, borders are the scars on Mother Earth. I'm a child of El Salvador and the U.S., but my world, my home is Oakland. … I'm an undocumented American… I'm not asking for your pity, forgiveness or even your money, I'm asking for more than your vote. I'm asking for your humanity. … Migration is a human right. … Truth is migration is natural… Monarch butterflies fly 3,000 miles every year from Mexico to Minnesota and back again. … I mean we are all just animals looking for a place to call home. And I found mine. I'm not a butterfly. I'm a polar bear. The North Pole, North Oakland. Originally and now, Ohlone Land.

In a context of extreme dehumanization of people of color in general and undocumented Americans in particular, he asks "for your humanity." But, beyond humanity, Benny describes that humanity in a world that is more than human when he says, "We are all just animals looking for a place to call home." He points out the absurdity of political borders when species migrate to survive.

His identification is not (only) with the butterflies, but with the polar bear. Benny connects his precarity to the endangered polar bear vulnerable to climate change, threatened to the point of extinction (Fountain 2020). Here, he is majestic and threatened, and now he is also ready to fight. His vision of home is not a narrow parochial one. By acknowledging Ohlone Land, his view of home centralizes indigenous histories and situates his migration stories with their struggles for sovereignty and land.

As in the last episode of season one, we do not know the "success" or outcome. The point of justice movements, rather, is in the fight itself and in the characters' shift in consciousness in order to take a direct stand against injustice. In the last scene of the series, shot and scored in a Spaghetti Western style, Benny faces directly against the sheriff, who seeks to enforce the deportation order. The show rejects dominant ideas of "the law" as enforcers of justice. The show invites the audience to identify with Benny the lawbreaker and all those who gather to stand with him. Crowds gather on both sides in a tense standoff. Finally, (Rebellion) Polar Bear joins Benny's side and says, "No Polar Bear is scared of fucking ICE. Na Bruh, not today," playing on the pun that polar bears are unafraid of ice (their home under threat) and ICE (which seeks to throw people out of their homes based on a paper and not their ties to the community). Polar Bear takes the deportation order from the sheriff and throws it back to the local "pyro" Bill, who grins and takes the order to burn it down.

This moment literalizes how climate change, deportation, and policing are connected as systems of violence to illustrate how they must be fought. On the one hand, the burning of the deportation order is a literal "burning down" of the system: ICE *will* melt when faced with principled resistance, whether that means direct action or noncompliance. The stability of ICE is based on the credibility of the system and ideologies that support it. That edifice is based on widespread consensus in the system, which can be withdrawn if enough people and organized interests come to see things differently—through social movements, legal fights, direct action, and, importantly, culture and narratives. At the same time, the polar bears face that the ice caps *are* melting due to climate change. The instability and the weakening of the ice shelf are also a product of a political system. The protection of the polar bear homes and habitats, likewise depends on people and interests—movements, law, direct action, and culture. In both the invocation that ICE *must* melt and that ice *is* melting, the show represents abolitionist climate justice politics against policing, deportation, and gentrification.

Abolitionist Care

The show dramatizes what can go horribly wrong when care for others is neglected. Nina's doubt and hesitation in the first season has entirely been replaced by a nonstop social justice stance as she finds her identity as an activist. At a fundraiser for Benny's campaign, she gives an impassioned speech about how ICE are modern-day slave patrols. She catches sight of Marcus collapsing from an asthma attack triggered by wildfires and made worse by climate change.[17] She notices Marcus' asthma attack when Polar Bear points to him from the back. Nina stops her speech and pulls him to a room with Benny and Finn. Even in this moment, Nina livestreams his asthma attack. While looking directly at the camera, she says, "First they poison our minds, then they poison our lungs… this hyper-capitalist system is literally choking us." Nina is so focused on capturing her critique and broadcasting Marcus' asthma attack that she focuses on the camera rather than her friend. The horror in the moment is compounded by her inability to focus on him as an individual at his most vulnerable. Her political consciousness and activism override a politics of care.

What Nina forgets in that moment is that the thing they fear losing most is their capacious notion of home, care, and community. After this moment, the characters reconnect in and through nature (in the woods, aided by psychedelics). The shock of Marcus' near-death experience is the catalyst for the main characters to take stock of their own struggles and doubts. Nina's go-to impulse in the woods (as in life) is to take a picture of the trees and to post on her journey. She starts making an impassioned speech about humans being part of nature when a talking tree cuts off her voice, imploring her to "listen" rather than make speeches. Marcus faces his asthma attack and starts talking to flowers. Finn confronts his racist parents. Each of the characters goes through their own epiphany, which the outdoors provides them. After their respective individual drug-aided insights that allow them to renarrate their own stories through their

doubt, they all make it back to the campsite. Significantly, Polar Bear finally makes himself seen to all of them. Before this moment, only Nina could see him. After they all gain an understanding of their seemingly individual problems and their roots and of how to maintain their sense of care and community through relationships with one another, they are transformed. They become like Polar Bear, ready for the fight against the big structures and histories that shape their precarity.

Their relationships based on care enable the abolitionist perspective on mutual aid and solidarity as a prefigurative politics to be explicitly articulated in the finale. Benny's final speech makes explicit that radical abolitionist vision based on care and solidarity. His vision is to abolish the police, to stop evictions and the deportation regime, and to reframe safety discourse from law and order to an emancipatory framework based on freedom from markets (high rents) and the state institutions (police-aided evictions) that serve them. Benny says,

> I say we call this town a real sanctuary. We abolish the sheriff's department and start our own thing. … Real sanctuary is… when my brothers can walk without fear of police… it's when no one gets evicted and no one gets deported. And we realize that the only way to survive is take care of one another. … But this is far greater than one politician. The only secure community is an organized one… we all feel hella isolated. And that is by design. When you feel alone, you feel that you can't do anything. I know I used to feel that way, but I don't anymore.

Benny references how he first felt alone and vulnerable and that the isolation and individualism is "by design." Abolitionist climate justice perspectives are communal, not individualized; care-driven, not market-dominant; and characterize home capaciously, not defensively. Beyond connection, Benny fights back with vision based beyond survival and grounded in care for each other in a current world that invites his removal and the deaths of polar bears from North Oakland to the North Pole. He moves toward an abolitionist vision of sanctuary through care, consciousness, and connection and away from isolation and fear. Strands of carceral, fossil fuel, and animal abolition are key components of *The North Pole*'s expansive vision of care, narrated from the perspective of the most vulnerable and impacted. Benny moves from an endangered polar bear as a figure of climate tragedy to Rebellion Polar Bear.

Conclusion

The search for walls and borders in the face of climate change-induced global migrations is a political fiction that imprisons some more than others. Ultimately, everyone on the planet is implicated in these interconnected systems of violence, environmental and otherwise. *The North Pole* models for its audience a process of how to take collective and direct action and to inhabit and

imagine an abolitionist perspective, broadly defined. Abolitionist climate justice narratives are rebellion stories that recognize the violence of modernity. They recognize why and how Black, Latinx, and Indigenous peoples have different and threatened relationships to home and why people of color within the Global North and from the Global South want to stay in place and are on the move at the same time.

What climate justice movements demand is that we make connections between animals, ecosystems, and prisons/policing/deportation violence to choose a path that is grounded in the service of intergenerational and interspecies justice. *The North Pole* makes these points in a way that connects with younger generations to enlist them in the abolitionist fight against fossil fuels, gentrification, policing, and deportation. It seeks to represent—and aims to enact through such representation—hopeful and humorous oppositional, cultural, and creative politics. It draws on capaciousness—vis-à-vis home with kin and nonhuman nature and over space and time—to develop a narrative of hope in a moment when the forces of capitalism, white supremacy, and carbon are both dominant and under attack. We are all always intimately interconnected through political and economic systems and through the ecosystems that support our life. What *The North Pole* reminds us of is that we can choose to be a Rebellion Polar Bear and live to fight another day.

Notes

1. Malini Ranganathan and Eve Bratman (2019) are the first to specifically use the term "abolitionist climate justice." Drawing on a case study in a majority Black neighborhood in Washington, DC, they rely upon Black radical traditions and feminist and antiracist scholarship to show how local community members reframe dominant notions of what they call "mainstream (climate) resilience thinking" (117). In contrast to policy-narrow descriptions of climate resilience, community members center intersectional justice approaches that foreground historical, ethical, and antiracist critiques of these practices. Key components of abolitionist climate justice are an understanding of the role of history, a focus on "re-humanizing" language and practices in the face of the historical dehumanization of Black communities and an ethics of care.

2. Each episode has a website accompaniment that highlights three "how to fight" or "learning more" tabs.

3. The Climate Justice Alliance is an "alliance of 70 urban and rural frontline communities, organizations and supporting networks in the climate justice movement. Member organizations lead the Climate Justice Alliance by anchoring major Just Transition projects focused on the social, racial, economic, and environmental justice issues of climate change. We are locally, tribally, and regionally based racial and economic justice organizations of indigenous peoples, African American, Latinx, Asian Pacific Islander, and poor White communities, who share legacies of racial and economic oppression and social justice organizing" ("Our Team. Climate Justice Alliance" n.d.).

4. Movement Generation was founded by Bay Area community organizers of color heavily impacted by the racial and environmental disasters associated with Hurricane Katrina in New Orleans ("Mission and History" n.d.). Movement Generation mobilizes the climate crisis and climate emergency for justice-oriented action. Movement Generation's

"Arts and Activism for Climate Justice" portfolio brings "together cutting-edge artists and activists to creatively build a loud, proud, and beautiful *cultural front* for climate justice. We use arts and culture together with grassroots organizing to build our creative resistance and radical imagination for our peoples and the planet" (emphasis added) ("Culture Shift" n.d.).

5. One example is the musician and climate justice activist Xiuhtezcatl Martinez, who is currently a plaintiff in a youth-led lawsuit against the federal government for the government's inaction around the climate crisis and its failure to protect their essential public trust resources (Martinez 2020).

6. The Capitalocene, drawn from Marxist theorist Jason Moore's *Capitalism in the Web of Life: Ecology and the Accumulation of Capital* (2015), argues that capital exploits labor and appropriates nature simultaneously. Thus, Moore contends, the climate crisis is also a crisis of capitalism, which the Anthropocene concept ignores. Indigenous philosopher Kyle Powws Whyte (2018) argues that dominant discourses of the Anthropocene deny indigenous realities and ignore that environmental crises are a result of settler colonialism and ongoing processes of political domination. Donna Haraway (2016) describes her "impatience" with the ways in which Anthropocene or Capitalocene have become analytically dominant, claiming that they focus on the technofix and employ a "too-late" analysis that lends itself to cynicism and nihilism. In *Staying with the Trouble: Making Kin in the Chthulucene,* she situates the rise of Anthropocene analysis as obtaining "purchase in popular and scientific discourse in the context of ubiquitous urgent efforts to find ways of talking about, theorizing, modeling and managing a Big Thing called Globalization" (45).

7. The "Prison Abolition Syllabus" (2018) highlights how broad the field is.

8. He writes: "Pre-abolitionism, most white people viewed slavery as part of the 'natural order,' the great success of the abolitionists was exposing it as the moral abomination that it is. Other social movements, e.g., ending child labor, women's suffrage, civil rights, gay rights, democratic revolutions, and anti-war movements, have also had moral arguments at their core: The way things are is wrong and must change."

9. Legal scholar Karl Coplan (2016) is careful to lay out the moral distinctions and key differences between enslavement and fossil fuel. On civil rights as an imperfect analogy to the climate change movements, he writes, "The victims of climate injustice are by and large missing from the climate activists' demonstrations. These victims tend to be geographically and temporally remote from the U.S. climate activism community" (emphasis) (282).

10. On a blog, they maintain on the topic called "Animal Rights, The Abolitionist Approach," that logic endures as veganism (Francione and Charlton, n.d.).

11. Similarly, Critical Resistance answers the question of what abolition is, thus, "Abolition isn't just about getting rid of buildings full of cages. It's also about undoing the society we live in because the Prison Industrial Complex (PIC) both feeds on and maintains oppression and inequalities through punishment, violence, and controls millions of people. Because the PIC is not an isolated system, abolition is a broad strategy. An abolitionist vision means that we must build models today that can represent how we want to live in the future. It means developing practical strategies for taking small steps that move us toward making our dreams real and that lead us all to believe that things really could be different. It means living this vision in our daily lives. Abolition is both a practical organizing tool and a long-term goal" ("What is the PIC? What is Abolition?" n.d.).

12. The Indigenous Environmental Network's "Indigenous Principles of Just Transition" are worth highlighting. Developed around the same time as the protests at Standing Rock, the principles are related to the Just Transition, climate, and environmental justice movements.

13. Until 1882, more than half of the world's cumulative emissions came from the United Kingdom alone. Since 1751, 25% of the world's historical carbon has been emitted by the United States, primarily in the last century (Richie 2019).

14. For Ahmad, her sources are both philosophical (Cicero) and lyrical. She uses song lyrics from 21 Savage, a rap artist who was arrested by ICE after he performed on national TV, with lyrics that criticized ICE, the lack of clean water and adequate energy access, and the access to justice for victims of the Flint water crisis.

15. These include comedian Chris Rock to D. L. Hughley in his 2012 special *The Endangered List*.

16. The Black Panther Party borrowed the Panther from the Lowndes County Freedom Organization in Alabama. It was first drawn by Ruth Howard ("Lowndes County Freedom Party (LCFP)" n.d.; "Ruth Howard" n.d.).

17. Asthma hits Black people particularly hard with devastatingly disproportionate hospitalization rates, three times higher death rates from asthma attacks for Black populations in general, and a ten times higher death rate for children ("Asthma and African Americans" 2021).

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Securitizing the Climate Crisis: Racial Geographies of Empire and the Agri-Fintech Frontier

Aaron Eddens

I was at the 2014 World Food Prize Conference when I first heard about a novel insurance technology designed to cover millions of farmers on the frontlines of the climate crisis. I had gone to the conference—the annual gathering in Des Moines, Iowa, centered upon the bestowal of the self-described "Nobel Prize in food and agriculture"—to learn how, backed by the U.S. government and the Bill and Melinda Gates Foundation, the world's largest agricultural biotechnology/seed companies were working to cultivate a "Green Revolution in Africa." They were targeting the continent's tens of millions of "smallholder farmers," who farm small plots of land largely outside of commercial seed markets. The most important crop for these farmers—and the focus of the Green Revolution projects I had traveled to Des Moines to research—was maize. So I was particularly struck by the argument of a panel called "the smallholder's lifeline," that the key to bringing Africa's smallholders into commercial maize markets was to "bundle" seed sales with a kind of microinsurance called *weather index insurance*. Marco Ferroni, the executive director of the Syngenta Foundation, the philanthropic branch of the third largest ag-biotech company, described how farmers in rural Kenya used their cell phones to enroll in his organization's index insurance project. As he explained, when farmers bought a five-kg bag of maize seed from their local agro-dealer, they would now find a small card with a code that they could enter into their phone, linking their phone to a nearby weather station and activating the insurance policy. If the weather station measured less than a predetermined amount of rain during the growing season, the farmer would receive an automatic payment for the value of the seeds through Kenya's

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mobile money system, M-Pesa. The Syngenta Foundation was finding that insured farmers were much more likely to buy hybrid seeds, such as those sold by Syngenta. Ferroni explained that index insurance could also prove lucrative for multinational reinsurance companies (insurers who insure insurers), such as SwissRe and MunichRe. Most of the "risk" captured in his foundation's project was transferred to these companies, in which it held the potential to be *securitized* as a tradeable financial instrument—pooled together with risk captured from thousands of other microinsurance policies to form an insurance-linked security. For farmers, seed companies, and insurers, index insurance promised to be a triple win.

The Syngenta Foundation's pilot project led to two Nairobi-based for-profit companies, Agriculture and Climate Risk Enterprise (ACRE) and Pula. These agricultural financial technology (agri-fintech) companies use digital platforms such as M-Pesa to link millions of smallholder farmers to broader data and risk transfer markets. They have garnered industry awards and glowing coverage in Western media outlets, such as *The New York Times*, *The Financial Times*, and *The Economist* (Bird 2018; "In Africa, Agricultural Insurance Often Falls on Stony Ground" 2018; Mayersohn 2019). In the words of Pula's mission statement, it aims to use "technology and parametric insurance to insure the previously unbanked, uninsured, untapped market of 1.5 billion smallholders worldwide" (Pula n.d.). This approach exemplifies the broader development paradigm of "financial inclusion" in which an increasing number of financial companies are using new digital technologies to tap into frontier markets (Gabor and Brooks 2017). Pula and ACRE's agri-fintech expansion operates along two fronts: first, they transform large pools of previously uninsured "risk" into commodities that can be traded by reinsurance companies, and second, they harvest data from farmers' phones, which they can sell to their "upstream" agribusiness partners. To date, both companies have partnered with some of the largest seed companies working in the region, including multinationals such as Corteva (the agricultural branch of the company resulting from the 2017 mega-merger of Dow and DuPont) and Bayer (which became the world's largest agricultural biotechnology company when it acquired Monsanto in 2018). Both companies explicitly brand their financial services in terms of the climate crisis, marketing their insurance products as tools that can, as Pula's website declares, "power the resilience and profitability of smallholder farmers" (Pula n.d.). From their perspective, farmers can be trained to manage ever-more-frequent weather and economic "shocks" in ways that increase their productivity and profitability. Scholars show how this "resilience" framework is "increasingly pervasive" across much of the Green Revolution in Africa (Gabor and Brooks 2017, 424). But another connection receives less attention in critical scholarship on the Green Revolution: the link between financialized approaches to managing "climate risks" and the U.S. security state's understanding of and plans for the climate crisis.

In this article, I trace an emerging agri-fintech/U.S. security state nexus by reading narratives driving index insurance projects alongside two sets of U.S. government documents: 1) U.S. intelligence community assessments that de-

scribe climate change and food insecurity as threats to American national security interests and 2) U.S. global food security policy and strategy documents. Using the concept of racial geographies, I draw out parallels between the ways that agri-fintech projects and the U.S. security state position Africa as a space of perennial crisis. These geographical representations extend long-standing Western depictions of Africa as a singular, separate, and inferior space. They form the bases for a resilience logic that calls for outside interventions—on the part of American special forces or multinational financial corporations—in the name of securing an ever-expanding frontier of climate risk.

This intersection of finance and empire occurs as the United States and China have ramped up development and security spending across Africa during the past decade, prompting some commentators to declare a new "scramble for Africa" (Carmody 2015; "The New Scramble for Africa" 2019). Yet, although scholarship on the contemporary Green Revolution for Africa has persuasively critiqued its "philanthrocapitalist" origins, neoliberal agenda, and intersections with corporate agribusiness and global finance, more work is needed to understand how its projects intersect with the American security state (Moseley, Schnurr, and Kerr 2015; Patel 2013; Schurman 2017). I use the term "security state" not just to refer to the parts of the state most commonly associated with "national security" or "defense," but to signal more broadly the increasing *orientation* toward security thinking that has become pervasive across state institutions (Grewal 2017). Importantly, today's Green Revolution builds upon a legacy of Cold War–era American agricultural development efforts across the Global South, which were deeply tied to U.S. foreign policy (Cullather 2013; Perkins 1997). Although the role of the United States has certainly taken a back seat to this generation's Green Revolution funders—most notably the Gates Foundation, which is by far the largest financial backer of the Green Revolution across Africa—it remains important to connect the Revolution to American state power. Drawing out these connections, I suggest, demands greater attention to how today's more privatized, more financialized Green Revolution builds upon legacies of racialized finance and empire. As Raj Patel (2013) argues, the Green Revolution in Africa is "*more* biopolitical—more focused on the management of individual bodies—than the original Green Revolution" (4). Agri-fintech's focus on linking hundreds of millions of individual farmers to international commodity and financial markets certainly demonstrates this characteristic. But how are these efforts rooted in longer bio- and geopolitical histories? How might the financial inclusion frontier extend from a history in which finance capital has long sought out "subprime" populations as sites for extractive investment (Chakravartty and Ferreira da Silva 2012)? And how does a more "resilient" American security state build upon an American empire that has relied upon racial logics to justify both its exceptional status as a global police force in the war on terror and the need to secure the livelihoods of others (De Genova 2012)?

The ongoing, compounding crises of climate change and the COVID-19 pandemic have only heightened the stakes of this conversation. As a result of the global economic recession precipitated by the pandemic, a growing num-

ber of farmers and food workers worldwide have fallen into conditions of hunger and poverty with those across sub-Saharan Africa experiencing some of the most drastic increases in food insecurity. Against this backdrop, important international policy debates continue to question what building "resilience" into the food system should look like (Canfield, Anderson, and McMichael 2021; Clapp and Moseley 2020). On the one hand, scholars and activists argue that corporate-dominated, international trade-oriented "business as usual" across global food systems is exacerbating vulnerability, especially for the world's poorest people (Belay and Bridget 2021; Wise 2020). Yet, at the same time, key institutional actors, such as the Gates Foundation and the U.S. Agency for International Development (USAID) are doubling down on their market-driven approach to managing food insecurity, largely through continued efforts to bring smallholder, subsistence farmers into international supply chains (Clapp and Moseley 2020). Agri-fintech companies such as ACRE and Pula that already market their technology as a form of crisis relief are well positioned to expand their operations through the pandemic (Reisman 2021). Yet questions remain about what kinds of social relations will be made resilient through the agri-fintech approach to managing the climate and COVID crises. Although agri-fintech's financial inclusion paradigm promises to help the most vulnerable farmers manage their "climate risk," this approach might normalize exploitative financial practices that reproduce much longer colonial and racialized lines of extraction in that value (here in the form of data and insurable risk) is extracted from African fields to generate capital that circulates to and from London, Brussels, New York, and Zurich.

Methodologically, I draw upon interviews with officials working for agri-fintech and development organizations that I conducted as part of a broader research project on the politics of the Green Revolution in Africa. I complement this interview-based research with close readings of the aforementioned U.S. government publications. I begin with a brief section that shows how climate change should be thought of as a deeply racialized phenomenon. Using "resilience" as a kind of nodal concept, I then trace connections across U.S. intelligence community assessments of food security and climate change and the U.S. Global Food Security Act/Strategy. I then situate contemporary index insurance projects within broader histories of racialized financial experimentation. Finally, I connect the "resilience thinking" found across index insurance projects, U.S. food security policy, and the security state's climate change forecasts with the expansion of U.S. military operations across Africa during the Obama and Trump administrations.

The Climate Crisis' Racial Geographies of Privilege and Vulnerability

In drawing out connections between racialized finance and the security state in an era of climate crisis, my approach builds upon scholarship that views both the causes and consequences of climate change as racialized. As Laura Pulido (2018) has recently written, despite much popular and scholarly attention

generated by the term "Anthropocene"—the neologism that recognizes humans' dramatic impact on the earth as a new geological epoch—there has been a dearth of attention to race and racism in mainstream conversations around climate change. Offering a much-needed corrective, Pulido insists that we recognize the role of race in the Anthropocene. "Certainly it is not solely a racial process," Pulido writes, "but [racism] has played an important role in both producing it and in determining who lives and dies" (117). To illustrate her point, Pulido cites the inverse relationship between the countries that have contributed the most to greenhouse gas emissions and those in which people are most likely to die from the effects of climate change (the United States and Western Europe have contributed the most fuel to the climate change fire, but Americans and Europeans are the least likely to die in the flames; the opposite is true for many countries in the Global South). This racialized "differential vulnerability," she argues, is no accident of geography. Rather, it has been shaped through deep historical processes and different forms of racism, ranging from more overt ideologies of white supremacy to more insidious racisms that Pulido calls "evasion and indifference"—avoiding discussing histories of racism and being indifferent to harsh global, racial inequalities between north and south, white and nonwhite (118, 121-22). These different forms of racism increasingly work to shore up conceptual and material boundaries between the secured borders of the Global North and the places Naomi Klein (2016) describes as "sacrifice zones," in which racialized bodies and the land they inhabit are rendered exploitable to the violent logic of extractive capitalism (n.p.).

Ashley Dawson (2017) provides a useful genealogy of Western security thinking that propagated this kind of "climate apartheid" (194). Dawson shows how, beginning in the 1990s, influential popular and academic writers in the West began to describe the figure of the environmental refugee in the Global South in terms of a security threat for the elite in the Global North (an argument perhaps most memorably captured by Robert Kaplan's 1994 article in *The Atlantic*, "The Coming Anarchy," which drew on racist and environmentally deterministic depictions of poverty in West Africa to warn readers of fast-approaching global threats). This line of thinking was soon adopted by official U.S. Department of Defense strategy and influential national security think tanks: Climate change became yet another justification for expanding the military industrial complex. As Dawson shows, this emerging climate security discourse isolated the source of the security threat in the Global South. It maintained racialized, colonial binaries that treated emerging "hotbeds" of climate-related unrest in the south as "isolated and self-contained entities, with no apparent relation to global systems of power and inequality, past and present" (210). This way of understanding the climate crisis continues to frame discussions of the growing number of climate migrants worldwide and the role of climate change in fueling social conflict and war. Crucially, this security approach to the climate crisis obscures more critical consideration of questions about how countries in the Global North might pay the "climate debt" they owe to people in the south.

The material and discursive global divisions that Pulido (2018), Klein (2016), and Dawson (2017) trace can collectively be thought of in terms of *racial geographies.* María Josefina Saldaña-Portillo (2016) argues that the concept of racial geography is "not simply a term for describing a given effect in space in racial terms." Rather, she writes, "racial geography is a technology of power, and when used as an analytic and theory of spatial production it indexes the series of techniques used to *produce* space in racial terms" (17, emphasis added). As Saldaña-Portillo shows through a discussion of the ways in which the national geographies of the United States and Mexico have been shaped through racialized conceptions of Indians and the land they inhabit, racial geography points to the historical relations that have shaped widely held geographical ideas. Applied to the global geographical divisions that shape the drastic inequalities of vulnerability to the ravages of the climate crisis, the concept helps us to think through the historical traces that shape "*shared* perceptions of space, governed by learned conventions that have developed over more than five hundred years" of colonialism and racial capitalism (19, emphasis in original). It helps us, in other words, think about how geographical constructions of frontier and sacrifice zones are produced and normalized. Applied to the agri-fintech/security state nexus, the concept allows us to question how spatial depictions of "risk environments" or zones for financial experimentation operate through longer legacies of racial geographies of privilege and vulnerability. To begin this line of inquiry, the next section shows how the U.S. security state forecasts the compounding crises of food insecurity and climate change in terms of a national security threat.

Building Resilience in a World of Vulnerability

U.S. national security assessments increasingly identify the intersection of climate change and global food security as a crucial factor shaping the security landscape. During the Obama administration, publications from the National Intelligence Council (NIC), the U.S. intelligence agency responsible for long-term strategic analysis, began to describe climate change and food security as key national security issues. The NIC first examined the security implications of the global food system at a 2012 conference in Arlington, Virginia, at which agriculture and national security experts described food insecurity as a "threat multiplier"—the same term American defense officials have used to describe climate change.[1] Volatilities across the global food system, the NIC warned, might force countries to pull out of international food markets "where the United States has a major economic interest" (NIC 2012, 13). At the behest of Secretary of State Hillary Clinton and USAID director Raj Shah, the NIC continued to examine potential links between food security, climate change, and national security. The unclassified version of its 2015 global food security assessment declares that food insecurity in "many countries of strategic importance to the United States" is likely to increase and that the outlook for countries already experiencing food insecurity is likely to worsen.[2] The NIC (2015) argues that intensifying climate change effects such as drought, conflict, and diseases could compound each

other in the coming decade: "Warmer temperatures might lead to disease spread or prolonged drought, prompting rapid rural migration to cities. In turn, urban slums may become hotbeds for unrest" (1). In its 2016 assessment of climate change, the NIC (2016) further warns of the impending effects climate change would have on food security, suggesting that climate destabilization would soon lead to widespread social and political unrest. The report concluded that climate change was "likely to pose significant national security challenges for the United States over the next two decades" (5).

The NIC's perspective on the looming threats of climate change and food insecurity is further detailed in its flagship quadrennial *Global Trends* publication. Titled *The Paradox of Progress*, the 2017 report outlines possible future scenarios in a world of ever more frequent shocks—things such as the Arab spring, the financial crisis of 2008-2009, and also large-scale droughts and flooding events (NIC 2017). Shortly after its release, the director of the NIC's Strategic Futures Group, Suzanne Fry (2017), presented the report's scenarios to a group of government officials and industry representatives at the Global Food Security Symposium in Washington, D.C. Appearing on a "food security is national security" panel, Fry told the audience that it wasn't just countries such as Afghanistan and Somalia that should expect to see climate-triggered instability:

> When we do our [global] risk analysis… I'm not kidding you—there's something like two thirds of the planet that have risk conditions, literally about 120 countries… that have risk conditions that make them vulnerable to a shock that could tee off large-scale instability. You compound that with some pretty profound demographic shifts, technological shifts, and we have been living through climate shifts—and [then] the next phase of these climate shifts. So we've got a great deal of vulnerability in the world.

Fry stressed that the United States would not be able to isolate itself from this increasing vulnerability. Discussing American trade interests in particular, she urged that the United States would need to anticipate how climate events could set off shocks that could ripple through the global food system. The best way to manage these inevitable shocks, Fry argued, was to "invest in resilience in… both the economic systems but also the natural systems that allow for food security across the whole planet."

Fry (2017) equates resiliency with strengthening international trade and describes resilience as something that can be cultivated in both "economic" and "natural systems." In making this link, Fry's use of resilience illustrates a kind of thinking that Jeremy Walker and Melinda Cooper (2011) trace to the concept's origins at the intersection of ecology and neoliberal economic theory. Showing how the concept originates in the ecological theory of complex adaptive systems, Walker and Cooper argue that its sweeping uptake as a governing logic across

multiple sectors has much to do with how it aligns with the influential neoliberal economist and philosopher Fredrich Hayek's ideas that economic markets function as "complex ecological systems." Examining parallels between two key thinkers, one from ecology (Holling), and the other from neoliberal economics (Hayek), they show how these two strands of thought "have ended up merging in the contemporary discourse of crisis response through resilience" (Walker and Cooper 2011, 144). Importantly, Walker and Cooper argue that the concept itself works to normalize the neoliberal management of an increasing array of social life. Pointing to the "resiliency" that the concept itself has, they suggest that the political stakes surrounding the governmental uses of resilience are indeed high: "At stake in this tacit union [of ecological and economic thinking] is a governmental philosophy of nature and society so all-encompassing and resilient to critique that the effects of political interventions (and non-interventions) made in its name, even when catastrophic, seem as inescapable as the weather" (144-45). As I explore further below, we should ask how resilience normalizes particular approaches to risk management in the realm of food security.

Resilience is also a key concept that underlies the NIC's approach to forecasting the future through its scenario exercises. Although the possible futures it outlines are grim—financial collapses, atomic bombs, rampant cyberattacks all appear—*The Paradox of Progress* argues that the future will be much brighter for the resilient. Although the future will bring great danger, consequential trends such as climate change will also yield potential for positive outcomes:

> In the emerging global landscape, rife with surprise and discontinuity, the states and organizations most able to exploit such opportunities will be those that are resilient, enabling them to adapt to changing conditions, persevere in the face of unexpected adversity, and take actions to recover quickly. They will invest in infrastructure, knowledge, and relationships that allow them to manage shock—whether economic, environmental, societal, or cyber.

Resilience is cultivated through investments through exploiting opportunity in a world of perpetual flux. Resilient "states and organizations" must adopt a stance of what Walker and Cooper (2011) call "permanent adaptability" to navigate—and, more importantly, become productive in—this world of ever-increasing risk (154).

As Walker and Cooper (2011) trace, resilience has become prominent in U.S. national security policy, especially with the post-9/11 rise of the Homeland Security apparatus. Following Inderpal Grewal (2017), this article asks how resilience thinking links neoliberalism and the contemporary U.S. security state. Grewal insists on theorizing the security state through attention to gender, sexuality, and race as well as attending to how the state's securitizing

impulse transcends militarism and incorporates other forms of governance, such as humanitarian or development projects. As Grewal writes, the security state "comes to appear—as the state effect theories suggest—as empire not just through military or global policing but also through 'soft power,' exercised transnationally by particular sets of subjects and processes that gain traction because of histories of white racial, masculinized sovereignty" (16-7). As the U.S. government agency charged with the "development" project, USAID has long been at the forefront of this kind of "soft power." Recently, the agency has made "resilience thinking" a key "organizing concept." The agency's approach to resilience links humanitarian governance with neoliberal economic development as it seeks to "increase access to financial services" among people deemed to be the most vulnerable to recurrent "shocks" (USAID 2021). In this way, it epitomizes the intersection of humanitarian governance and neoliberalism that Grewal describes as a key feature of the contemporary security state. This link is especially clear in the policy and strategy documents outlining one of the agency's core areas of focus: global food security.

Risk Management for Perennial Climate Shocks

The NIC's prescription of resilience as the remedy for shock is central to the U.S. Global Food Security Act, which was voted into law in the summer of 2016 with nearly complete bipartisan congressional support. The law describes global food security as a vital national security interest to the United States ("H.R 1567—Global Food Security Act of 2016"). As Jamey Essex notes in his history of USAID, since its Cold War-era origins, the U.S. "development" project has always been closely tied to national security interests. At the same time, Essex shows how in the post-9/11 era, as the agency has faced recurring threats of budget cuts, it has increasingly shifted toward an explicit "national security" framework. Alongside the State Department, USAID has "worked to align their core strategies as well as accounting and other internal practices with those of the Department of Defense" (Essex 2013, 147). Against this background, the Global Food Security bill's framing as "national security" is more than rhetorical flourish. It reflects a key way that the security state is integrating what Essex calls the "3 Ds" of American National Security: development, diplomacy, and defense. The bill's national security framing also proved to be pivotal for getting it passed. At a moment when Democrats and Republicans in Congress rarely agreed on anything, "food security as national security" was something nearly everyone could get behind.[3]

A central policy objective of the law is to "build resilience to food shocks among vulnerable populations and households while reducing reliance upon emergency food assistance" ("H.R 1567—Global Food Security Act of 2016," sec. 2). The five-year Global Food Security Strategy (hereafter, strategy) that outlines how the policy will be implemented describes "strengthened resilience amongst people and systems" as one of its three organizing objectives (USAID 2016, iii). As the strategy details, building resilience among those it deems most

vulnerable is essential as those populations face recurring droughts, floods, and price shocks. Much like the NIC's scenario forecasts, the strategy describes these "recurrent shocks and stresses *as perennial features*, not as unanticipated anomalies" (18). In this way, it depicts climate change as precipitating a world of never-ending shock—one that demands farmers adopt a "culture of resilience" (Walker and Cooper 2011, 154).

The strategy indicates that the road to resilience is paved with financialized approaches to development. It declares that breakthroughs in digital technologies such as mobile money have made it more feasible to bring smallholder farmers into financial markets, allowing them to "both weather shocks and seize economic opportunity" (USAID 2016). Describing a market potential of "an estimated US$210 billion in demand for smallholder finance," the strategy describes "tailored financial services, products, and systems" as key aspects of its objectives. Along these lines, it calls for rolling out more financial tools such as crop insurance, credit, and money transfer technologies. Whereas the small number of finance efforts aimed at smallholder farmers has been primarily public sector-led, the strategy declares that partnering with the private financial sector "will be particularly essential to promoting sustainable development of the agriculture sector" (24). Importantly, the strategy targets not only individual smallholder farmers, but also governments' financial policies—what it dubs "resilience and risk management policy." This is a key element of the strategy and the Global Food Security Act more broadly: Countries partnering with U.S.-led development projects must adopt policies that foster an "enabling environment" for private sector investment (30). Combining the logic of humanitarian governance with neoliberal economic development, American "soft power" works to open up markets for international capital. (As Essex and others show, U.S. foreign policy in its neoliberal orientations has become increasingly agnostic to the question of whether or not a particular opening up of a foreign market directly benefits a U.S.-based firm.)

The concept of risk management is central to the strategy's financialized approach to resilience. One of its objectives listed under "resilience" is to "improve proactive risk reduction, mitigation, and management" (USAID 2016, 18). It describes risk in terms of both "potential and realized" and lists "drought, flood, price shocks, pests, and diseases" as examples. It describes crop insurance technologies such as index insurance as key risk management tools. Risk is a crucial term in the strategy—appearing as both something to be avoided, but also something to be transferred or taken on. Similarly to "resilience," "risk" can be a slippery term. Throughout my interviews with officials from development, agribusiness, and philanthropy organizations involved in development projects in eastern Africa, I have been frequently reminded that smallholder farmers are "risk averse." A truism in development discourse holds that, given their vulnerability, smallholder farmers avoid risk; they are, therefore, unlikely to spend much on seeds or take loans. As one agricultural economist detailed, "Risk is an impediment to technology investment" (Author interview, Syngenta Foundation,

2015). As a remedy to this barrier, index insurance and other financialized climate adaptation technologies have been promoted as a way to "derisk" the process of providing loans to smallholders, thereby making it easier for lenders to extend credit to farmers and for farmers to invest in agricultural inputs such as hybrid seeds and fertilizer ("De-Risking Agricultural Investment in Africa" 2018). Frequently, index insurance companies, such as ACRE and Pula, directly market their products to banks and microfinance institutions as tools that will enable them to extend credit to farmers previously deemed too risky to offer loans—an approach Pula's website makes clear: "We increase credit providers' appetite for lending to farmers by offering a safety net" ("About Us," n.d.).

In the context of frequent droughts and increasingly unpredictable rainfall patterns, "climate risk" is obviously something smallholder farmers want to avoid. Yet much of the discourse about index insurance describes risk as a kind of untapped opportunity. Understanding how the term takes on both of these connotations demands coming to terms with the way risk becomes a commodity. Jonathan Levy's (2012) history of risk is especially useful for this task. Levy describes an international trade in "risks" that emerged in eighteenth-century maritime insurance. He shows how merchants essentially dealt with two kinds of commodities during their voyages across the Atlantic: the first were physical commodities, whether cotton or the human cargo of slaves, and the second were financial commodities, or "risks," that quantified the possibility of losing their physical commodities. Importantly, this second commodity could be separated spatially and temporally from the original cargo that it secured and traded in financial markets. This is the basis for the global trade in risk that continues today. As I mentioned previously, most of the risk in index insurance schemes is transferred to global multinational reinsurance companies such as SwissRe and MunichRe. This risk also holds the potential to be further pooled together as tradable debts—or securitized—in the form of insurance-linked securities. Financial analysts see the growth of index insurance schemes such as the ones developed by ACRE and Pula becoming increasingly relevant to global securities markets (Artemis 2014).

Understanding how risk functions as a commodity—and as the basis for financial securitization—is crucial to understanding the logic of resiliency as risk management that underpins the Global Food Security Act and index insurance companies. Viewed this way, we can get a better understanding of how "investment in resilience" means that farmers "take on more risk"—in the form of both insurance and debt from loans taken out to purchase agricultural inputs such as hybrid seeds. Risk as harm is meant to go down, for sure. But risk as commodity is meant to perpetually expand. Tapping into pools of uninsured risk demands farmers adopt new approaches to risk. Because index insurance is based upon statistical measurements at the weather station or satellite, there is always the possibility of discrepancy between what the index "reads" and what actually happens in farmers' fields. This means that, to transfer the risk associated with drought and crop loss onto an insurance market, farmers must

take on the risk that what happens in their field will not correlate with the "trigger point" on the index.

Because of this discrepancy, Leigh Johnson (2013) points out, the insurance coverage offered by index insurance is always only partial. Economists call this risk that farmers will experience drought but still not receive a payout "basis risk." (One economist I interviewed put it in more blunt terms: "It's when the worst thing that could happen to you gets worse" [author interview, Development Organization, January 20, 2015].) Because of the issue of basis risk, index insurance creates a twofold dynamic of risk: farmers both transfer risk to national and international insurance markets and take on the risk that they will face a drought and not get paid. In this process, farmers become not only a particular type of agricultural producer (as they are brought into commodity chains and begin purchasing credit, inputs, and seeds), but also a financial consumer—what Johnson calls "risk-bearing subjects." She calls this process by which markets for financial products are expanded by both bringing farmers in and simultaneously excluding them from coverage, "expansion-by-exclusion." "Making security accessible to the poor," Johnson writes, "also requires them to bear some of the risks themselves" (2013, 2667). The U.S. Food Security Strategy adopts a similar financialized logic, declaring, "Resilience… is necessary before individuals can afford the risk inherent in increasing investment in their farms" (USAID 2016, 8). In this way, index insurance promises to be a tool that offers farmers both "protection" and "promotion"—it gives them ways to transfer risk but also take on more risk as they invest in credit and agricultural inputs (Greatrex et al. 2015). This kind of preemptive risk management promoted by the strategy then, somewhat paradoxically, increases risk. This was made clear when I interviewed a Syngenta Foundation official about the index insurance model that developed into ACRE and Pula. "As farmers invest," this official explained, "their risk goes up" (author interview, Syngenta Foundation, January 22, 2015).

As Johnson (2013) and others point out, because index insurance relies upon indexes to calculate insurance payouts, it should not really be called *insurance.* More accurately, the financial tool is a *derivative*: "a contract that establishes a claim on an underlying asset—or the cash value of that asset—which must be executed at some definite point in the future. The underlying asset could be a commodity, such as wheat; or another financial asset, such as a bond; or a financial price, for example the value of a currency; or even an entirely non-economic entity like the weather" (Lapavitsas 2013, 5). Because derivatives opened up the possibility for financial speculators to "bet" upon the rise and fall of an increasing array of assets, they have been at the forefront of the financialization of the global economy since the 1990s. Index insurance functions as a weather derivative in that the contract between farmers and insurance companies is essentially a bet on the outcome of uncertain future climatic events (Cooper 2010). The difference in future values between a scenario in which the farmer receives a payment versus one in which the farmer does not forms the basis for the derivative contract—and for future hedging upon that possible change.

As Johnson (2013) makes clear, this experimental technology is decidedly aimed at particular *geographies*. She quotes an industry official who explains, "In developed countries, we don't sell derivatives to individuals. This may be the best we can do in the developing world, but it has implications for consumer protection" (2665). This kind of market segmentation, in which more experimental financial tools are deemed only appropriate for the developing world, points to some of the broader ethical questions about the ways in which these technologies might extend legacies of inequalities and violence based upon the marking off of particular people and places as not yet developed. Given the criticism about rampant financial speculation and unregulated derivatives markets that followed the 2007-2008 global financial crisis and the related food crisis, one might think that there would be some caution on the part of international development organizations about the possibility of "derivatives for development."[4] Yet mainstream development organizations such as the World Bank, USAID, and CGIAR promote index insurance as a socially just means to address poverty and climate change. How could the financialization of the livelihoods of those most vulnerable to climate change be so uncritically promoted—particularly in the wake of the financial/food crisis? Could this be entirely a case of techno-financial Utopianism? This is surely part of index insurance's appeal. But it does not go far enough in explaining the exuberance for a financial fix so soon after financial meltdown. Examining how global food security policies and financialized climate risk management are shaped through racial geographies sheds light on why such questionable development practices move forward with little criticism.

Racial Geographies of Financial Experimentation

Companies such as ACRE and Pula operate through a frontier logic. At the forefront of agri-fintech, they expand sites for profit making along the "risk frontier" of previously uninsured farmers (Gabor and Brooks 2017, 429). And their financialization of "climate risk" constitutes a frontier market for the companies and their multinational reinsurance and agricultural input company partners. As Raj Patel and Jason W. Moore (2017) write, frontiers are essential to capitalism. "Capitalism," they argue, "not only *has* frontiers; it exists only *through* frontiers, expanding from one place to the next, transforming socialecological relations, producing more and more kinds of goods and services that circulate through an expanding series of exchanges." Patel and Moore explain how frontiers are sites at which the "stuff" that generates value for capital—nature, workers, and energy—is put to work "as cheaply as possible" (19). As they show, it is this cheapening of lives, land, and labor that generates profits for capitalists. This extractive relationship, central to capitalism, depends upon uneven power relations. Race is a key modality through which those relations are produced and exploited. American studies scholars following Cedric Robinson (1983) and other thinkers in the Black radical tradition have generated fruitful work using the analytic of *racial capitalism*. As Jodi Melamed (2015) makes clear, the term is meant to describe *all* capitalism as racial capitalism. As she argues, "Capital can only be

capital when it is accumulating, and it can only accumulate by producing and moving through relations of severe inequality among human groups—capitalists with the means of production/workers without the means of subsistence, creditors/debtors, conquerors of land made property/the dispossessed and removed." These divisions, Melamed writes, "require loss, disposability, and the unequal differentiation of human value, and racism enshrines the inequalities that capitalism requires" (77). Along these lines, scholars examine how this kind of unequal valuation of human lives is central to financial capital, ranging from the racist mortgage-lending policies that contributed to the 2008-2009 financial crisis to the exploitation of other "subprime," racialized populations in microfinance projects in the Global South (Chakravartty and Ferreira da Silva 2012). Building upon this work, this section considers how index insurance projects extend through geographical constructions that depict Africa as a unique, singular place—a kind of "risk environment" where crisis is endemic. I tie these racial geographies to the ways in which agri-fintech constructs new kinds of "subprime" populations in which to invest while extracting profits largely for the benefit of multinational agribusiness and reinsurance corporations.

Geographical representations are always both symbolic and material. We know the world through visualizations and maps, yet we make our way through the material world based upon what we know from representations. As Saldaña-Portillo (2016) describes, racial geographies represent ongoing, dynamic understandings of space shaped across history through cultural and political ideas (16-23). In this sense, history and geography are always intertwined and always play an *active* role in shaping how we relate to particular places. "Geography," Saldaña-Portillo writes, "is not only a discipline for mapping the world to be seen: it is also a way of disciplining what we see, of disciplining us into seeing (and knowing) mapped space as racialized place" (18). This relationship between seeing and knowing "mapped space" in terms of racialized conceptions is especially applicable to Western understandings of Africa. Indeed, there is a rich archive of Western cultural mappings and depictions of Africa—from Joseph Conrad's *Heart of Darkness* (1899) to the pages of *National Geographic* to the web pages of humanitarian organizations—that construct the continent as a unique, separate geographical space (Gabay 2018; Lutz and Collins 1993). As Kaiama Glover (2017) argues, these geographical depictions, so common in journalistic and humanitarian discussions of Africa, work to draw clear lines between "us" and "them." They draw sharp material and ideological borders through which "the 'Afro-' is rendered forever fixed in dystopian time through a disavowal of historical relationships that implicate the West" (241). These kinds of geographical descriptions are commonplace in the discourses of agricultural development and agri-fintech. A striking example comes from the cover of an influential European-based agricultural development organization's 2015 "Agriculture for Impact" report (featuring a profile of ACRE). Under the headline "The Farms of Change: African smallholders responding to an uncertain climate future," a map of the continent, rendered in heat-map orange hues, depicts Africa

as a dry, cracked, and lifeless parcel of Earth [Figure 1]. This kind of visualization must be understood as part of more long-standing racial geographies that construct Africa in terms of a dehumanized, lifeless space. As Glover writes in her analysis of the racist narratives underpinning humanitarian discourses about Haiti and Africa, geographical depictions of Africa as devoid of life relegate "brown bodies to dehumanized spaces the world over" while suggesting "that survival in such inhuman spaces proves the nonhumanity of their inhabitants" (243). Echoing a theme explored by Sylvia Wynter and Katherine McKittrick, Glover points to the ways in which Western geographical constructions of Africa dehumanize its inhabitants through rendering it a space of the "racially condemned" (McKittrick 2013, 7). For the purposes of my discussion, the key point to consider is the way in which these and so many other spatial depictions of Africa *normalize* it as a place of perpetual crisis—a place where "disaster is a state of being, as opposed to an event" (Glover 2017, 242). The Global Food Security Strategy's framing of shocks as perpetual events for smallholder farmers, like the NIC's description of Africa in terms of a "zone of experimentation," indicate the need to ask how constructions of Africa might work to normalize this kind of framing (NIC 2017, 119).

How might the "developing world only" practices of agri-fintech be normalized through geographical understandings of the agri-fintech frontier? In her compelling analysis of how microfinance expands "poverty capital," Ananya Roy (2010) describes how microfinance operates through geographical constructions of the frontier. She describes microfinance as "the new subprime frontier of millennial capitalism, where development capital and finance capital merge and collaborate such that new subjects of development are identified and new territories of investment are opened up and consolidated." Emphasizing the geographical imaginaries that shape donor and microfinance institution's conceptions of the subprime subject, Roy makes clear the relationship between an expansive project of poverty capital and the "opening up" of frontier spaces. Through this geographical process, the subjects of development of global microfinance are viewed as "subprime borrowers" that are deemed high risk: "Their financial inclusion takes place on subprime terms" (218). In the 2007-2008 financial crisis precipitated in part by a mortgage-backed securities crisis, race proved a critical factor in not only constructing the category of "high-risk" borrowers, but also in allocating blame after the housing crisis. Chakravartty and Ferreira da Silva (2012) argue that popular media accounts of the housing crisis as the "subprime crisis" worked to lay the blame for the crisis on "subprime" racialized populations rather than the bankers who recklessly gambled on their exploitation (363). Extending Roy's theorization, they insist that the figure of the "subprime" in both the United States and Global South should be understood "as a racial/postcolonial, moral and economic referent, which resolves past and present modalities and moments of economic expropriation into *natural* attributes of the 'others of Europe'" (364, emphasis in original). Racial logics create particular places and people as naturally inclined to vulnerability and "subprime"

economic statutes. The figure at the center of agri-fintech's "financial inclusion" efforts across Africa—the homogenous "African smallholder farmer"—can be thought of as a global subprime.

This "subprime" logic materializes in index insurance through a range of ways in which development experts seek to train farmers to take on risk. In some instances, the insurance companies find that it makes more sense not to tell the farmers that they are being insured: to simply insure the creditor or agricultural input supplier. This is surely the logic of the subprime borrower: farmers don't understand risk; leave the financial reasoning to lenders and agribusinesses. This, too, builds upon racial trajectories in which the "others of Europe" have been understood as subjects "without self-determination" (Chakravartty and Ferreira da Silva 2012, 369). Thus, development organizations deploy a range of efforts to both instill a different approach to farming and cultivate a new ethic of resilience in these smallholder farmers. As the Global Food Security Strategy argues, farmers must become more resilient to take on more risk. What financialized approaches to managing climate risk and the U.S. Global Food Security Strategy have in common is that they construct the subjects of development—smallholder farmers—in terms that suggest their unique vulnerability: their "subprime" status. This construction, moreover, is tied to the racial geographies through which agri-fintech and the security state understand the crisis.

Zenia Kish and Justin Leroy's (2015) work is helpful for understanding the connections between this new racialized subprime figure and histories of finance. As they argue, "Finance has historically developed new innovations through arenas of experimentation in which privatized control over racialized bodies and life possibilities expand the boundaries of financial value" (632). They connect contemporary financial instruments, such as "social impact bonds" and "development impact bonds," which allow third-party investors to make money through funding social programs that serve impoverished communities, to the financialization of slavery in nineteenth-century Britain and the United States. Tracing parallels between social impact bonds and the practices that financialized the slave economy, they "examine [these] seemingly unrelated modes of investment to demonstrate that racialized life has repeatedly served as the basis for development of new methods to assess and augment the future value of particular lives" (633). In this way, race has been "a tool with which financial innovators elide the ethical concerns raised by financial practices" across different historical contexts (646).

Although index insurance functions as a derivative rather than a bond, its financial experimentation relies upon the kind of revaluation of racialized life that Kish and Leroy (2015) examine in social impact bonds. Farmers on the frontline of climate chaos become sites for financial investment, and this investment process inevitably leads to some farmers being "excluded" from actual security (Johnson 2013). Yet, across much of the discourse on agri-fintech, potential ethical concerns about "derivatives for development" schemes are largely

sidelined. I suggest that this reasoning has much to do with the ways in which racial geographies naturalize particular places as perpetually "at risk." As one of the economists I interviewed conveyed, most index insurance schemes are, perhaps unsurprisingly, set up to minimize the potential loss exposure for the reinsurance companies. As this official conveyed, the contract terms were largely set up to benefit the multinational corporations calling the shots (author interview, Syngenta Foundation, January 22, 2015). So, although the narratives of helping farmers deal with their increasing vulnerability drove the expansion of these projects, in many ways, the projects are set up in ways that maintain vastly unequal power imbalances between people in the Global North and South. Following Kish and Leroy, we should consider how these experimental practices on the agri-fintech frontier expand through racialized understandings of "at risk" populations and places. Furthermore, we need to examine in what ways these practices are normalized in ways that prohibit more critical questions about climate adaptation in a world of vastly unequal vulnerabilities to the impacts of climate change along lines of race, class, gender, and nation. These questions might indicate, for example, how alternative insurance mechanisms could be built on the premise that countries in the Global North owe countries in the South an "ecological debt." And what might a climate adaptation finance mechanism that did not prioritize the profits of global financial institutions look like? De-naturalizing the prevailing racial geographies that inform so much of the conversation around climate adaptation would clear the ground upon which to ask these kinds of questions. Yet the dominant financialized/security framing of the climate crisis continues to render them unaskable. To further examine how this framework gains and maintains traction, the final section turns to an analysis of how the "resilience thinking" of agri-fintech and the Global Food Security Strategy also aligns with the more militarized aspects of the American security state.

"The Battlefield of Tomorrow, Today"

During her aforementioned remarks at the Global Food Security Symposium in the spring of 2017, the NIC's Fry spoke about the unpredictable nature of large-scale political, social, and ecological instability. She told the audience that a future of "greater exposure to climate risks and extreme weather" would likely bring not only slowly developing climate events, but "really dramatic, sudden shock type climate phenomena" that could bring "catastrophic" changes to global food markets overnight. These "climate shocks" were likely, but Fry insisted that the NIC could not accurately predict where they might emerge.

> We are not able to predict the location, the geography of where these climate events will happen. We know they are going to happen. We have a sense, probably a better sense in looking out decades, of the type of challenges to come. What we don't have a better sense of is the

> near-term prediction of where these events will occur. And I think the takeaway from that, again, for me, is about building resilience into both the natural and economic systems here.

The uncertainty of where catastrophic climate events will occur demands a resilient state defined by an adaptable, security-focused approach. To be clear, the "we" Fry suggests here is the U.S. security state. Although the NIC's scenario planning might imagine particular "hot spots" of vulnerability likely to descend into chaos, climate change presents an unprecedented *global* security threat. The framework of resilience, rooted in the ecological understanding of complex systems, provides an approach to security that aligns with the future of inevitable, yet unpredictable shock on a global scale (Walker and Cooper 2011). The resilient state Fry conveys here is charged with policing global food/climate insecurity and building resilience into global markets.

Appearing alongside military officials on the panel, Fry's remarks conveyed imperial assumptions about the American security state's responsibility to secure the (unknowable, always in flux) frontier of climate change and global food markets. This logic of fighting an unpredictable threat that might emerge "overnight" anywhere around the globe justifies the expansion of American empire. Along these lines, the NIC (2017) describes the threat of climate change and global terrorism in similar terms. It constructs both as perpetual kinds of risk environments that call for further management. In its discussion of the new global realities of power, *The Paradox of Progress* argues that dispersed power and the increase of nonstate actors such as the Islamic State have led to a radically new global geopolitical landscape. These dispersed threats make "securing and sustaining outcomes—whether in combatting violent extremism or managing extreme weather" increasingly difficult. Therefore, it suggests that the United States needs to adapt to become a more "resilient" state, one that can cultivate resilience to adapt to these changes: "Sustaining outcomes will require a constant tending to relationships" (28). Using the "ecosystemic" language of complex adaptive systems thinking, the NIC paints a geopolitical future in which both defense and development are oriented toward a world of constant crisis (Cooper 2010). In this way, both the global war on terror and the fight to manage the climate crisis demand preemptive action to secure the frontier.

The NIC's call for developing a more resilient security state and the emerging agri-fintech development paradigm occur during a time in which the U.S. military is expanding its reach in Africa. Although the continent has long been considered "off stage" in the American imperial theater, the past decade has seen a steady buildup of military operations and proxy wars across the continent. Investigative reporter Nick Turse has tracked U.S. military expansion in Africa since 2012. Through a series of reports, Turse (2015) shows a dramatic expansion in U.S. military presence in Africa—fighting proxy wars, engaging in small-scale counterterrorism missions, training African countries' militaries, and conducting drone operations—during the Obama administration. A quote Turse includes in

the introduction to a book of his reporting demonstrates how the U.S. strategic focus toward Africa has changed. A group of U.S. special forces officials in 2013 quoted an oft-repeated phrase from their commander: "Africa is the battlefield of tomorrow, today." A special forces official continued, "I couldn't agree more. This new battlefield is custom made for [Special Operations Command] and we'll thrive in it. It's exactly where we need to be today and I expect we'll be for some time in the future" (3). This official's predictions have borne out in the time since as the United States continues to expand its military presence across the continent.

Shortly into the Trump administration, in early 2017, Turse (2017) published details from internal Pentagon reports that describe an extensive range of secret military bases and "forward operating locations" across the continent. As Turse's work shows, the U.S. military machine positions itself to be able to conduct surveillance and embark in counterterrorism efforts across the continent. Several African countries represent strategic hubs for U.S. military operations in the region and beyond. As the NIC predicts climate change-caused instability to exacerbate political and social instability across much of Africa, clearly the United States aims to have a significant military presence on the continent. By late 2018, Turse reported that the United States had engaged in more than 30 named missions and activities across the continent since 2015. Although the Middle East had more troops and more troops engaged in combat, Africa had actually been the region with the most U.S. military operations. Largely hidden from public debate, Africa has fast become the site of a "sprawling, labyrinthine, and at times chaotic shadow war." As African countries emerge as new frontlines in the global war on terror, the United States sends more special operations forces to Africa than any other region: "More than 14% of US commandos deployed overseas in 2019 were sent to Africa." As of 2019, American Special Operations forces were engaged in 22 African countries, conducting low-scale counterterrorism combat missions and training forces in partner countries (Turse, Mednick, and Sperber 2020). As Turse notes in a recent report that uncovered previously classified information about the extent of U.S. involvement, although the U.S. has poured billions of dollars into security assistance and established a network of 29 bases that spans the continent, violence and warfare across the continent have increased alongside the American buildup.

Evoking a new kind of "containment" approach to national security, the Trump administration's official "Africa strategy" identified a rising, "predatory" influence of China and Russia across the continent. Speaking on the occasion of the release of the administration's Africa strategy, U.S. National Security Advisor John Bolton (n.d.) argued that China and Russia's expansion in Africa "stunt economic growth in Africa; threaten the financial independence of African nations; inhibit opportunities for U.S. investment; interfere with U.S. military operations; and pose a significant threat to U.S. national security interests." To better dominate what it dubs the "great power competition" with China and Russia, the Africa strategy called for ramping up U.S. investments across the

continent, prioritizing U.S. commercial interests, and expanding military support operations with African governments.

Clearly, the memorable quote attributed to the leader of U.S. special forces in Africa—calling the continent "the battlefield of tomorrow, today"—conveys the kind of geopolitical framework the Trump administration embraced with its Africa strategy. But this viewpoint on Africa also reflects a kind of preemptive logic that Randy Martin (2007) argues is central to both financial risk management and American empire in the age of the perpetual war on terror. As Martin explains, high finance and American warfare share a preemptive, securitizing logic, in which "potential threats are actualized as demonstrations of the need for future intervention. Preemption is the temporality of…the political and moral economy of securitization, the future made present" (18). Martin likens the shift toward a counterterrorism mode of U.S. warfare—dispersed warfare fought by small groups of soldiers—to the logic of the financial arbitrageur who leverages volatility in risk markets for profit. Whether in financial markets or the hinterlands of the global war on terror, military leaders and the masters of finance perform parallel "arbitrage": Special forces exploit "small variations in the environment to achieve large-scale gain," and bankers and hedge fund managers use "quick shifts in [the] deployment of capital to leverage larger money-making effects" (10). Both demonstrate the temporality of the derivative: a present ruled by the promise of future instability.

Climate change and terrorism both raise the threat level for unpredictable "shocks." Both call for a particular approach to risk management akin to what Walker and Cooper (2011) call a "culture of resilience"—an acceptance of perpetual flux in environmental and social "systems" and an adoption of practices ordered around fostering "permanent adaptability in and through crisis" (152). In this way, we can see a parallel between the U.S. pivot to Africa and the ramping up of development efforts based upon financial logics and practices. Both position Africa as a space of perpetual crisis that demands securitization. Resilience as both a security strategy and development strategy calls for cultivating resilient governments and individuals. In the process, geographical peripheries of global agri-fintech markets and U.S. warfare become productive frontiers for agribusiness, financial capital, and the expanding security state. Although the agri-fintech projects and their agribusiness partners couch their efforts in terms of an entrepreneurial humanitarianism—as helping the African smallholder access markets and approach farming as a business—these developments are linked to ongoing trajectories of racialized empire. That the wave of commercial and development efforts working under the banner of the "Green Revolution in Africa" is increasingly oriented around the development/finance nexus has been well covered. But we need also attend to the ways that this intersection articulates with racialized finance and racialized empire—and how these, in turn, are mutually formed.

Conclusion

In the fall of 2018, President Trump signed the U.S. Global Food Security Reauthorization Act into law, extending the Global Food Security Strategy and programs through 2024. Although the Trump White House consistently threatened to cut funding for USAID (a move that was rejected by Congress each year, but one that nonetheless precipitated widespread reforms throughout the agency), the agency's food security program continued to draw overwhelming bipartisan support in Congress during the Trump years. Under an administration that demanded government agencies show how they put U.S. interests above all else, USAID shifted to a development agenda increasingly defined in line with Trump's "America First" doctrine. This manifested in a shift toward framing its development work in more starkly defined political language, in particular arguing that U.S. projects constituted a more democratic alternative to China's "authoritarian" development efforts, as Mark Green, the USAID Administrator from 2018 to 2020, conveyed (USAID 2019). The agency also opted for a sweeping transformation by redefining its core functions in terms of "private sector engagement." Couched in terms of helping partner countries become more "self-reliant," the 2018 Private Sector Engagement Policy demands that USAID programs engage with private sector entities in all aspects of their work (Saldinger 2018). This is an example of the security state working at the development/finance nexus to expand American economic interests. USAID's approach surely aligns with the resilience-as-risk-management approach that I have traced here. Along these lines, agri-fintech projects such as ACRE and Pula continue to expand. As I argue, these efforts reproduce long-standing asymmetries of power that continue to position particular people and places as perpetually "at risk" while, at the same time, extracting wealth (here, in the form of pooled, financialized risk) primarily for the benefit of corporations in the Global North. I have also stressed the importance of reading the agri-fintech frontier in the context of U.S. empire. As the U.S. security state pivots to Africa, the kind of finance/security/development nexus mapped here will become increasingly relevant to critical conversations about the future of development in an age of climate crisis.

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Notes

1. NIC 2012, 13. Christian Parenti (2012) details the Pentagon's description of climate change as a "threat multiplier" in *Tropic of Chaos*.

2. NIC 2015, i. An NIC official that spoke at the 2016 World Food Prize Conference in Des Moines, Iowa, mentioned that these NIC assessments were unclassified derivatives of classified reports. Author field notes.

3. Speaking at a symposium at the Center for Strategic and International Studies in 2016, Adele Adeyemo, the deputy assistant to the president and deputy national security adviser for international economics, stated that the national security framing of the Global Food Security Act had been crucial for getting it passed with sweeping bipartisan support. See CSIS (2016).

4. On the connections between financial speculation and global food price crises, see Ghosh (2009) and Isakson (2015).

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Manhattan Heat Transfer: Energy and the Climate Unconscious in Modernist Visions of the American Metropolis

Moritz Ingwersen

> Heat. This is what cities mean to me. You get off the train and walk out of the station and you are hit with full blast. The heat of air, traffic, and people. The heat of food and sex. The heat of tall buildings. The heat that floats out of the subways and the tunnels. It's always fifteen degrees hotter in the cities. Heat rises from the sidewalks and falls from the poisoned sky. The buses breathe heat. Heat emanates from crowds of shoppers and office workers. The entire infrastructure is based on heat, desperately uses up heat, breeds more heat. The eventual heat death of the universe that scientists love to talk about is already well underway and you can feel it happening all around you in any large or medium-sized city.
>
> — Don DeLillo, *White Noise*

The Sublimated City

All that is solid melts into air. Written roughly a decade before Eunice Foote was the first to discover a positive correlation between carbon dioxide levels and atmospheric heat absorption (Foote 1856)—now known as the greenhouse effect—the perhaps most frequently reprinted line from Marx and Engels's *Communist Manifesto* articulates the advent of modernity as an intervention into climate. As a liberal translation of the German *alles Ständische und Stehende verdampft*, it invokes the evaporation of both feudal structures and architecture,

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solid relations and solid matter. In the context of the Anthropocene and global heating, whose roots are frequently traced to the fossil-fueled regime of the steam engine (Crutzen and Steffen 2003; Malm 2016), I suggest taking literally the transformation of solids into air as a symptom of bourgeois capitalism. Marx and Engels's phrase signifies a process of sublimation in the twofold sense of a physical phase transition from solid to gas and a psychological translation of the unconscious into cultural activity. The rise of modernity is driven by the combustion of coal and overshadowed by an unprecedented emission of gaseous waste products into the air. By the mid-nineteenth century, CO_2 levels had surpassed all previously recorded maxima (Bonneuil and Fressoz 2017, 16), and in 1890, "more than half of global energy [came] from fossil fuels," as Jordan B. Kinder and Imre Szeman point out (2020, 90). Following the analytic of what contemporary energy scholars examine as "petromodernity" (LeMenager 2014, 67), I would like to argue that the climatological implications of this steep incline in fossil fuel consumption is both omnipresent and obscured in the aesthetics of American modernism, a cultural formation inextricable from the rise of the modern metropolis and the apotheosis of what Andreas Malm (2016) calls fossil capital. This argument links up with a recent surge in important conversations between new modernist studies and the energy humanities, such as Joshua Schuster's *The Ecology of Modernism* (2015), Andrew Kalaidjian's *Exhausted Ecologies* (2020), and Michael Rubenstein and Justin Neuman's *Modernism and Its Environments* (2020), which revisit the representations of energy regimes at the beginning of the twentieth century in relation to their environmental aesthetics and politics. Against the backdrop of recent propositions of the "Urbanocene" (Chwałczyk 2020) and the urgent need for new narratives of a future beyond fossil fuels, I read these revisionary investigations of modernism as effective critiques of a cultural inflection point not only in the history of global heating, urbanization, and fossil fuel consumption but also in the development of a sticky utopian imagination somewhere between images of city metabolism, techno-futurism, avant-garde experimentation, and what Schuster calls "regeneration through pollution" (2015, 1).

Even though "the beginnings of the massive transformation of air through pollution and rising carbon dioxide emissions in the course of the Industrial Revolution" coincide with "the birth of modern meteorology and climate science," as Eva Horn points out (2018, 14), the material entanglements between climate and human activity at the time remained largely unaddressed (cf. Badia et al. 2021, 2). In their introduction to *Climate Realism: The Aesthetics of Weather and Atmosphere in the Anthropocene* (2021), Lynn Badia, Marija Cetinić, and Jeff Diamanti point to a speech given by Marx to an audience of workers in 1856 where he compares the transformational power of "steam, electricity, and self-acting mule" to the weight of an oppressive yet imperceptible atmosphere: "although the atmosphere in which we live, [*sic*] weighs upon every one with a 20,000 lb. force, do you feel it?" (Marx 1969, 500). Air, or atmosphere, functions as the primordial signifier of an environmental relation that precisely, because of

its metabolic elementality, remains imperceptible. For Badia and colleagues, the metaphorical employment of atmosphere in this passage by Marx is telling, as it establishes a link between "the material force of a startlingly energy-intensive mode of industrial production" and "the material force of planetarity"—a relation that while "lurk[ing] at the edges of [industrial capitalism's] weather reports" came "bursting into full-blown anthropocentric climate change [only] once the energy [harnessed] for value production returned as the climate of our historical present" (Badia et al. 2021, 3). The return of climate and Badia and colleagues' call for a "climate realism" that proceeds from the estranged aesthetic of an observer enmeshed in the commingling material fluxes of industry, culture, and atmosphere links up with what in the latter parts of this article I call the climate unconscious of American modernism. As a heuristic framework, the climate unconscious calls for a consideration of the repressed, embodied, and sublimated dimensions of atmospheric energy entanglements. Both in a figurative and in a physical sense, the energetic affordances of the modern metropolis can be traced along the reciprocal exchanges between built environment and atmosphere.

The cover of the 1988 Penguin edition of Marshall Berman's influential study *All That Is Solid Melts into Air: The Experience of Modernity* is programmatic in this regard. It features an image of Howard Cook's 1930 lithograph *Lower Manhattan*, which displays the urban energy regime through the contrast of architectural bulk and illuminated air. Created at the dawn of the Great Depression and at the apex of New York City's second skyscraper craze, Cook's artwork shows a section of the city's skyline starkly silhouetted against a sooty twilight and triumphantly towering over steamships that congregate in the East River at the bottom of the image. Invoking the registers of the geometrical sublime (see Nye 1996, 77–108), the outlines of the skyscrapers are accentuated in a dramatic contrast of light and shade, creating an atmosphere of both ominous splendor and smog, or what Stephanie LeMenager calls "oil weather" (2014, 78). The modernist city in Cook's rendition radiates energy in the form of both waste heat and light. Similar to the coronated and cenotaphic skyscrapers in Hugh Ferriss's 1922 series *Study for Maximum Mass Permitted by the 1916 New York Zoning Law*, Cook's buildings are delineated by an ambiguous halo, shooting off streaks of white into the sky. Are these fugitive fumes of spent fossil fuels that emanate from hidden chimneys or diffuse beams of electric spotlights designed to stage the city as spectacle? This visual ambivalence might be understood as symptomatic of a shift in the American representation of energy in the early decades of the twentieth century from the material condition of its production to the cultural symbolism of its consumption. The polluted airs that pervade nineteenth-century images of industrial cityscapes give way to a glorified if not dream-like aesthetic of urban energy that is less concerned with atmospheric waste heat and carbon emissions than with visions of progress, techno-optimism, and cultural vibrancy. For Berman, the phrase by Marx and Engels prominently referenced in the title of his book signifies that "the heat that destroys is also superabundant energy" (1988, 89), an observation particularly applicable to the American metropolis. On

a visit to New York in 1906, H. G. Wells is struck by a city "lavish of light" and "full of the sense of spending from an inexhaustible supply" (quoted in Nye 2018, 6). In this sense, Cook's *Lower Manhattan* monumentalizes energy abundance through the vexing registers of illumination and evaporation. Similar to the gloriously electrified cityscapes of fellow artists such as Ferriss, Joseph Stella, or Georgia O'Keefe, Cook's image visualizes a tension between the exhaustion and, perhaps, compensatory glorification of energy in the modernist imaginary.

As the site of the world's first electrical power grid installed by Thomas Edison in 1881, lower Manhattan is the prototype of the electrified American city. In the context of the spectacular employment of incandescent lighting in expositions, commercial displays, and city design around the turn of the century—the invention of the tungsten lamp in 1904 facilitated the illumination of whole buildings with powerful floodlights—(Nye 2018, 174), Cook's scene is doubly conditioned by the combustion of fossil fuels. "During the Progressive era," as Nye points out, "electricity increasingly came from coal-fired power plants that polluted the air [and] reduced sunlight while exposing the lungs to noxious gases and soot particles" (2018, 6). Not only is the illumination of Cook's city enabled by coal fires, but the spectacle of light beams is enhanced by a reflective medium of exhaust and dust that saturates the urban atmosphere, an effect also deliberately explored in the use of "smoke bombs and steam" in the light design of New York City's Hudson-Fulton Celebration of 1909 (Nye 2018, 176). Paradoxically, the modern cityscape both obscures and materializes its energy entanglements. While the display of energy becomes the modern(ist) paradigm par excellence, especially with the advent of electricity, the physicality of its generation and climatological ramifications is rendered increasingly invisible (cf. Rubenstein and Neuman 2020, 24–56). Invoking the American of the electric age as "the servant of the powerhouse" in 1904, Henry Adams notes not without concern that "the new American showed his parentage proudly; he was the child of steam and the brother of the dynamo" (2015, 124). Eliciting a mixture of shock and awe, the enormous dynamos in the *Palais de l'Electricité* at the 1900 Paris World Fair for him famously represented a "moral force" and symbol of "ultimate energy," a sensation certainly heightened by their disassociation from the "tons of poor coal hidden in a dirty engine-house carefully kept out of sight" (101). "In contrast to the steam technologies that dominated early fairs," as Nye elaborates, "electricity was instantaneous and invisible, working according to principles few could grasp" (2018, 117). The transition from gas lamps to electric systems prompted the imagination of energy as "a single, inorganic form that passed through a consumer's devices and left nothing behind. The waste was displaced to distant mines, oil wells, power plants, and the like" (3). Solids melting into apparent nothingness, dirty engines carefully kept out of sight, and the invisibility of waste are powerful symbols of a modern energy regime in which concerns about climate change, ecology, and sustainability are virtually nonexistent.

With perhaps a similar point in mind, Darran Anderson revisits the Marxian adage in his sweeping study *Imaginary Cities*: "'All that is solid melts into air,' foretold Marx and perhaps nothing was solid to begin with. We see the shell, the carapace of dwellings and not the systems of power, waste, communication that are functioning in the walls, under the ground, through the sky" (2015, 409). In his reading, solidity becomes a cipher for the unacknowledged interior or infrastructural dimension of the modern metropolis. With reverberations of T. S. Eliot, modern architecture is hollow; modern architecture is stuffed—with pipes, wires, and ventilation systems designed to create a distance between the primary sites of energy consumption and the primary sites of energy extraction, production, and dissipation. In Cook's vexing image of piled-up buildings breathing light and fumes, petromodernity reveals itself as a condition where "energy has managed to hide in plain sight" (Kinder and Szeman 2020, 81), omnipresent yet concealed by layers of brick, steel, ornament, and metaphor so as to cleanse it from the material modes of its production. "Beneath the apparently solid surface, they betrayed oceans of liquid matter" (Marx 1969, 500). How prescient that the same speech invoking the atmosphere as heavy burden opens with a geomorphology of the 1848 revolutions that reads like a statement about the hidden infrastructure of petroleum underneath the modern cityscape.

Half a century after the 1859 discovery of oil in Pennsylvania and abetted by oil discoveries in Texas and aggressive U.S. investments in Middle Eastern oil fields in 1928, oil was on its way to eventually replacing coal as the nation's primary energy source in 1954 (U.S. Energy Information Administration 2011). Beginning in 1909, its rise runs parallel to if not correlates with the development of modernism in the American arts—from painting to architecture, music, and literature. As a cultural, political, and social lubricant, "oil is everywhere during the modernist era," as Joshua Schuster observes in his programmatically titled essay "Where Is the Oil in Modernism?" (2017, 196). And yet "oil—and, for that matter, most other raw non-renewable commodities—rarely appears directly in modernist art" (Schuster 2017, 196). This does not mean that oil is entirely invisible; rather, it is sublimated into a celebration of the experiences, aesthetic practices, and commodities it enables and sustains—speed, mobility, machines, light, cars, transience, cinema, skyscrapers, and so on. Insofar as the Italian futurists can be regarded as heralds of a particularly extravagant—and dangerous—techno-utopian sentiment that has also managed to infect American mentalities, modernism may have been born from "the use of energy and recklessness as common, daily practice" (Marinetti 2011, 63).

Building on what Amitav Ghosh has famously described as "the muteness of the Oil encounter" in American literature (2017, 432), many recent petroculture scholars have contributed to exposing and complicating the seeming invisibility of fossil fuels in twentieth-century art and fiction. In light of oil's absent presence, Peter Hitchcock in "Oil in an American Imaginary" calls for "an imaginative

grasp" of the "abstruse narrative of modernity, not in the mere content of oil's omnipresence, but in the very ways oil has fictively come to define so much of being in modernity" (2010, 81). In this light, energy humanities scholars since Patricia Yaeger have engaged American literature via its "energy unconscious" (Bellamy 2019; Macdonald 2016; Szeman and Boyer 2017, 8; Yaeger 2017, 442), a concept that, as Brent R. Bellamy explains, "attempts to name the unarticulated cultural logic whereby fossil fuels permeate human life yet remain unintelligible, though embedded across a whole range of practices" (2019). Part and parcel of explicating the energy unconscious, from its articulations in the mid-century road novel to late-capitalist science fiction, is to highlight the ways in which "energy invisibilities may [also] constitute different kinds of erasures" (Yaeger 2017, 443). Such different kinds of erasures include the ways in which the representation of energy implicitly or explicitly conceals sites of extraction and pollution, energy infrastructures, exploitative labor practices, class consciousness, and environmental racism. The energy unconscious and what I call the climate unconscious are intimately related as forms of amnesia regarding the ecological interdependencies among energy consumption, atmospheric emission, and the afterlife of resources. Whereas the concept of the energy unconscious points to the cultural mechanisms by which energy becomes disentangled from the modes of its production, the climate unconscious can be traced in the aesthetic operations that condition the imaginary separation of cultural industry and embodied subjectivity from the circulating, trans-corporeal flows and currents of the atmosphere. When resources apparently melt into air and become invisible as naturalized cultural ambient, both of these mechanisms of repression are entwined.

To understand the foundational nature of the energy unconscious, it is instructive to consider how energy waste is already inscribed in the second law of thermodynamics, the formulation of which by William Thomson and Rudolph Clausius around 1850 is inextricable from the rise of the steam engine (cf. Dagett 2019). It axiomatizes that every process of energy transformation dissipates energy, which means that even though the total amount of energy in a given closed system is conserved, its capacity to perform work decreases with every material interaction. Another way of saying the same thing is that every interaction among macroscopic material bodies converts energy and creates "waste," whether in the form of dispersed heat, dust, noise, exhaust, leakage, injury, or excrement. Even without consulting *Purity and Danger*, Mary Douglas's classic 1966 anthropological study of pollution, one can understand human civilization generally and Western modernity in particular as an elaborate exercise in the banishment of waste from consciousness. "That which escapes the boundaries must be evacuated, policed, made invisible," as Sara Daggett writes in *The Birth of Energy* (2019, 8). As an operation that relies on representation and imagination, this process is preeminently cultural. To draw attention to the energy unconscious is thus to reveal these mechanisms of cultural repression, to highlight the sites where the ramifications of energy consumption are displaced by fantasies of

social hygiene or technocultural utopia. It means reattaching cultural metaphors of heat, energy, or atmospheres to their material referents, connecting the pastoral or the sublime to its dirt, and tracing the dirt to its sources.

My aim in the following is to illustrate the cultural traces of the latent, sublimated, and entwined imagination of energy and climate in early twentieth-century American visions of progress by focusing on two literary texts that self-consciously engage the energy aesthetics of the 1920s–1940s metropolis. Perhaps counterintuitively, my first example is not a modernist text per se but a metacritique of the flawed futurist legacy of American modernism. Via a reading of William Gibson's 1981 short story "The Gernsback Continuum" (2003), I illustrate how the aesthetic of American modernism viewed through the mirror of the 1980s effectively conceals its energy entanglements behind surfaces of gleaming chrome and how atmospheric pollution is displaced by materialized metaphors of an obsolete utopia. Gibson's critical interrogation of past futures, I suggest, helps us understand why revisiting modernism through the lens of the energy humanities may be crucial for understanding the cultural deep structures of oil and how they need to be decentered in order to imagine a future after fossil fuels. As my second example, I read John Dos Passos's (2000) quintessentially modernist novel *Manhattan Transfer* (published in 1925) for traces of a synchronic cultural consciousness of the enmeshment between metropolitan subjectivity and climate. Not unlike Howard Cook's lithograph discussed above, the novel invokes the archetypal American metropolis as a simultaneous site of vibrant energy and complicated atmospheres. Inspired by Rubenstein and Neuman's "atmospheric reading" of the ways in which "atmospheric conditions could be unruly and conspicuous in modernist fictions, even when they were supposed to stay in the background" (2020, 23), I trace the novel's heightened concern with the situated conditions of energy dissipation and particularized atmospheres to argue that in *Manhattan Transfer*, climate, in fact, hides in plain sight.

The Sanitized City

In his 1981 short story "The Gernsback Continuum," William Gibson invokes the American techno-utopianism of the 1930s as a literalized phantasm that comes back to haunt the 1980s, a decade marked by the aftermath of a global energy crisis, austerity measures, climate deregulation, and the political rhetoric of a new Gilded Age. Told from the perspective of an unnamed photographer who has been commissioned to capture the material traces of American Streamlined Moderne, "a uniquely American form of architecture that most Americans are scarcely aware of" (2003, 25), Gibson's story reads like a guide to the aesthetic regime of petromodernism still surviving in the peripheries of the late twentieth-century city. On his mission, the protagonist's attention is drawn to "the movie marquees ribbed to radiate some mysterious energy, the dime stores faced with fluted aluminum" (Gibson 2003, 25), and to gas stations with "strange radiator flanges that. . . made them look as though they might generate potent bursts of raw technological enthusiasm" (28). As remnants of the 1920s–1940s, these

sites become symbolic of "a shadowy America-that-wasn't" (28), which reveled in fantasies of an energy-stoked future that never materialized outside the spheres of modernist architecture, industrial design, pulp science fiction, and movie theaters. It is telling that the protagonist goes "for the gas stations in a big way" (28).

Albeit less aggressively than the Italian futurists serenading "exhaust pipes like serpents with galvanic breath" (Marinetti 2011, 63), American modernism in building and design is married to what LeMenager calls "petroleum aesthetics" (2014, 6)—the ways in which oil, gas, and coal saturate petromodernity on a sensorial and affective level while remaining conspicuously absent from direct representation. Throughout the 1930s, gas stations, bus terminals, locomotives, and home appliances were modeled on fossil-fueled visions of excessive futurist mobility. As Gibson's narrator puts it, with an unmistakable reference to one of Raymond Loewy's most famous designs, even "pencil sharpeners looked as though they'd been put together in wind tunnels" (Gibson 2003, 26). As an industrial design movement, the Streamlined Moderne revisited by Gibson disassociated the experience of speed and energy from its material resources and environmental costs. Sublimated into aerodynamic surfaces of gleaming chrome, fossil fuel comes to permeate modern culture not as a sticky nonrenewable raw material and prime factor of global warming but as a purchasable idea and feeling of efficiency, hygiene, freedom, progress, and functionality. In this light, it is only consistent that Raymond Loewy, the founder of streamlined design, also designed the logos for Shell, Exxon, and BP. In the prominent Art Deco architecture in New York City, this connection to petroculture is no less apparent. It is no coincidence that two of the most iconic Manhattan skyscrapers of the 1920s—the American Radiator Building and the Chrysler Building—metonymically relate to the dominant fossil fuel commodities of the time. Built by the American Radiator Company, one of the leading manufacturers of domestic boilers advertised for their cleanliness in heating American homes, the Radiator Building visually and deliberately resembles stacks of coal topped by golden flames. Similarly, the steel tower of the Chrysler Building, commissioned by the third-largest American car manufacturer of the 1920s, is modeled on the chrome grills of the Chrysler automobile (see Nye 1996, 94). Fossil fuel relations are capital relations. As promethean advertisements for their owners, these buildings also function as monuments to the dream of an American future built on fossil fuels and stage energy consumption as a spectacle without the dirt.

In his exploration of the architectural American dreamscape, Gibson's protagonist is aware that these design efforts were "only skin-deep; under the streamlined chrome shell, you'd find the same Victorian mechanism. . . . It was all a stage set, a series of elaborate props for playing at living in the future" (Gibson 2003, 26). As in the case of the spectacular light designs of American cities and world fairs, the engine house is merely hidden, the depletion of resources and pollution of atmospheres repressed. Announced by its title, "The Gernsback Continuum" literalizes the permeation of American culture around 1930 by an

energy imaginary that is as much part of actual building design as it is of the science fiction pulp magazines that gained popularity after Hugo Gernsback's launching of *Amazing Stories* in 1926 (see Westfahl 2015). Sensitized to the "ephemeral stuff extruded by the collective American subconscious of the Thirties," the protagonist begins to find his reality punctured by manifest visions of futuristic cities, airships, and "whizzing chrome teardrops with shark fins" that seem to come straight out of the visual culture of Golden Age science fiction (Gibson 2003, 35). Rationalized as "semiotic phantoms, bits of deep cultural imagery that have split off and taken on a life of their own" (31), these scenes impinge on the narrative as specters of a skewed utopianism that sharply clashes with the diegetic present. With references to Fritz Lang's *Metropolis* (1927), William Menzies's *Things to Come* (1936), and the iconic pulp science fiction cover art of Frank R. Paul, Gibson portrays the modernist era as the hotbed of a glorified futurist aesthetic in which cultural diversity, resource scarcity, and waste has no place. In a key episode, the protagonist is on the road—as throughout most of the story, highlighting perhaps Gibson's own energy unconscious—and startled by the sight of a techno-utopian behemoth rising up behind his car:

> Spire stood on spire in gleaming ziggurat steps that climbed to a central golden temple tower ringed with the crazy radiator flanges of the Mongo gas stations. You could hide the Empire State Building in the smallest of those towers. Roads of crystal soared between the spires, crossed and recrossed by smooth silver shapes like beads of running mercury. The air was thick with ships: giant wing-liners, little darting silver things (sometimes one of the quicksilver shapes from the sky bridges rose gracefully into the air and flew up to join the dance), mile-long blimps, hovering dragonfly things that were gyrocopters. . . I closed my eyes and swung around in the seat. When I opened them, I willed myself to see the mileage meter, the pale road dust on the black plastic dashboard, the overflowing ashtray. (33; ellipsis in original)

Like a superlative version of 1930s Manhattan and a materialization of Umberto Boccioni's radical confidence in "the radiant splendour of our future" (2011, 75), this vision of the future metropolis derives its fantastic allure from the side-by-side of towering temples with radiator flanges and an atmosphere thick not with aerosols but with dancing airships whose modes of propulsion remain mysterious. It serves as an excellent example of why "sf is crucial, as both cipher and symptom, to the endeavour of decoding the energy unconscious," as Brent Bellamy insists (2019). Vis-à-vis the often covert energy imaginary of science fiction, Graeme Macdonald raises a set of questions that help readers confront the energy unconscious of the above scene: "What *is* powering those spaceships? What heats those megacities? How are its inputs extracted and

refined and commodities made and distributed?" (2016, n.p.). We could extend this list by inquiring into the ideological mechanisms and technological fixes that underlie the apparent disassociation of energy expenditure from climate and atmosphere. As if to inoculate himself against the irrationality of this energy regime, the protagonist forces himself to focus on the mileage meter, road dust, plastic, and spent cigarettes—material testimonies to energy exhaustion, waste, friction, and toxicity. Adorned with "searchlights [that] swept the sky for the sheer joy of it" and populated by toga-wearing Americans who "were white, blond, and. . . probably had blue eyes," the "illuminated city" presents itself as a direct descendent of Edison's electrified Manhattan, streamlined architecture, and Lang's *Metropolis* (Gibson 2003, 34)—whose mutual inflections are well documented (e.g., Mendlesohn 2009). At the same time, it speaks to the exclusionary American utopianism intrinsic to the well-worn trope of "the shining city on a hill," reiterated in Ronald Reagan's "Vision for America" address that inaugurated the 1980s.

Exhibiting "the sinister fruitiness of Hitler Youth Propaganda" and propelled by "a dream logic that knew nothing of pollution, the finite bounds of fossil fuels, or foreign wars it was possible to lose" (Gibson 2003, 34), this sanitized retrofuture reeks of eugenics, climate amnesia, and proto-fascism. In case this has not been obvious so far, Gibson's story offers a searing critique of the futurist imaginary that co-emerged with American modernism. His dismissal of American utopian thinking of the 1920s–1940s is programmatic for the ways in which cyberpunk writers stylized themselves in opposition to the authoritarian and naive rhetoric of stability, abundance, and techno-optimism of both Golden Age science fiction and the Reagan era. In his preface to the 1986 *Mirrorshades* collection, the inofficial cyberpunk manifesto, Bruce Sterling, certainly with an eye to Gibson, insists that "times have changed since the comfortable era of Hugo Gernsback, when Science was safely enshrined—and confined—in an ivory tower. The careless technophilia of those days belongs to a vanished, sluggish era" (1991, 346). Inaugurated perhaps by Edward Bellamy's influential 1887 vision of Boston in the year 2000, the utopian invisibility of energy in the early twentieth-century American imaginary relies on buildings of "colossal size and architectural grandeur" (2000, 25) distinguished by "the complete absence of chimneys and their smoke" (27) and symbolic of "material prosperity" without "the crude method of combustion" (28). By contrast, the urban climate of 1980s cyberpunk finds its emblematic articulation in a sky "the color of television, tuned to a dead channel," hailed in the opening line of Gibson's *Neuromancer* (1984, 1) and the oil weather of 2019 Los Angeles punctuated by the fiery flares of urban refineries in the title sequence of Ridley Scott's classic *Blade Runner* (1982). While, admittedly, energy expenditure and sustainability remain equally unproblematized in the data-driven world heralded by cyberpunks (see Bellamy, 2019), "The Gernsback Continuum" is legible as a critique of the tacit modern assumption that a future built on fossil fuels would bring "unlimited power"

to America (Adams 2015, 131)—a sentiment that, with varying degrees of enthusiasm and critical reflection, held sway in a cultural milieu that leads from Edward Bellamy to *Amazing Stories*, from Henry Adams and the fin de siècle expositions to the GM Futurama exhibit at the 1939 world's fair in New York. Its aesthetic regime is integral to what LeMenager calls "petrotopia," a "hegemonic 'spatial ordering'" of modernity around petroleum culture that "represents itself as an ideal end-state, the service economy made flesh, repressing the violence it has performed" on those displaced by the promises of comfort, efficiency, and speed (2014, 74–75). Exposing the physical constraints, ecological ramifications, and concealed violence in Golden Age visions of the future, Gibson's protagonist reinserts the material reality of fossil fuel power:

> The Thirties dreamed white marble and slip-stream chrome, immortal crystal and burnished bronze, but the rockets on the covers of the Gernsback pulps had fallen on London in the dead of night, screaming. After the war everyone had a car—no wings for it—and the promised superhighways to drive it down, so that the sky itself darkened, and the fumes ate the marble and pitted the miracle crystal. (Gibson 2003, 28)

The association of Blitzkrieg, superhighways, a darkened sky, and corrosive fumes reveals the repressed dimensions of petrotopia already latent in the Roaring Twenties. All that is solid does in fact not melt into air and become invisible but returns with a crash, lingers in the atmosphere, and leaves an ill-boding patina on the facades designed as a projection surface for dreams of progress and prosperity.

The Dissipating City

The passage from Don DeLillo's *White Noise* (1985) cited in the epigraph of this article invokes heat as the atmospheric-material substrate of modern city life. Underneath cultural metaphors of melting pots, the modern city is quite literally a site of metabolic exchange and of the dissipation of heat into a planetary system of atmospheric circulation: "Heat. This is what cities mean to me. . . . The heat of air, traffic, and people. The heat of food and sex. The heat of tall buildings. . . . The entire infrastructure is based on heat, desperately uses up heat, breeds more heat" (DeLillo 2002, 10). The potential energy stored in bodies, buildings, fuel, and food—not to speak of the heat capacity, thermal conductivity, and emissivity of urban construction materials and the reflection coefficients at work as thermal radiation hits a kaleidoscope of gleaming surfaces—eventually melts into the atmosphere and creates what meteorologists call urban heat islands to describe why "it's always fifteen degrees hotter in the cities" (DeLillo 2002, 10). As a harbinger of the proverbial "heat death of the universe," the degradation of energy into thermal noise and its metonymic relation to a "poisoned sky" is

part of an entropic process that, as sketched out above, functions as a physical analogy of the energy unconscious (DeLillo 2002, 10).

In this final part of my article, I turn to John Dos Passos's *Manhattan Transfer* as a literalization of how the American metropolis materializes heat transfer and thereby situates the physicality of climate—a category notorious for its statistical abstraction and nonlocality (see Morton 2013; Horn 2018). By bringing the entropic conditions of the atmosphere down to street level, Dos Passos, in fact, manages to impart a sense of the ways in which cultural activity, energy, and climate are enmeshed and materialize in local, embodied, and affective relations between modern subjects and city. In this sense, my reading links up with Andrew Kalaidjian's suggestion of an "immersive approach" "to the modernist novel—*as* place—. . . that is not primarily visual but proprioceptive in its understanding of the material influences that control and shape the world of the text" (20). Published in 1925, *Manhattan Transfer* partakes in the same cultural milieu as Gernsback's launch of *Amazing Stories* in 1926, Cook's lithograph *Lower Manhattan*, Lang's *Metropolis*, and, perhaps most programmatically, Upton Sinclair's 1927 novel *Oil!*, the first and oddly solitary example of the American oil novel (Ghosh 2017; Hitchcock 2010; LeMenager 2014).

In *Manhattan Transfer*, fossil fuels are omnipresent—not as an overt focal point but as a naturalized background that continuously conditions the characters' senses in the form of smells, noise, and pollutants. The city's atmosphere is saturated with "the smell of scorched grease and steam" (128), "dust that smelled of gasoline" (148), "noise and fume" (211), and "coal smoke" emitted by a "rumbling" L train (24). Characters grope through "a tangle of gritty sawedged brittle noise" (129) and breathe in "rumble and grind and painted phrases. . . staggering like a pillar of smoke above the April streets" (316). Ambivalently, "the sky above the cardboard buildings" is invoked as "a vault of beaten lead" (238) but also in almost pastoral registers as filled "with flaked motherofpearl clouds" (109) and "whitecotton steam" (251). To speak of the representation of climate in *Manhattan Transfer* means attending to "the complex question of the representability of the unrepresentable" in ways that are related to the novel's textual translation of noise, as excellently discussed by Philipp Schweighauser (2008, 51). By capturing "the radically altered soundscape of modernity," he notes, modernist writers such as Dos Passos "let its noise seep into the very formal organization of their texts in an attempt to preserve something of the nontextual phenomena they aim to represent" (51). I want to advance a similar argument with respect to *Manhattan Transfer*'s representation of climate. I suggest that both the setting and the textual format of the novel *metabolize* the climatological conditions of the modern metropolis.

In its abstraction and scale, the problem with the concept of "climate," as Horn explains, is that it has "cut the air off from any phenomenal perceptibility . . . and from the culturally and regionally diverse images, narratives, dreams, observations, and cultural practices that human beings have historically used to come to terms with climate" (2018, 16). In its visceral depiction of subjects

exposed to the infrastructural material flows of the city, *Manhattan Transfer* manages to reattach climate to human experience by localizing, embodying, even atomizing the atmospheric effects of petromodernity. The link between atmosphere, heat, and noise in this context is not tangential but programmatic. Not only is noise a direct function of the perceiving subject's physical exposure to an agitated environmental medium, but its definition following Claude Shannon's mathematical theory of information is equivalent with the definition of entropy in statistical thermodynamics and thus directly relates to the dissipation of energy, interference, and the randomized distribution of particles (see Clarke 2002; Schweighauser 2011). The noise of urbanity signifies heat, friction, perturbation, and diffusion while also raising the image of the city as a complex physical communication system characterized by flow, blockage, spillage, and contamination (see Marshall 2010). Quite appropriately, Iain Colley subsumes the aesthetics *Manhattan Transfer* under the concept of "Brownian Motion," "the irregular jostling of small particles suspended in a gas or liquid, full of backtrackings and collisions, seemingly random but obeying the physical rules of matter" (1978, 49). This logic pertains as much to the contingent encounters and erratic trajectories of the novel's characters as to the turbulent suffusions of the physical urban atmosphere.

Through the metonymic relation between noise and the atmospheric circulation of particulates, Dos Passos presents the city as a space of intense vitality and energy consumption: the streets are "noisy as a brass band, full of tambourine rattle, brassy shine, crystal glitter, honk and whir of motors" (Dos Passos 2000, 273). Routinely, noise is correlated with the material traces of physical exhaustion: "the grind of the wheels of producewagons made a deafening clatter and filled the air with sharp dust" (29); "icy dust, of grinding rattle of wheels and scrape of hoofs on the cobblestones" (53). Beneath gleaming towers and "the glow over the city that stands up incredibly into the night sky" (199), life in Manhattan around 1920 is gritty business: "roaring. . . trucks and delivery wagons" leave a "taste of dust in [Ellen's] mouth, particles of grit crunch[ed] between her teeth" (219); a "dusteddy swirling scraps of paper along the gutter fills her mouth with grit" (238). While the city's collective contribution to atmospheric emissions is metaphorically displaced as a radiant glow, modernity's energy entanglements are visceralized in the invasion of streets and bodies by the exhausted materiality of grit and dust.

In contrast to the sanitized visions of modernity embodied by illuminated skylines and streamlined design, scenes like these highlight what architecture scholar David Gissen calls "subnature," or "architecture's other environments," whose expression include dankness, smoke, gas, exhaust, dust, puddles, mud, debris, weeds, insects, pigeons, and crowds (2009, 17). According to Gissen, modernist American architecture more or less successfully negotiates these other environments, sometimes through expulsion, at other times by courting and deliberately integrating or aestheticizing them. In either case, modern city design is itself constitutive of what it seeks to repress. In the case of dust, this is

perhaps most obvious. "Dust is the result of natural decay in buildings, pollution from cars and factories, and the result of landscapes transformed by disasters . . . dust is always pervasive; though infinitesimal, it is never not there" (Gissen 2009, 88). In *Manhattan Transfer*, life is everywhere mediated by this transgressive and pervasive presence of the city as particularized subnature, to the point where Jimmy Herf, in a delirious episode, imagines shrinking "until he was of the smallness of dust, picking his way over crags and boulders in the roaring gutter, climbing straws, skirting motoroil lakes" (Dos Passos 2000, 317). Literalized here, the citizen of the modern metropolis merges with its material unconscious.

Highlighting the presence of spillage and waste, the close-up on the roaring gutter and motor-oil lakes illustrates what Kate Marshall in her persuasive reading of the novel describes as "the becoming-visible of infrastructure in this particular moment in American literary history" (2010, 56). According to her, *Manhattan Transfer* portrays a "landscape in which stopped pipes, traffic, congested ventilation and jammed signals reveal the complex, communicative relays systemically connecting persons and spaces that would otherwise work undetected" (Marshall 2010, 56). As when "women begin to drain gradually out of the tall buildings downtown, grayfaced throngs flood subways and tubes, vanish underground" (Dos Passos 2000, 276), the circulation of people through architecture is allegorized in terms of the drainage of pipes and the disappearance into concealed subterranean infrastructures, not unlike the banishment of waste from consciousness via underground sewage systems or hidden chimneys. Yet, rather than leaving these structures concealed, Dos Passos continuously draws attention to their presence. In what reads like an archetypal depiction of the return of the architecturally (and socially) repressed, Ellen "under all the nickelplated, goldplated streets enameled with May. . . could feel the huddling smell, spreading in dark slow crouching masses like corruption oozing from broken sewers, like a mob" (352). The metaphorical linkage between mobs and spreading ooze from broken sewers attests to the entanglements among congested streets, pipes, and atmospheres as the other environments of nickel- and gold-plated architecture.

By ceaselessly invoking these subnatural and infrastructural sites, Dos Passos foregrounds what I would like to call the climate unconscious of the modern metropolis: the taken-for-granted, quotidian, and experiential sites of energy dissipation and the production and circulation of (polluted) atmospheres below the abstracted scale of a global climate system. In its emphasis on the aesthetics of grit, noise, dust, ooze, and fumes, the novel invokes "the material reality that underwrites the totality," an aspect introduced by the editors of *Petrocultures* as integral to reckoning with the "infrastructural unconscious" of "petroscape aesthetics." As they explain, vis-á-vis the global entanglements of energy "there's no singular subject who can know the whole. . . . There are only fragments of experience, expertise, action, and thoughts to be apprehended and assembled in new and revolutionary ways" (Wilson et al. 2017, 410). Correspondingly, I suggest that the textual fragmentation of perspectives and the

narrative polyvocality of *Manhattan Transfer*—mirrored in the characters' futile search for "the center of things" (Dos Passos 2000, 16)—help us understand climate not as a totality but as an affective and situated condition and as the product of specific petromodern emplacements in relation to city life. In other words, the *novel* localizes climate not with respect to a sense of planet but in the sensorial reality of a specific place within the urban chaos of modernity, however subjective, infinitesimal, or transitional that place may be.

In visual registers analogous to cubist and futurist artworks, the characters' perception of the city is conditioned by the petro-aesthetic experience of speed and transience: "a confusion of bright intersecting planes of color, faces, legs, shop windows, trolleycars, automobiles" (Dos Passos 2000, 300). As in Umberto Boccioni's 1912 painting *The Street Enters the House*, the realms of outside and inside in the novel repeatedly intermingle, suggesting that the human relation to atmospheres always already implies both envelopment and permeation. Melting, creeping, and squirming through the porosities of bodies and buildings, noise, like the pollutants of the engines that produce it, invades apartments as "black spiraling roar outside. . . melting through the walls" (50), "rattling sounds of cabs and trolleycars squirm[ing] brokenly through the closed windows" (81), or "the horrible great dark of grownup people, rumbling, jiggling, creeping in chunks through the windows, putting fingers through the crack in the door" (333). Ultimately, the title *Manhattan Transfer* thus denotes not only the switch from steam to electricity as the signifier of a New Jersey transfer station (see Marshall 2010) or the city metabolism of people and traffic but also the circulation of its atmosphere: the physical transfer of heat and pollutants as a direct consequence of the dissipation of energy.

As a negotiation of the 1920s metropolis suffused by energy, *Manhattan Transfer* is much more ambivalent than cotemporaneous visions of the futuristic city in architecture, painting, or science fiction. Rather than metaphorically displace modernity's energy entanglements, it confronts the material and mundane reality of dissipation and resource consumption by highlighting the sites where urban life and climate are enmeshed and embodied. Tellingly, it is only Jimmy's view from a distance that allows for a simultaneous reckoning with the full scope of the city's energy expenditure and its aestheticization as a utopian dreamscape. Reentering the city by ship on their return from a trip to Europe, Jimmy and Ellen soak in the scenery of "sweeping coils of brown smoke and blobs of whitecotton steam" and a "sootsmudged horizon, tangled with barges, steamers, chimneys of powerplants" against which "lower New York was a pink and white tapering pyramid cut slenderly out of cardboard," prompting Jimmy to exclaim, "it's the greatest sight in the world" (Dos Passos 2000, 251). As in Howard Cook's image of lower Manhattan, atmospheric pollution is naturalized and swiftly absorbed into the aesthetics of an energized spectacle. Yet, decisively, this glorified image of the city is immediately coded as unreal—made of cardboard—and in the context of the novel remains an aberration, a brief glimpse at the dream logic at work in the modernist imaginary. Much more realistic is Jimmy's final impres-

sion as he eventually leaves New York in the novel's concluding scene. As he traverses the city's industrial outskirts, he walks "along a cement road between dumping grounds full of smoking rubbishpiles" (360)—reminiscent perhaps of the "valley of ashes" on the periphery of Manhattan invoked in *The Great Gatsby* (1925)—and has breakfast across from "a gasoline station" (360), the first and only one featured in the novel. The climate unconscious of the modernist metropolis as the apotheosis of petromodernity reveals itself in the symbolic gap between gas station and smoking rubbish, between the fantasy of an inexhaustible, sanitized supply of fossil fuels and its aesthetic (and cognitive) disassociation from the toxicity of energy waste products and the pervasive release of hydrocarbons into air and soil.

Conclusion

The climatic un/conscious of the urban American imaginary at the center of this article articulates itself in the wake of 1920, a year that marked the first time in which more Americans lived in cities than in rural areas and in which the growing oil demand of automobile, building, and shipping industries exceeded the national supply, sparking perhaps the earliest anxieties about peak oil (Nordhauser 1973, U.S. Census Bureau 2021). Climate and weather in this era are not absent from cultural representation but dislocated. They are pushed to an unacknowledged outside in the sanitized cities of Golden Age science fiction and atomized in the modernist imagination of urban atmospheres. The process of cultural sublimation at work in the evaporating solids and psychoclimatic displacement of the 1920s shares not only an etymological root but also a history with the sublime. By 1930, the aesthetic sensibilities of American landscape artists had fully transitioned from the meteorological sublime of the Hudson River School to what a 2013 Exhibition on modernist art at the Hudson River Museum calls "the industrial sublime" (cf. Jensen and Bland 2014). Attention to weather and stormy atmospheres had been eclipsed by a celebration of industry; turbulent cloudscapes had been replaced with whitewashed fumes and energy infrastructure. Yet the physicality of climate is everywhere found in the ways that thermal energy is circulated, conducted, radiated, converted, and absorbed. The literary texts discussed above point to similar mechanisms by which climate becomes unconscious. The petrotopian imaginary recapitulated by Gibson relies on a fetishization of order and control. It raises the specter of an idealized place cordoned off from the entropic processes of both the atmospheric and the machinic modes of heat transfer that sustain it. *Manhattan Transfer*, by contrast, amplifies sites of atmospheric chaos and abrogates any sense of control or ontological detachment. Jimmy Herf finds himself always already at the center of things. He has entered the steam engine. Too immersed to reckon with atmosphere or climate as phenomenally distinct from the material flows of the city and even himself, he becomes the prototypical subject of a climate realism that "calls for us to consider that what it means to be a human observer is to already veer toward and with an altered sense of meaning-making,

detailing, and also weirding the coherence of the world" (Badia et al. 2021, 6).

Michel Serres makes an analogous point in his reading of Robert Musil's *Man without Qualities* (1931), a modernist city novel that programmatically opens with a narrative map of atmospheric pressure gradients over the Atlantic (cf. Serres 1978, 1982). As Serres writes, "Musil. . . goes inside of the boiler. His machinery is aleatory" (1978, 16). If we can recover climate from *Manhattan Transfer*, it is perhaps in the same way that Serres reads contingent encounters, partial observers, and turbulence in Musil: as the constitution of a space "where the local is inserted within the global" (10). Let me propose that in Dos Passos, as in Musil, the city as boiler and atmosphere is described locally, no longer in terms of its construction or its general dynamics but rather in terms of the numerous and turbulent complicated events that take place in the heart of it, inside the reservoir. This is the era of Boltzmann and Gibbs. What goes on then in the liquid? The answer is in the text: collisions, slides, irregularities, changes, dissonances, disorder, pulsations, rhythm, order (Serres 1978, 16).

Manhattan heat transfer: splicing the word "heat" into the title of one of the most iconic modernist city novels indicates that the unacknowledged transfer of thermal energy—the circulation and collision of particles in motion and a key parameter in the shaping of climate—needs to be understood as the primary force and symbol of a modernity conditioned by the combustion of fossil fuels. Against the backdrop of the intense energy expenditure of the 1920s and the conspicuous obfuscation of climate entanglements in representations of the modern metropolis, it stands as a telling fact of U.S. environmental history that the American meteorologist J. B. Kincer presented the first scientific evidence of global warming in 1933 (Kincer 1933), the same year that saw the first of several severe dust storms ravage the plains of South Dakota, inaugurating the decade of the Dust Bowl—perhaps the twentieth century's most devastating reminder that American industry and atmosphere are inextricably interlinked.

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Climate Migration Fiction and Multispecies Mobility in the Racial Capitalocene

Claudia Sadowski-Smith

One of the main features of our contemporary time is the immense growth in human movement worldwide (McDonnell 2018). The phenomenon continues to be understood and regulated through national and international legislation that date to the nineteenth and twentieth centuries. These laws fail to consider how a warming climate is exacerbating the socioeconomic and political conditions that have served as main push factors for migration. Climate change is a major feature of what climate scientists Paul Crutzen and Eugene Stoermer have proposed as a new period called the "Anthropocene," which dates to the industrial revolution and is marked by the effects of human activity on the earth's geology and ecosystems (Crutzen and Stoermer 2000).

Among the work by social scientists and humanists on alternative origins of the ecological crisis, Jason Moore's concept of the "Capitalocene" is arguably the most incisive in describing climate change as a *consequence* of the capitalist world ecology (2017, 619, emphasis in original). The system originated in sixteenth-century commodity production, consumption, and exchange; accelerated in the context of European colonialism; grew after 1850; and exploded after 1945 (Moore 2017, 621). Françoise Vèrges (2017) has amended Moore's concept to the "racial Capitalocene" in order to acknowledge the history of racialized environmental politics and the uneven ecological impacts of the modern world system of "racial capitalism" (Robinson 1983) on minoritized populations and those in the Global South. We are currently in the last, neoliberal stage of the racial Capitalocene, which dates to the 1980s. Dominated by the belief in unregulated markets, this phase is characterized by dramatic increases

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in socioeconomic inequality (Harvey 2005) and by the failure of nation-states to significantly reduce greenhouse gas emissions as the predominant drivers of climate change.

The increasingly more unequal distribution of climate change burdens during this phase expands upon and exacerbates the effects of longstanding racialized systems of socioeconomic inequality and stratification that drive human movement. More extreme and frequent weather events associated with climate change as well as the slow-onset effects of a warming climate, such as drought, desertification, and sea level rise, are creating vanishing or increasingly uninhabitable geographies. Attempts to design legal frameworks that recognize climate change as a factor for cross-border movement from such locations have stalled (Wintour 2017; Dempster 2020). This is in part because the more frequent storms, floods, and fires that regularly displace people have not yet led to large-scale international migration. Instead, most refugees tend to move to nearby locations, and only some enter other nations under special, and often only temporary, refugee provisions.

Although the scale of climate-induced cross-border mobility appears small, the U.S. government has already characterized a warming climate as a "threat multiplier" for conflict in the Global South that will lead to major international climate migration. This "greening" of anti-immigrant sentiment and policy (Marzec 2015) expands upon predictions from the 1970s of migrants as "resource degraders" who burden the ecologies of destination countries. Such predictions shaped the emergence of U.S. think tanks like the Federation for American Immigration Reform (FAIR) in 1979. U.S. governmental discourses on climate refugees also rely on the insights of more recent climate scholarship on the role of global warming for ongoing Syrian migration, mainly to Europe. This work has argued that declining water resources and drought led to crop failures and economic decline, which contributed to mass migration to urban areas, political instability, and a civil war, and rendered Syrians the numerically largest refugee population in the world (Todd 2019).

Migration studies scholars, who mainly work in the social sciences, have criticized the discourse on climate refugees for privileging the environment over other drivers of movement (Boas et al. 2019). While the founders of the field acknowledged the role of the natural environment, key migration theories from the twentieth century, such as neoclassical and neo-Marxist migration models, paid little attention to ecological issues (Piguet 2013). Migration studies scholars have only recently begun to develop an understanding of how climate change might intersect with the more widely examined socioeconomic and political drivers of human mobility (Parsons 2021).

As work in migration studies is addressing the climate dimensions of human movement, the growing body of American Studies scholarship that engages with questions of climate change rarely mentions the growth in mobility during the neoliberal racial Capitalocene. Histories of human movement have been central to the transnational reorientation of American Studies since the 1990s,

which has relied on models like the Black Atlantic, *la frontera*, and the Trans-Pacific to describe the connections of U.S. racialized communities to colonialism and U.S. imperialism. But American Studies scholarship on climate change has largely been informed by environmental justice concerns with the uneven impacts of fossil fuel–driven industrial development in the United States and the Global South, concerns which rarely attend to questions of contemporary migration (DiChiro 2016). As Andrew Baldwin and colleagues have argued, climate research more generally has also been less attentive to "the ontological primacy of mobility and movement, the ever-presence of movement in social life, and the insight that mobility is political and thus a fundamental mechanism of social stratification" (2019, 289).

An emerging body of creative work, which I call climate migration fiction (climig-fi), has the potential to move issues of mobility to the forefront of American Studies scholarship on climate change. This work adds a focus on migration to the emphasis on a warming climate that has informed a growing number of Anglophone literary productions, the so-called climate fiction (cli-fi). Coined in 2007, the term denotes the ability of works in the genre to visualize apocalyptic futures as a result of a warming climate, pollution, and the decimation of natural resources in an effort to appeal to readers' emotions and effect cognitive and behavioral changes toward climate change (Ullrich 2015; Schneider-Mayerson 2017). Climate fiction, such as Ian McEwan's *Solar* (2010), Nathaniel Rich's *Odds Against Tomorrow* (2013), Paolo Bacigalupi's *The Windup Girl* (2009) and *The Water Knife* (2015), and Barbara Kingsolver's *Flight Behavior* (2012), focuses on climate change in the United States and United Kingdom, and rarely addresses questions of international migration.

In contrast, the two representative works of climate migration fiction that I explore in this article—Karen Tei Yamashita's *Tropic of Orange* (1997) and Merlinda Bobis's *Locust Girl: A Lovesong* (2015)—centrally engage with issues of displacement to two Anglophone settler colonial nations in the prelude to and aftermath of synergistic ecological and economic catastrophes. The novels focus on cross-border movement to fictionalized versions of the United States and Australia, respectively. *Tropic* represents undocumented migration to a preapocalyptic southwestern United States across the militarized U.S.-Mexico border. *Locust Girl* portrays refugee movement from a war-torn postapocalyptic geography toward the last remaining state-like green oasis, which attempts to curb migration through warfare, anti-immigrant violence, and border policies that fictionalize Australia's system of offshore refugee detention. A comparative reading of the two novels highlights the capacity of settler colonialism, a concept indebted to the work of Australian scholar Patrick Wolfe (1999), to move American Studies scholarship beyond the interest in the transnational aspects of migration to the United States and its imbrication in racialized histories of U.S. empire and nationhood. A reading of the two novels places U.S. migration instead in a more global context that is characterized by the simultaneous and overlapping acceleration of climate change and mobility, and by inadequate

settler colonial state responses to these two major features of the neoliberal racial Capitalocene.

The two novels overlay their portrayals of dystopian futures as logical outcomes of the neoliberal racial Capitalocene with more hopeful, magical-realist imaginaries of multispecies movement. Migrating protagonists cross militarized borders with the assistance of plants and animals that are the products of evolutionary adaptation to degradation caused by settler colonial forms of racial capitalism, and that also act as co-agents with humans in their responses to worsening climate change. This focus on the multispecies nature of migration parallels the concerns of multispecies ethnography on "human entanglement with animals, plants, fungi, and microbes, [that were] once seen as part of the landscape, a food source for humans, as symbols" (Kirksey and Helmreich 201, 545). The concept of "migrant ecologies" draws on this work to describe the simultaneity of human movement and the mobility of "living species, […] pathogens, germs, microbes, and viruses," some "driven by their evolutionary pathways, some others by political reasons and economic deprivation" (Oppermann 2017, 243).

The two novels' extended magical-realist allegories of multispecies migration despite enforced borders move beyond the dominant dystopian plot in cli-fi (Evans 2017, 95), which, as Ursula Heise has argued, rarely shows how "to generate and sustain more functional social structures and healthier natural environments" (2016, 31). As the novels' magical-realist metaphors critique the inadequacy of settler colonial policies toward migration and climate change, they also emphasize the need for combined struggles for migrant rights and environmental mitigation. The rapid acceleration of climate change in the form of historically unprecedented wildfire activity in Australia and the United States in the twenty-first century and the emergence of the largest anti-racist protest movement in the United States' history in 2020 underscore the prescience of the novels' magical-realist metaphors.

Climate Change, Free Trade, and the Militarized U.S.-Mexico Border

Tropic of Orange employs magical realism to imagine multispecies mobility across an enforced U.S.-Mexico border in the neoliberal phase of the racial Capitalocene. The novel contextualizes key events of the 1990s in the longer history of European colonization and imbues them with futuristic overtones through magical realism. Yamashita has said that she intentionally employed the genre in her novel (Murashige 2000). As she writes in the opening unnumbered pages, the plot of *Tropic* is set in a "future [that] is perhaps about the recent past; a past that, even as you imagine it, happens." Framed in cyclical notions of time, *Tropic* presents mutually supportive connections between an unseasonal orange in the Mexican *municipio* of Sinaloa that is "magically" connected to the nearby Tropic of Cancer and a 500-year-old laborer, performance artist, and undocumented migrant called Arcangel who symbolizes the histories of

hemispheric settler colonialism and U.S.-Mexico border migration. The novel explicitly mentions climate change as the cause of the fruit's emergence. The omniscient narrator describes how a singular orange grew on a tree in Mazatlán, Sinaloa, planted to mark the property's location directly at the Tropic of Cancer, in response to the "rains [that] came sooner this year." The narrator continues, "it was an orange that should not have been. It was much too early. Everyone said the weather was changing. The rains came sooner this year. […] Global warming. Yes, that's it" (11).

The novel's representation of mutually supportive mobility between the orange and the mythical border-crosser as forms of adaption to climate change has remained understudied. Critics have predominantly analyzed the novel's critique of neoliberal globalization (e.g., Wallace 2001); its concerns with the effects of free trade on U.S.-Mexico border migration (e.g., Sadowski-Smith 2008); and its focus on ecological (e.g., Rody 2004) or environmental justice themes (e.g., Sze 2000; Crawford 2013). Elizabeth Ammons has linked *Tropic*'s environmental justice emphasis most clearly to its acknowledgement of climate change, arguing that the novel shows how the poor and culturally disenfranchised disproportionately experience the fallout from a warming climate (2010, 151–2).

Tropic's narrative of multispecies mobility is set in motion when a vendor sells the unseasonal orange to the prospective border-crosser Arcangel. The orange bud miraculously attached itself to the nearby Tropic of Cancer for protection from the assault of increasingly erratic weather. This invisible and imaginary line, which separates the temperate from the subtropical hemispheric climate zone, is represented in the image of a thread. As soon as the "bud had broken through the tree's branch," the narrator explains in language that underscores the agential—rather than passive—nature of this act, the bud "*grasp[ed]*" onto a line "finer than the thread of a spider web as its parent, if a line could be a parent" (12, emphasis added).

Tropic speculates that the fruit's agential and adaptive attachment to the Tropic of Cancer expands upon the orange tree's history of colonial displacement to and mutation in the Americas. Spanish and Portuguese explorers brought orange trees to Mexico, South America, and Florida during the colonial phase of the Capitalocene when the unprecedented dispersal of fauna, animals, pathogens, and people significantly altered ecosystems and humans, and contributed to climate change (DeLoughrey 2019, 24). The transportation of organisms across once-disconnected oceans contributed to "a swift, ongoing and radical reorganization of life on Earth without geological precedent," which climate scientists Simon Lewis and Mark Maslin have identified as another potential starting point of the climate crisis (2015, 174). In Brazil, one of the displaced trees mutated into a navel (*citrus sinensis*). The propagation of its grafts in nineteenth-century California spurred the development of the state's citrus industry, which eventually rendered the navel one of the most widely consumed fruit in the world. Because they are seedless and can only be propagated through

grafting cuttings on other varieties of citrus trees, all navel oranges have the same genetic makeup as the fruit from the first mutated Brazilian tree (Rowe 2018).

Just as the original navel emerged through mutation from trees dispersed to the Americas during the colonial phase of the Capitalocene, the genetically identical unseasonal orange's agential attachment to a climate zone in an effort to survive erratic weather patterns represents plant adaptation to worsening climate change during neoliberalism. Arcangel's pronouncements about his 500-year cyclical life span and his northward journey similarly symbolize how U.S.-Mexico border crossings, which date to the settler colonial creation of national borders in the Americas, surged in response to the passage of free trade agreements during the neoliberal phase of the Capitalocene. Arcangel plans to cross the border into Los Angeles to fight SUPERNAFTA in a performative *lucha libre* wrestling match, for which he takes on another of his personas, El Gran Mojado (the "Great Wetback"). In Arcangel's antagonist, the novel fictionalizes the 1994 North American Free Trade Agreement (NAFTA) and its effects on U.S.-Mexico border mobility and Mexico's ecology at the time of *Tropic*'s production, the highpoint of the neoliberal Capitalocene. The import of heavily subsidized, low-priced U.S. agricultural products under the agreement undermined the profitability of Mexican agricultural production and also imperiled subsistence farming. The outsourcing of U.S. manufacturing to cheap labor in Mexican border towns encouraged large numbers of people to move from rural areas to cities, where unregulated industrial and population growth also accelerated pollution and placed greater strain on water and energy resources—all factors that contributed to further cross-border mobility (Cohen et al. 2013, 57).

When Arcangel takes the orange with him on a northbound bus, the fruit assists him in his transformation from laborer to undocumented border-crosser in a symbolic reference to the long historical movement of Mexican citizens to the United States. Arcangel drags the bus with the passengers and orange on board across the U.S.-Mexico boundary in a performative exhibition of his physical strength and his ability to evade manifestations of the historically largest U.S. border enforcement during the 1990s, implemented in anticipation of large-scale human migration in response to free trade. Because the orange remains connected to the climate zone in which it was grown, Arcangel's performative feat brings both immigrants and significant weather changes into the United States. As the climatic patterns of Mazatlán's seasonal wet-dry conditions and larger amounts of precipitation that come with the subtropical climate zone arrive on the U.S. side of the border, the weather in the fictionalized Los Angeles begins to alternate between heavy, sudden monsoon rains and periods of seemingly endless, intense sunshine.

Tropic's metaphor of multispecies mobility points to the future of Mexican migration, the free trade agreement, and climate change in California. The novel's concluding wrestling match ends undecided: SUPERNAFTA implodes after sending a missile launcher into Arcangel's human heart. His death anticipates

the virtual cessation of large-scale Mexican undocumented migration after the 2007 U.S. recession, when more Mexicans began to return home than arrived in the United States. SUPERNAFTA's demise, in turn, predicts the growing disenchantment with neoliberalism and the dissolution of NAFTA in 2020 when it was replaced by the United States–Mexico–Canada Agreement (USMCA). As it "quite literally enacts development's role in climate change by burning to a cinder" (Ammons 2010, 154), SUPERNAFTA's fiery implosion can also be read as a reference to the acceleration of climate change during the more than two decades after *Tropic*'s publication. The allegory of a northward-moving orange-climate zone anticipated California's worsening drought, more frequent heatwaves, and historical levels of wildfire activity during the 2000s. The years 2020 and 2021, in particular, witnessed the hottest summers on record and the eruption of megafires of such an unprecedented magnitude and intensity that they were described as apocalyptic. In conjunction with the oppressive heat, the smoke from the fires created the worst air quality on the planet.

Tropic represents systemic racism as a colluding force in synergistic catastrophes that exacerbate the uneven distribution of economic benefits and ecological risks in the neoliberal phase of the racial Capitalocene. As a parallel to the novel's apocalyptic wrestling match that marks an end to the symbols of neoliberalism and undocumented migration, *Tropic* depicts state and federal raids on the city's homeless and *indocumentados* who establish a new kind of community in vehicles abandoned along a gridlocked freeway. This community transforms cars into homes, vegetable gardens, and the backdrop for TV shows on a now deserted highway, thus refashioning tools of mobility that cause significant ecological damage (Ammons 2010; Thompson 2017). The catastrophic destruction of this community references the violent reactions to the 1992 L.A. uprisings in response to the acquittal of white police officers after their violent beating of Rodney King, an African American man, following a high-speed freeway chase. The homeless, poor, and immigrant communities in *Tropic* repurpose cars—the main engines of carbon consumption in a place where it most often occurs—and the L.A. uprising underscored the connection of cars and highways to environmental racism and racialized state violence. Highways tend to be built in and at the expense of communities of color, further deepening housing segregation and causing disproportionate harm to the health of residents. African American drivers are often racially profiled as suspected "criminals" and stopped for searches that lead to injury, incarceration, or death (Thompson 2017, 93).

As it points to the overlapping catastrophes of systemic racism, neoliberal capitalism, and climate change, *Tropic*'s magical-realist metaphor of multispecies mobility also embeds hope in the novel's otherwise apocalyptic ending. While SUPERNAFTA is dead at the end of the wrestling match, Arcangel may not be. The unseasonal orange, which assisted the cross-border movement of undocumented migrants and climate as a challenge to SUPERNAFTA, plays an equally central role in Arcangel's potential rebirth. When the dying Arcangel

eats the orange, this act severs the fruit's link to the Tropic of Cancer. Arcangel is buried in the U.S.-Mexico borderlands (where north and south have merged) under another orange tree "at the very edge of the sun's shadow" (269) from which, the narrator tells us, another line could grow. The symbolism of a reborn border-crosser who is connected to climate change through a metaphorically regrown line can be read as anticipating the continuation of U.S.-Mexico cross-border mobility in the context of a warming climate. Large-scale U.S.-Mexico border crossings by migrants from the so-called "dry corridor" of Honduras, Guatemala, and El Salvador have surged since 2014, driven by economic deterioration, political decline, and worsening drought conditions that have led to repeated crop failures and food shortages in the three countries. This migration has not proceeded in the form of undocumented border crossings, but as refugee movement where unaccompanied children and families from Central America predominantly applied for political asylum after their arrival in the United States until this practice ended in 2020 under the pretext of public health mitigation measures during a pandemic. Just as a reborn El Gran Mojado points to ongoing Central American refugee movement in spite of the militarized U.S.-Mexico border, the 2020 anti-racist demonstrations following the violent death of George Floyd can be seen as a successor of the 1992 Rodney King uprising, which is fictionalized in *Tropic*.

The novel's concluding magical-realist prediction of resurging migration and revived struggles for migrant justice, and their connections to climate change and the nonhuman world, are symbolized in the imagery of disappearing borders after the orange is severed from the thread. Another of the novel's immigrant protagonists holds the now separated ends of the wispy line of the Tropic of Cancer, wondering: "What are these goddamn lines anyway? […] Let the lines […] go. Go figure. Embrace" (270). Together with the metaphor of SUPERNAFTA's destruction, the image of dissolving borders points to a post-neoliberal future in which immigration reform and migrant rights struggles need to be linked to demands for ecological, economic, and racial equality.

Fossil Capitalism, Wildfires, and Refugee Detention Zones

Published nearly two decades after Yamashita's novel, Merlinda Bobis's *Locust Girl: A Lovesong* (2015) continues *Tropic*'s preoccupation with representing multispecies mobility to a fictionalized settler colonial nation with a long history of nativism that is experiencing historical levels of drought and wildfire activity. A reading of Bobis's novel reorients the prevailing Americanist interest in the transnational dimensions of U.S.-Mexico border mobility for U.S. empire and nation-building to a more globalized emphasis on the connections between migration, neoliberalism, and climate change in the Americas and its similarities to other forms of global movement. Even though *Locust Girl* won Australia's Christina Stead Prize for fiction and its Filipina Australian author has already produced a significant oeuvre, the novel has not received much critical

attention. The existing scholarship reads *Locust Girl* as an allegory, fantasy, or futuristic fable of Australian refugee policies (Herrero 2017; Zong 2020).

The novel metaphorically represents contemporary refugee movement from places rendered uninhabitable by military conflict and ecological destruction to equally unsustainable lives in refugee camps, located in a desertified and uninhabitable geography. More clearly than *Tropic*, which references U.S. border enforcement in response to free trade, *Locust Girl* here points to militarization as the single largest cause of environmental destruction (McClintock n.d.). The novel presents a post-neoliberal dystopian future when nation-states and free trade have disappeared and the effects of climate change have become main drivers of mobility exacerbating the economic and ecological devastation caused by military conflict. Bobis has said that she wanted to create "an allegorical place" with "no specific clue to the setting" "so the story can be *owned* by anybody" (Bobis 2015b, original italics). While this allegorical place-making can point to a multiplicity of global migrations, the ecological conditions and policies of the novel's only remaining state-like entity, called the "Five Kingdoms," closely resemble those of Australia. As the world's largest coal-exporting country, the country has been plagued by frequent weather events and the worst drought in living memory since the 2010s (Dewan 2018).

As the victor of multiple wars, the Kingdoms fictionalized in the novel hoard the world's few remaining oil, water, and food resources. Even though some refugees were resettled there, a much larger number of others, like the protagonist Amedea, live in camps in desertified surroundings that are incapable of producing food or providing any economic opportunities. The Kingdoms' mined and heavily guarded border prevents refugees from entering and accessing the resources of the "last green home on earth" (101). These fictionalized border policies are reminiscent of the Australian offshore detention regime that was implemented in 2002 for refugees who arrived by sea following the U.S. wars in Afghanistan and Iraq, which contributed to economic, political, and climate breakdowns in these nations. The detention centers were built on the islands of Nauru and Manus, Papua New Guinea as "return oriented environments" to prevent migrants from entering Australia by providing them with only two options—settling on the islands or going back to their places of origin (Liljas 2018). To gain public support for its border policies, the Australian government linked West Asian migrants to the potential of terrorist threats by stoking fears of attacks during a period marked by the tragedy of 9/11.

In the novel, the refugees' confinement to camps in a desertified ecology is similarly justified through racialized ideologies of group differences that are designed to prevent border crossings into the Kingdoms. This propaganda showcases the Kingdoms' efforts to preserve the remaining resources through austerity, while attributing irresponsible levels of ecological consumption to the refugees. The Kingdoms' preservationist ideology bolsters their claims that they "purified the earth" by returning to preindustrial conditions and limiting the

consumption of food through rationing. Inhabitants of the camps, in contrast, are deemed "wasters" who need to be "cared for and […] protected from themselves" (104) because they "consumed and dried up nature with their profligate ways long ago" and are "always plotting to waste more, or, worse, to steal what the 'carers' worked so hard to preserve" (121). The Kingdoms' ideology of "caring" for the otherwise excluded refugees literalizes the anti-immigrant "lifeboat ethics" (Hardin 1974) of 1970s preservationist movements, which rejected calls for the more equitable sharing of resources. The Kingdoms' discourse of "caring" also expands technologies of racialization beyond the focus on racial difference or geographical origin that characterizes similar ideologies in present-day Australia (and in the preapocalyptic United States fictionalized in Yamashita's novel) to include an emphasis on levels of ecological consumption. A similar shift in attitudes toward refugees is under way in Australia. The country's harsh immigration policies racialized West Asian refugees through association with terrorism in ways that perpetuated historical forms of racialization based on group identity, such as Australia's nineteenth-century barring of Chinese laborers and its "White Australia" immigration laws, eliminated in the 1975 Racial Discrimination Act. More recent discussions about the cost of refugee offshore detention have also associated migration with a "green" xenophobic rhetoric similar to that spouted by U.S. anti-immigrant organizations like the Federation for American Immigration Reform (FAIR). A majority of Australians favor lower levels of migration, with many arguing that the enormous resources spent on offshore detention should instead be directed toward improving the country's infrastructure and environment (Lowenstein 2018).

Besides deploying racialized ideologies of group differences based on ecological consumption, the Kingdoms also regularly bomb the camps to prevent residents from crossing the border. Similar to *Tropic*'s emphasis on continued migration despite a militarized U.S.-Mexico border, Bobis's novel deploys the magical-realist trope of mutually beneficial multispecies mobility to imagine refugees' success in entering the Kingdoms despite its enforced border and militarized violence. Bobis has acknowledged that her aesthetic is "informed by my Filipino traditions of magical realism and the uncanny," which she uses "as a means to create metaphor and allegory that engender political critique and subversion" as well as "literary delight and magic" (2015b). The novel's protagonist Amedea is the sole survivor of her camp's bombing by the Kingdoms, which "put out the stars" and created an ecological catastrophe that contributed to the further desertification of the area. The bombings had buried Amedea deep into the sand for ten years. She magically awakens as a nine-year-old girl in a nineteen-year-old body with one specimen of the migratory species of locust (*Locusta migratoria*), prevalent in Australia, implanted in her forehead. The novel speculates that in the context of widespread ecological devastation following the bombing, locusts began to feed on the refugees' remains, thus inverting the ways in which starving humans had earlier sustained themselves

by eating this species of short-horned grasshopper, considered a delicacy in parts of Asia and Africa. One locust buried itself deep into Amedea's forehead, rendering her the magical-realist "Locust Girl" of the novel's title. As Amedea explains, locusts "ate grains as we did. Then grains dried up and they ate sand. Then we ate them and sand. Then they ate their eaters. [One] nibbled its way under my forehead and there slept my ten-year sleep" (8–9).

After attaching itself to Amedea, the locust lends its communicative and adaptive capacities to her voyage to the border in ways that ensure their mutual survival. On her way to the Kingdoms, Amedea joins another refugee camp where she receives the Kingdoms' "caring" distribution of rations, which barely sustain the refugees and make them forget their preapocalyptic past. When the rations suddenly stop, the resulting food insecurity exacerbates the ecological devastation caused by prior military conflict and bombings, and accelerates refugees' migration to the Kingdoms' border. By creating an allegorical geography in which armed conflict and racialized state-sanctioned violence exacerbate other interrelated socioeconomic, political, and ecological drivers of migration, the novel creates a globalized perspective on migration and climate. This lens references not only the complex conditions that drive refugees to Australia, but also invites comparative inquiries into the circumstances that propel Central American U.S.-Mexico border mobility and West Asian displacement to Europe.

In the novel, the locust uses its ability for phenotypic plasticity to act in sync with Amedea during their joint trip to the border. Short-horned grasshoppers have developed the capacity to change their physiology, color, brain, and body size in response to temperamental and harsh weather conditions, such as those typical of Australia. They form large, coordinated, and fast-moving swarms with other locusts that can traverse long geographical distances and quickly destroy large swaths of agriculture (Baskar 2020). In 2020, locusts destroyed large areas of staple crops like teff, wheat, and sorghum in areas of East Africa, Southwest Asia, and the Middle East (Irfan and Kirby 2020). The novel's fictionalized locust activates its evolutionary trait for phenotypic plasticity to act as a compass for Amedea, a being of another species. It helps Amedea locate life-sustaining water and the route to the Kingdoms' food, thus ensuring their joint survival and mobility.

Through its stridulation, which the novel calls "singing," the locust also assists Amedea in memorizing and remembering other refugees' stories about their preapocalyptic displacement since she lost her own memories in her camp's bombing. These recollections highlight ecological and economic inequities as the cause for apocalyptic wars and converging socioeconomic and ecological disasters, and also shape the conviction that refugees have the same right to the resources hoarded in the Kingdoms as its residents. Merging the migratory and adaptive abilities of the animal with her own, Locust Girl becomes the embodiment of this collective refugee memory, which has the potential to "stop the Five Kingdoms from burying our lives, from burying us alive" (100).

Through her interactions with the locust, Amedea gradually transforms into a transcorporeal entity that literalizes the material-ecocritical emphasis on the constancy of material interchanges between humans, animals, and the environment (Alaimo 2010).

After the locust is burned from Locust Girl's forehead following the bombing of yet another refugee camp, which prompts her to remember the destruction of her own village, the songs of the past that she had memorized with the animal's help live on "inside her skull" (122). Her voicing of preapocalyptic and migratory songs shows that neither the Kingdoms' propaganda of racialized ecological consumption, their memory-altering food rations, their bombings, nor their militarized border can prevent cross-border refugee movement and the challenges it poses to the exclusionary hoarding of resources.

Once she arrives in the Kingdoms, Locust Girl stands trial for her unauthorized singing and border crossing. Her spontaneous implosion after her conviction metaphorically references the intensity of Australian bushfires and the responses of some refugees to their indefinite offshore detention with forms of self-harm that include self-immolation (Herrero 2017, 951; Liljas 2018; Ramzey 2016). Just as Yamashita's magical-realist metaphor of an imploding SUPERNAFTA pointed to California's deepening drought conditions and more frequent megafires, *Locust Girl*'s magical-realist implosion anticipates Australia's 2019–2020 bushfire season that was unprecedented in length, intensity, and geographical scale. The worst fires in living memory caused the largest devastation of ecological communities in Australian history and threatened the survival of species and ecosystems that were already under immense stress (Wintle, Legge, and Woinarski 2020). The symbolic references to drought and wildfires in the two novels underscore that, as Umair Haque has argued, the effects of climate change in the United States and Australia will likely change portions of these countries into a largely deserted "Fire Belt" (2020).

But *Locust Girl*'s apocalyptic ending also contains magical-realist seeds of hope: following her combustion, the protagonist transforms into a posthuman entity (Herrero 2017, 958) that can still "see when [she is] no more" (Bobis 174). Bobis has suggested that her protagonist chooses self-sacrifice to accommodate all the refugee voices inside her in order "to show everyone that regardless of borders, we are all in this together—in this love-and-plague or redemption-destruction of our world, or what we have reduced it to" (2015b). As a "locust with the heart and voice of a girl" (171), Locust Girl has merged the evolutionary and migratory abilities of animals with those of refugees in their mutual adaptation to the effects of desertification and food insecurity, to which the Kingdoms respond with bombings, a militarized border, and racialized forms of exclusion. Like *Tropic*'s magical-realist protagonist Arcangel, at the end of the novel Locust Girl is associated with the possibility of rebirth. As Bobis has said, she is "both phoenix and female Christ," signaling that "we have a capacity for the plague and destruction that we do to the environment and to each other, but we also have the capacity for love and the capacity to redeem ourselves and our

environment" (2015b). This reborn posthuman migrant entity symbolically points to the need for collective struggles that combine demands for refugee justice with efforts to combat climate change.

Conclusion

Through their use of magical realism with its dual focus on disaster and hope, the two cli-mig-fi novels discussed in this article move beyond the predominant dystopian emphasis in cli-fi, which often relies on the genre of science fiction. *Tropic* and *Locust Girl* point to more racially inclusive and economically and ecologically just futures as alternatives to the neoliberal phase of the racial Capitalocene, which they imagine as ending or having come to an end, as figured in the magical-realist images of reborn multispecies migrant collectivities with adaptive capacities for inclusive and restorative social justice struggles.

The novels characterize symbiotic multispecies mobility in spite of nativist policies as a hopeful adaptive response to converging ecological, political, and economic disasters produced by histories of settler colonialism, fossil fuel-intensive neoliberal capitalism, and militarized border enforcement in the United States and Australia. *Tropic* focuses on mutually beneficial links between human and plant mobility as an unseasonal orange, produced by climate change, assists in a migrant protagonist's rebirth that symbolizes ongoing migration and its links to struggles for racial, ecological, and economic justice. *Locust Girl* imagines the transformation of a migrating human-animal figure into the posthuman embodiment of collective refugee memory that enables struggles for the more equal distribution of economic and ecological resources. The two novels' interlinked stories of animal, plant, and human mobility in response to colliding human-inflicted crises call on migration studies to advocate equally for migrant rights and for the mitigation of climate change as the field turns to inquiries into the climate dimensions of human mobility. A reading of the two novels also suggests the need for more globalized lenses on U.S. migration and its connection to climate that follows the expansion of Americanist inquiries into expressions of climate change in both the United States and the Global South.

The future-oriented focus on multispecies mobility in the two novels points to other, nonfictional instances of hope for a more equitable future without borders that divide the well-off climate haves from the impoverished climate have-nots, while recognizing human connections to the nonhuman world. Even as widespread climate change denial in the United States and Australia (Dewan 2018) contributes to the diversion of resources away from ecological mitigation to the enforcement of borders, a warming climate is already placing the material embodiments of such unjust migration policies under significant stress. While megafires and drought are threatening to render at least parts of the country uninhabitable, the islands on which Australia's offshore detention centers were built—as well as parts of its own coastline—are in danger of disappearing.

Similarly, climate change will not just drive future displacement from the U.S. Southwest border region, but extreme weather events associated with warming

temperatures have already destroyed portions of the U.S.-Mexico border wall, highlighting that these structures will not survive in their intended form in a world altered by climate change. In the summer of 2021, intense flooding from record-setting monsoon rains in southern Arizona ripped nine border wall gates from their steel hinges, which had just been finished a year earlier (Loya 2021). In 2020, monsoon storms damaged portions of a thirty-foot concrete-filled wall in southern Arizona and high winds knocked over sections of a wall in El Paso, Texas (Prendergast 2020) as well as in Calexico, California, where thirty-foot-high panels were blown to the Mexican side of the border (Guardian Staff 2020).

In 2011, the force of heavy rains not only knocked over a 40-foot stretch of mesh Arizona-Sonora border fence, but turned it into a waterfall (McCombs 2011). The transformation of this structure into a device that better served the border ecosystem can be understood through Jane Bennett's notion of "vibrant matter." Her concept underscores the fact that "things, too, are vital players in the world" (2010, 4) by emphasizing the agential and creative capacity of inorganic matter. As Bennett puts it, "even the humblest forms of matter and energy have the potential for self-organization" (2010, 7, 9). The extended metaphors of multispecies mobility developed in *Tropic* and *Locust Girl* acknowledge that human life and mobility can only thrive if the evolutionary and adaptive abilities of the nonhuman world—as well as the capacities of nonliving matter for change—are taken into account. Migrant-rights struggles and calls for legal frameworks that acknowledge the climate dimensions of migration will thus need to incorporate demands for measures that mitigate climate change on a scale commensurate with the dimensions of this ongoing transformation.

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Another Storm Is Coming

Judy Natal

The land and water between New Orleans and Houston, commonly referred to as the Energy Coast, literally seems to float as a kind of terra infirma that is liquid and fluidly unstable; a watery mirage drawn by human intervention and land use that persists long after the storm. The land and water uniquely mirror each other, both in human folly as well as human achievement. It has been equally devastated by hurricanes, flooding, loss of wetlands and sea level rise, and the ever-present reality of disastrous oil spills that devastate animals, ecosystems and humanity equally.

Commemorating the 10th anniversary of Hurricane Katrina in the Gulf Coasts of Louisiana and Texas, Judy Natal's *Another Storm is Coming* is a commission by the Center for Energy & Environmental Research in the Human Sciences (CENHS) at Rice University, in collaboration with FotoFest International Biennial in Houston, Texas.

The cover photograph depicts the Galveston seawall built after the Great 1900 Hurricane that smashed directly into Galveston, Texas. This storm was the deadliest hurricane in the U.S. which left between 6,000 to 12,000 fatalities and leveled the town. African American men were forcibly recruited at gunpoint to load the dead onto barges and burn the bodies. The song that commemorates this event, "Wasn't that a Mighty Storm," began as a spiritual in the Black church by Sin-Killer Griffin, and was first recorded in 1934 at Darrington Prison in Sandy Point, Texas. Natal used the many iterations of this spiritual as the soundtrack for her video *Another Storm is Coming: Storm Redux* which consists of oral histories of individuals who lived through the recurring cycles of hurricanes along the Gulf Coast that include Hurricane Audrey (1957) up to present day Hurricanes Rita

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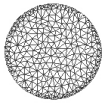
(2005), Katrina (2005), and Ike (2008). Natal pays homage to the Galveston seawall, using the camera's exquisite photographic eye to draw attention to the age of the wall and its poor condition.

The title phrase "Another Storm is Coming" comes from a piece of graffiti that Natal stumbled upon at the start of her project at the abandoned amusement park that was blown to shreds by Hurricane Katrina on the edge of Lake Pontchartrain in New Orleans. Instantly recognizing the prophecy, the poetry and the truth the phrase held, Natal used this as a fitting title for her project. With each cycle of hurricane that hits the Gulf Coast, Natal relives the stories she recorded of repetitive cycles of loss and devastation, and is haunted by the tragic stories of the resilient people she met whose lives are drastically redrawn again and again to this day. The Gulf Coast waters continue to dramatically warm due to the climate crisis. There will be another storm.



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Judy Natal, *Another Storm is Coming*