

# INTIMATE ATMOSPHERES

## Queer Theory in a Time of Extinctions

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### Prologue: The Mosquito and the Settler

Perhaps queer theory has always been a theory of extinctions. Leo Bersani's 1987 essay "Is the Rectum a Grave?" opens with an epigraph from a BBC television interview that casts the gay male body as the parasite at the heart of the AIDS epidemic. In the epigraph, the virologist Opendra Narayan claims that "a man comes along and goes from anus to anus and in a single night will act as a mosquito transferring infected cells on his penis. When this is practiced for a year, with a man having three thousand sexual intercourses, one can readily understand this massive epidemic that is upon us."<sup>1</sup> Narayan imagines "gay plague" through a vision of swarming parasites fucking at an entomological timescale, outpacing the orgasmic rhythms of the human. As such, the homosexual becomes viral and thus both alien and contagious, invoking tropes of insatiable feminine desire and the machinic rapist. Yet in examining gay publics' refusal to be named sexual parasites Bersani argues that conflating sex with liberation forecloses the risk to which sex opens the subject. In response, Bersani suggests that "if the rectum is the grave in which the masculine ideal . . . of proud subjectivity is buried, then it should be celebrated for its very potential for death. Tragically, AIDS has literalized that potential as the certainty of biological death, and has therefore reinforced the heterosexual association of anal sex with a self-annihilation. . . . It may, finally, be in the gay man's rectum that he demolishes his own perhaps otherwise uncontrollable identification with the murderous judgment against him."<sup>2</sup>

From this line of argument, a number of commentators identify Bersani

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as father of a tradition of queer negativity, configured as antirelational, anti-social, death-driven, or masochistic. This position has been consolidated in recent debates over reproductive futurism, where Lee Edelman's criticism of the contemporary fetishism of the Child in his book *No Future* appears as the latest generation of Bersani's negative ethical discourse.<sup>3</sup> Yet given that Edelman stakes radical politics on a refusal of both compulsory reproduction and futurity itself, there is another line of thinking in Bersani's essay that might complicate the analogy of inheritance. Bersani writes of gay men who seem sexually "radical" by night but who thrive in bourgeois and racist social positions by day; they have "no problem being gay slumlords" who evict "black families unable to pay the rents necessary to gentrify that neighborhood." This is an iconic rendering of the economic parasite, the slumlord, usurer, or tribute collector, whose occupation of a host ecology extracts and disposes. I cannot help but read this Bersani as a theorist of *reproduction* as well as death, as a witness to "human beings' extraordinary willingness to kill" others even when the reproduction of the self is staked as "ethical ideal."<sup>4</sup> Bersani's gentrifying parasite is thus a variant of Frantz Fanon's colonial settler, who manufactures both a racialized myth of freedom and a material life-world of surplus—"wonderful garbage, undreamed-of leftovers"—the disposability of which parallels the disposability of the colonized, displaced to live "hungry" in a "world with no space," that is, to be rendered parasite in turn, associated with "the sting of the native quarter, of breeding swarms." For Fanon, "a hostile, ungovernable, and fundamentally rebellious Nature is in fact synonymous with the colonies and the bush, the mosquitoes, the natives, and disease. Colonization has succeeded once this untamed nature has been brought under control."<sup>5</sup> In the realization of "freedom," the settler renders the colonized displaced, disposable, pestilent.

Thinking beyond the Freudian formulation of a traumatic encounter with objects that moves the subject into a narcissistic fortress of identity, Bersani hopes to dissolve the subject by theorizing an abstract space of "death" or "the nonhuman." But for those colonized, made into waste, and resurrected as parasite, there is no hope for transcendence. Fanon argues that, in expanding and mastering the world, the settler enacts a racial ecology that both feeds parasitically on the colonized and reproduces the dependent conditions that justify their constant displacement. From here, I suggest reading Bersani's references to the mosquito and the settler as meditations on the reproductive force of the living, a force that may casually extinguish life in the name of a mythic freedom.

### Lateral Reproductions

Three decades after the onset of the AIDS crisis, the climate crisis presses queer theory for a planetary account of reproduction. The present essay attempts to recuperate, by tracing reproductive figures like the mosquito and the settler through contemporary climate discourses, an ecological dimension of queer critique. The persistent opposition of life and death, relation and negation in queer critical discourses is a symptom of a field's attempt to articulate an antihumanist ethic in the absence of a materialist account of ecological space and interspecies relation. Such an account is especially pressing given that any vision of freedom in today's global North—including visions of freedom *both* staked on the reproduction of the nuclear family *and* on the refusal of it—are imbricated in racialized forms of carbon privilege that disperse social and biological precarity.<sup>6</sup> Thus Fanon's emphasis on colonialism's spatial reproduction of racial disposability must be rethought in relation to today's carbon-fueled exterminations of peoples, species, and entire ways of life.

In this essay I explore relations between reproduction and extinction through a specific environmental crisis: fears of mosquito-borne diseases in a warming atmosphere. To understand this arena of crisis—in which carbon wastes trap solar heat, driving the transborder migration of insects that feed on and reproduce through human bodies—it is necessary to reconfigure notions of intimacy and reproduction across the planet: minerals, mosquitoes, settlers, gases, solar rays, and other bodies share in reproductive metabolisms crossing scales, species, and systems, invigorating “performances of adjustment that make a shared atmosphere something palpable.”<sup>7</sup> *Atmosphere*, then, has a double valence: it signals both the interspecies intimacy structured by geophysical forces of the earth and the ambient senses of crisis, withering, and extermination that intensify as the underside of neoliberal freedom. Atmospheric intimacies signal that the reproductive forces and waste effects of carbon intensify contradictions between precarity and freedom, reforming the political through a model of action distinct from the agency of the human sovereign. Drawing on Lauren Berlant's conception of a “lateral” biopolitics in which subjects manage “the difficulty of reproducing contemporary life” in “a mode of coasting,” I question both the xenophobic rendering of the environmental parasite in climate discourse and the sovereignty of the anti-relational stance against reproduction in queer theory.<sup>8</sup> I argue instead that neoliberal subjects (including queer subjects) are engulfed by processes linking the reproduction of the ordinary and the extermination of various life-forms and forms of life.<sup>9</sup> Carbon-fueled forms of neoliberal freedom at once unleash waste and pre-

carity on far-flung bodies while expanding the potential of others, reformulating racialized divisions between surplus and waste.<sup>10</sup>

Given that the reproduction of late-carbon liberalism, its “parasitic” relation to the earth, exterminates through its very processes of reproduction, it is no surprise that today visions of the future human, including the post-HIV queer subject as human, often evoke crisis and the imagery of detritus and death. While his polemic in *No Future* illuminates how futurity is wagered on normalizing strategies, Edelman’s refusal of those strategies as constituting “life” and his resulting embrace of “death” narrows the richness and interrelation of “life” and “death” that we encounter in the contemporary biological sciences, including climate science. We might thus benefit from thinking more broadly about reproduction than Edelman does, recognizing that bodies and atmospheres reproduce through complex forms of socio-ecological entanglement. In what ways, we may query, is an anthropomorphic and gendered conception of reproduction complicit with masking the violence of neoliberal systems for conducting life? Ecological thought refuses an “outside” to reproduction, a sovereign space of ethical hygiene from which to queer.<sup>11</sup> Liberalism thrives on masking violence through ruses of the individual’s transcendence, the refusal of the “promiscuous” interspecies connections that make bodies, according to Donna Haraway, “constitutively a crowd.”<sup>12</sup> Within queer studies, Tim Dean’s unique study *Unlimited Intimacy* resists this tendency by offering an ecology of gay social reproduction linking bodies, species, technologies, and social spaces.<sup>13</sup> Dean’s examination of “bug chasers”—men who seek HIV infection, in the process creating networks of kin filiated through viral transmission—shows that social and biological reproduction can be deeply intertwined via forms of interspecies entanglement. In this case, men describe contracting the virus through metaphors of viral impregnation, digestion, and kinship. From another entry point, scholars working at the intersections of trans studies and science studies document biology’s queer reproductions, noting that intersex embodiments and homosexuality are completely mundane evolutionary events sustaining species and life systems.<sup>14</sup> Not all publics denominated as “queer” engage reproduction in such explicit terms. But in the production of waste and the consumption of goods, queer publics are deeply linked in ecosocial processes of reproduction.

Karl Marx once explained that capitalism was alienated from “nature” by using the digestive metaphor of an overactive metabolism, an extractive potential that could outpace the soil’s normative reproductive rhythms. Today it is alternatively said that life itself poses reproductive constraints on the form of capital.<sup>15</sup> Contemporary visions of ecological waste and scarcity as “limits to capital” reflect that ecocidal violence is more often narrated as a crisis of overconsumption than

as a problem of enclosure or of racialized divisions of carbon privilege and waste effects. Environmentalist views of capitalism as frenetic overconsumption link the unequal processes of surplus extraction to the aesthetics of “wasteful” bodies expanding uncontrollably in space. This development takes on a loaded moral and ideological character when metaphors link species, nations, races, populations, or subcultures to the opprobrium of the fat or unconstrained body, an opprobrium that outside environmental debates is elsewhere visited on immigrants or the recipients of social welfare who are racialized as leeches on the social body. This is one example of how neoliberal debates over environmental crisis are saturated with analogies of the parasite: they name how some bodies are made to expand and crowd out the reproductive futures of others.

Bersani outlines two forms of parasitic replication we might follow laterally against Edelman’s conception of sovereign reproduction. In the image of the mosquito, we find the contagious virus associated with speed, engulfment, and mutation, which crosses bodies whose own temporalities may be interrupted or radically shortened by the transformations of contact. Alternatively, the settler commits extractive displacement, occupying a host ecology to appropriate energy and matter, even if, Scrooge-like, it collects only to deprive others.<sup>16</sup> Parasites produce curious archives—sometimes residing in bodies rather than texts, often displaced or disposed from sites of contact. These ideologically loaded figures pose some ambivalent and contradictory logics, ones that increasingly render neoliberal life queer not through trumpeted expansions of formal human rights or homonormative kinship with children but through the *lateral connections between distant bodies that appear violent as an inherent feature of their shared existence*.<sup>17</sup> I am completely convinced by left ecological injunctions to battle against capitalism’s rendering of high-energy-input consumption as freedom and to refuse the unjust international divisions of life and the dumping of wastes that racialize the effects of climate change. That said, I am attuned to the genocidal, fascistic, and xenophobic logics converging in the idea of the parasitic environmental body. In queer theory, I seek a critical discourse that inquires more deeply into the micropolitics of reproduction and extinction, where racial divisions of climate emerge in the intimate scales of contact between human social forms and ecologies of production and waste. If, in the ecological metaphors of literary criticism described by Valerie Rohy, “homosexuality” has long appeared “as a sort of parasite, feeding off of the failure of normative sexuality,” a queer-theoretical response to late-carbon liberalism might involve thinking reproduction as an interspecies entry point into entangled forms of violence—forms often distorted by moralizing and universalizing figures of the parasite.<sup>18</sup>

### To Kill Softly

Media representations of climate change struggle to grasp the enormity of killing. The planetary scale of carbon amplification, its association with expanding bodies and displaced destruction, coincides with a spectacular trauma of extinction: ecologically violent uses of land, chemicals, and carbon are accelerating the sixth major extinction event in earth's history. This "event" (if we can stomach the cool rendering of mass death as a singularity) will commit 18–35 percent of extant animal and plant species to extinction by 2050.<sup>19</sup> Perhaps one million species will disappear, and countless billions of living bodies will be denied the conditions of life or prematurely killed. Climate-related disasters are accelerating threats to already precarious lifeways: Inuit nations face melting Arctic ice; Maldivians and other islanders lose ground to rising seas; vulnerabilities to infectious disease grow with shrinking water supplies; the world's agrarian poor face crop diseases, drought, desertification, and food price instability; and all countries face increased weather disasters. The large number of people who depend on subsistence agriculture are already living outside the ecological "boundary parameters" that enabled the rise of modern human societies.<sup>20</sup> In this sense, we are already living the future of extinction. The planetary *present*—not some speculative future—exhibits a staggering scale of "reproductive failure," human and nonhuman.

Yet small bodies and intimate environments often get lost in big atmospheric narratives. Since its seventeenth-century origins in English, the term *atmosphere* has signaled the fluid medium of above-ground relations, its contradictory figuration as a space of geology and life, and a background that forges exchange between social and physical processes. Atmospheres can surround big and small bodies, and can shift as bodies entangle and disentangle spatially. With industrial pollution, lower atmospheric space abounds with plumes of toxic gases (methane, carbon dioxide, and carbon monoxide) as well as noncarbon by-products (e.g., nitrous oxide and ozone) that unpredictably concentrate in our bodies as we encounter a busy street, a power plant, or a factory farm. In addition to rising to heights where they can trap solar heat, these gases fix in soil and water, returning unpredictable flows of toxicity to the lithosphere where plants grow. These toxicities—often concentrated in poor and minority communities—contribute to childhood asthma, lung disease, and the spread of various cancers.

In an account of living with toxic sensitivity to airborne heavy metals, Mel Chen describes navigating and transforming unpredictable atmospheres and their conjoined affective and spatial entanglements. The improvisational strategies for prophylaxis—such as donning a particulate mask to avoid exposure to vehicle

emissions on a busy street—inevitably conjure public surveillance. “Suited up in both racial skin and chemical mask,” writes Chen, “I am perceived as a walking symbol of contagious disease like SARS, and am often met with some form of repulsion.”<sup>21</sup> Chen’s account points to how the materiality of everyday air pollution subtly intertwines with the materiality of race. Race, according to Renisa Mawani, might itself be understood as an atmospheric rather than a “social construction.” Drawing on Fanon’s accounts of race and atmosphere, Mawani explores “race as an affective movement, a force rather than a thing, a current that reconstitutes and reassembles itself in response to its own internal rhythms and to changing social and political conditions.”<sup>22</sup> If race is not simply a phenotypic characteristic but an ecology of affective movement and exchange, the effects of carbon pollution—disability, disease, forced migration, and sometimes death—can catalyze the emergence of xenophobic fears about economic and ecological interconnection.

Racialized climate reporting draws affective power from senses of pervasive and inescapable environmental pollution. Michael Ziser and Julie Sze detail the persistent geopolitical and racial fears driving US responses to climate change. Contrasting the sentimental domestication of the (white) polar bear in US media with persistent fears of the cross-Pacific migration of Chinese air pollution, Ziser and Sze argue that climate discourses conjure earlier racial panics about “yellow peril” and obscure primary US responsibility for contemporary and historical emissions.<sup>23</sup> While such reporting contributes to an atmosphere of fear and crisis, the everyday physicality of climate processes inscribes fear at the site of the skin. Atmosphere names a space of unpredictable touching, attractions, and subtle violences—a space at once geophysical and affective, informed by yet exploding representation, a space where the violences of late-carbon liberalism subtly reform racialized sensoria through shifting scales of interface.

To explore this further I suggest that we think with mosquitoes, mosquitoes both figural and real, mosquitoes that bite, migrate, and feed on various bodies. These are parasites like those in Narayan’s vision of gay plague; they are also strange kin in a warming atmosphere. Mosquitoes excite colonial tropes in environmental discourse—from anthropophagic consumption (feeding on humans) to visions of tropical contagion.<sup>24</sup> In the vampiric image of female mosquitoes’ blood feasts—required for their sexual reproduction—there is a counterpoint to the “carnivorous virility” that Carla Freccero attributes to liberal humanist visions of the subject. A small body becomes a predator of the human, forcing strange ecologies of attraction and feeling even as it poses risks of debility and death.<sup>25</sup>

But the parasite turns out to be feeding on a parasite. Alongside the mosquito, a universalized, waste-expelling human settler appears as the ultimate

atmospheric parasite in neoliberal climate discourse. Michel Serres puts the point about scale this way: “The human parasite is of another order relative to that of the animal parasite: the latter is one, the former a set; the latter is time, the former, history; the latter is a garden, the former, a province; to destroy a garden or a world.”<sup>26</sup> An organic imperialist, the human colonizes ecologies, time, and thought itself—an entire lifeworld. In the hands of late-carbon liberalism’s human settler, killing takes a form both massive and casual. This figuration is based on some daunting facts of extinction. The everyday activities of carbon-dependent industrial living connect one’s bodily consumption and waste to the “stranger intimacies” of a shared atmosphere, slowly threatening other far-flung bodies, human and nonhuman.<sup>27</sup> The effects of waste may kill softly, enmeshed in the deep time and circuitous space of “slow violence,” a “largely unintentional ecocide.”<sup>28</sup> From this vantage, beyond its invocation of xenophobic rhetorics of shape-shifting, virality, and contagion, the parasite suggests a problem of knowledge about agency and causality. For this is a human defined by waste rather than by romantic marks of sentience, feeling, or intentionality.

To gloss Berlant, inhabiting late-carbon liberalism produces myths, icons, and feelings that may be “profoundly confirming” despite binding a person or world to situations of “profound threat.”<sup>29</sup> Rather than settle comfortably into the assumption of species-derived power—of the destructive and universal human geological agency of “the Anthropocene”—we might say that to recognize that life is ambiently queer is to divest from spectacular temporalities of crisis and transcendence that infuse queer theory and environmentalism alike. *Queering* in this sense emerges by tracing an affective materiality that interrupts anthropocentric body logics and space-time continuums rather than a sovereign stance of negation in relation to Law, including the law of compulsory reproduction. Thus I interpret “queer inhumanism” as an account of interspecies entanglement and reproductive displacement, an inquiry into the unrealized lifeworlds that form the background of the everyday. This requires thinking askance the human and thinking death, animality, and vulnerability in an age of many extinctions—extinctions of taxonomized species, to be sure, but also more subtle orchestrations of racial precarity and quiet obliterations of histories that could have been. In a time of extinctions, lateral reproduction suggests not some transcendent space of queer negation—or worse, an acceptance of Narayan’s logic of plague—but a problem of rethinking our casual reproduction of forms of ecological violence that kill quietly, outside the spectacular time of crisis.

### An Anthropophilic Plague

Different figures of the parasite are interrelated and share kinship in public representations of atmospheric change. Take one of the nascent narratives of climate disaster: science journalists and environmental NGOs now widely figure the growth of “invasive” mosquito populations as one deadly sign of climate crisis.<sup>30</sup> For example, *Scientific American* warns of increased numbers of mosquitoes in a warming world, exacerbating the risks of West Nile, dengue, and malaria. Distributions of feared diseases are growing, as “regions with tropical climates expand.”<sup>31</sup> Despite evidence that global South poor are most at risk, a warming planet has reinvigorated colonial projections of “the tropics” as a site of uncontrollable contagion. The so-called Asian tiger mosquito, *Aedes albopictus*, is the feared species. Figuring entomologists as “waging war” against invasive insect settlers, the French Press Agency notes that the tiger mosquito has established “colonies in twenty European countries . . . as far north as Germany, Belgium, and the Netherlands.”<sup>32</sup> The *Independent* adds that trade globalization aids transits of dengue and chikungunya from Asia to England, where mosquitoes might increasingly “survive year-round in milder winters.”<sup>33</sup> Heat increases the potency and ferocity of these parasites, according to the National Resources Defense Council: “Female mosquitoes bite more frequently in hotter temperatures. . . . Higher temperatures also shorten the time it takes for the virus inside the mosquito to develop and become infective.”<sup>34</sup> A recent *New York Times* article reports that dengue-carrying mosquitoes in the United States are becoming “thirstier for human blood” because of changes in antennae sensitivity and saliva composition.<sup>35</sup>

While climate change in these narratives usually appears as a universalized effect of human environmental wastes—sidestepping recognition of the deeply uneven geographies of profit and privilege from carbon emissions—the narrative of mosquito threats often follows xenophobic immigration, security, and trade discourses depicting the North’s engulfment by rising Asian and Latin American populations as well as the entomologic body of the terrorist.<sup>36</sup> Concomitant with rhetorics of atmospheric consumption and pollution in which immigrants from Latin America are “breathing our air,” mosquitoes appear to swarm the fluid space of the lower atmosphere from afar. Texas, where 236 people died of West Nile in 2012, stands as the border epicenter of these xenophobic fears. Health officials coordinated aerial spraying campaigns to eradicate mosquitoes using petroleum-derived pyrethroids that endanger avian and arthropod species and may cause neurological and endocrine toxicities in humans.<sup>37</sup> These ecocidal (and often ineffective) sprayings, as well as the promotion of DEET by state health offi-

cials, are increasingly being replicated across the Eastern Seaboard. Building on a longer history in which the horrors of colonial proximity are expressed through entomological figures of swarming and plasticity, insects emerge as materially and symbolically potent offshoots of human atmospheric agency.<sup>38</sup> In this sense, toxic bodies move “well beyond their specific range of biological attribution” into the politicized affect of species, race, and (dis)ability.<sup>39</sup>

These fears restage racial logics of colonial parasitology. Parasitology orients public health against forms of entanglement that fail to resolve into colonialism’s privileged liberal intimacies. Analyzing the forms of property that expand the figure of the liberal subject from self out into world, Lisa Lowe explains that normative intimacies rely on models of reciprocity, reproduction, and possession of self, kin, and land.<sup>40</sup> As mosquito-borne diseases threatened life expectancy and the cultivation of property, twentieth-century tropical medicine has historically attempted to police human-mosquito entanglement. In Egypt during World War II, for example, authorities appointed a “malaria dictator,” the infectious diseases expert Fred Soper.<sup>41</sup> As he had recently done in Brazil, Soper waged environmental war by deploying petroleum and synthetic nitrates used to eradicate breeding pools.<sup>42</sup> The dream of exterminating insects required constructing their behaviors in the language of species desire. Infectious diseases researchers developed the concept of *anthropophilia* and the metric of an anthropophilic index, a measure of the percentage of female mosquitoes in a sample population whose dissected stomachs revealed human blood. While the idea of anthropophilia stressed the universal attraction of mosquitoes to humans, the anthropophilic index revealed variability of feeding habits even within species and population categories. Since “mosquito-borne diseases” are usually zoonotic pathogens that transit through various species, insects and humans forming only part of the chains of their reproductive cycles, the concept of anthropophilia narrowed the lifeworld of the mosquito to a drama of unrequited love for the human, a vision of dangerous intimacy that mandated prophylaxis or eradication. As such, current entomological studies frame anthropophilia as a variable tendency that can be affected by ecological factors.

Thus today’s worries about mosquito migration situate mosquitoes as lateral agents of human environmental processes. Their feeding on humans is spurred by anthropogenic warming and intensified by the fact that development exterminates other potential hosts (monkeys, birds) from settler space. Thus ecological visions of “blowback” invigorate postcolonial fears of race, touch, blood, and engulfment as the underside to “development.” Fears of chikungunya, dengue, and West Nile rehearse worries about the interpenetration of bodies familiar from histories of eugenic border and health policies, racial slavery, colonial disease control, and the

AIDS crisis.<sup>43</sup> In response, emerging forms of environmental government attempt to redraw borders between species to ensure faith in the reproduction of able-bodied humanity.

### **Cryptid Traces**

What would it mean to understand panics over mosquito-borne diseases from the vantage of interspecies social and biological reproduction? Mosquitoes are linked to industrial processes through assemblages of fossilized carbon, industrial labor, and neoliberal consumption that constitute international divisions of labor and life. Greenwashing capitalism attempts to mask unequal access to carbon privilege for the wealthy through the figure of a rooted, extractive, and expanding body of the waste-defined human. William Rees and Mathis Wackernagel's Malthusian vision of the "ecological footprint" imagines a massified human settler that is slow moving and imprecise in the incidental violence it metes out against earth.<sup>44</sup> Visualized by the New York Department of Environmental Conservation as the brown foot of an outsize human covering the Western Hemisphere, the ecological footprint conjures colonial zoological legends of cryptid megafauna like bigfoot or the yeti.<sup>45</sup> The footprint can be analyzed only in retrospect, and thus the universalized human becomes a moving target defined by its trace. Curiously, although this is a powerful beast that can imprint widely on its environment, it faces its own crisis of reproduction. Like bigfoot, the human cryptid risks vanishing as it grows, and the footprint itself someday may exist only as the trace of the extinct.

Yet the greenwashing spectacle of the outsized, universal, waste-defined human masks more complex chains of interspecies relation. Farmed animals and mined fossil bodies in these processes amplify atmospheric carbon, creating an odd form of time travel in which the bodies of the dead fuel the lateral expansion and acceleration of carbon-privileged bodies in the present (globalization's "time-space compression") at the expense of bodies cast out of the bioengineered economy and into uncertain futures. While there is much more work needed to tease out these situated relations, feminist critics of reproduction have for some time explored linkages of neoliberal metabolism, species, and reproductive labor, arguing that the generation of surplus implicates entire social systems in the toxic administration of life. As Greta Gaard explains, critical-race feminist work on "reproductive justice" points to ways that capital controls reproductive capacities for precaritized women. The northern media's focus on women as individuals torn between child rearing and careers masks environmental conditions of declining fertility, the reproductive inputs of industrial animal breeding, and the production

of a transnational market in southern surrogates.<sup>46</sup> Reflecting on the consequences of such entanglements for an analysis of queer liberalism, Heidi Nast highlights how the international divisions of labor and life furthermore produce “surplus” populations to fill the flexible labor forces of sweated manufacturing.<sup>47</sup> Claims that gay and lesbian publics experience freedom from sexually dimorphic reproduction, for Nast, mask the economic mandate that others elsewhere biologically reproduce this labor force.<sup>48</sup> The offshoring of reproduction to southern zones of flexible labor and commoditized surrogacy—as well as the creeping of capital into the plastic form of living species—allows for expansive practices of consumption and the constitution of homonormative kinship by wealthy publics that are shrinking in both numerical terms and purchasing power.<sup>49</sup>

“Footprints” of environmental destruction collect complex itineraries of biocapital into a generic opprobrium against certain styles of consumption. In such renderings of climate crisis, ecologically threatened children often become moralizing fetishes for environmental government. Whereas Edelman’s analysis in *No Future* frames dystopic fictions of declining northern fertility—most notably, P. D. James’s novel *Children of Men*—as fascistic signs of a compulsory reproduction, such narratives may also emerge as symptoms of contradictions in the geographic logics of production. Queer publics fall on all sides of these contradictions, particularly those of race, nation, and class, and many homosexual and trans subjects are increasingly rendered disposable to the orders of capital even as a privileged few attain benefits of marriage, adoption, and employment inclusion. Edelman’s critique of reproductive futurism thus might reflect an atmosphere of climate-driven fears of imperial decline and shrinking capacities to reproduce extant divisions of labor and life. What if many of those populations who do not, will not, or cannot sexually reproduce are in effect doing what growing swaths of humanity are doing: exercising a phantasmic “choice” to refuse reproduction against an increasingly precarious world of unemployment, toxicity, and violence? Put simply, the sovereign choice to refuse reproduction may be redundant from the viewpoint of a late-carbon liberalism unwilling to distribute any more social goods and unable to guarantee life support. From here we can understand that there are constraints to ecological metaphors of the human as a universal waste-defined parasite; the human remains a divided biopolitical assemblage connecting multiple species into unequal flows of energy and labor.

## Intimate Atmospheres

If the crossings of the mosquito and the settler in an era of carbon amplification draw on the xenophobic conception of the parasite to garner affective force, Serres alternatively imagines parasitism as a “cascade”—as multiple extractions that draw in a series of species, each feeding from a predecessor until the chain collapses.<sup>50</sup> Parasitism confounds sovereign logics, including the logic of eradication, because the confrontation between host and parasite is always interrupted from some environmental noise that transforms the system. This cascade conception of parasitism undercuts the moral rendering of parasite as invader or as an uncontained body. The host must eat with the parasite while being eaten; the host is, in retrospect, revealed as its own parasite.

One way to add resolution to this cascade is to ask, along with Sara Ahmed, “what does it mean to be oriented” as our bodies find shape and perspective in changing atmospheres?<sup>51</sup> Bruno Latour puts it slightly differently, thinking through the airy constitution of subjects through olfaction (smell) as a process of *articulation* that attunes a subject to the inhaled textures of difference.<sup>52</sup> Such approaches suggest limits to anthropomorphic vision. As Chen teaches through discussions of the queering of “animacy hierarchies,” or the normative distinctions humans draw in language between different species of life and matter, the planet and its geophysical processes are less inert, less dead or inanimate, than we often think.<sup>53</sup> In ever more precarious intimacy with the shrinking number of living species, we inhabit a queer atmosphere in which the ether of the everyday is marked by senses of transformation and crisis.<sup>54</sup>

In *A Foray into the Worlds of Humans and Animals*, Jakob von Uexküll builds on Friedrich Nietzsche’s curious claim that as humans inflate their place in “nature,” so would mosquitoes, who share “the same self-importance.”<sup>55</sup> Anticipating logics that script humans and mosquitoes as sovereign enemies, Uexküll explains how species assemble narcissistic forms of vision. A phenomenal lifeworld, or *Umwelt*, is not universal but a product of interactions between environment, embodied sensory capacities, and “perception marks” or desired objects that orient subjects in time and space.<sup>56</sup> Despite its avowed goal of provincializing the human who takes its own vision as universal, Uexküll’s “lifeworld” shares with Ahmed’s “orientation” an ocular bias. Ahmed presents orientation as having “bearings,” of “knowing what to do to get to this place or that”; from here, Ahmed deploys a metaphor of tripping to describe queer moments.<sup>57</sup> For Uexküll, perception marks attract bodies to environments, establishing normative paths of bodily mobility. This allows the sorting of lifeworlds based on dominant hierar-

chies of species, race, and dis/ability. *Umwelten* appear open at first but proceed toward vanishing horizons limited by privileged body capacities. Dogs, for example, remain limited in their abilities to develop new perceptual “tones.” Describing the domesticated dog, Uexküll argues that household objects such as a dining table and plates are visible, but fail to divine their use value. Oddly, Uexküll uses the same rationale to explain the failure of a “Negro” from the “African interior” to understand the use of a ladder. While the “human” in Uexküll’s formulations apparently remains universal, his images of spatial attunements lays the groundwork for domesticating a racialized, able-bodied bourgeois domesticity as the privileged lifeworld of humanity.

If, contra Uexküll, we conceive of lifeworlds as relatively open, crossing species, it may be possible to rethink atmospheric intimacies in a world of carbon amplification. A mosquito bite would appear at first glance to be a momentary blip in what J. Jack Halberstam describes as reproductive family time, the temporality organized around the long slog from childhood to adulthood and death marked by bourgeois rituals of ownership, marriage, and reproduction. Conversely, a queer interspecies time, consisting of “strange temporalities, imaginative life practices, and eccentric economic practices” might be able to think a human and a mosquito entangled in a momentarily shared *Umwelt*, and thus to understand how mosquitoes and humans that both seem to derive carbon privileges—that appear as parasites—are often subjected to subtle precarities.<sup>58</sup>

Mosquitoes offer unique models of sensation and tracking, a point not lost on the US Department of Defense, which funds a large portion of academic entomological research against a specter of decentralized terrorism. Entomologists studying mosquito behavior and sensation find themselves in dual-use projects that simultaneously contribute to climate and bioweapons research. This is the outgrowth of a Cold War dream that the US imperial security apparatus could develop detection devices for airborne chemical and biological agents against the proliferation of “asymmetrical” weapons of the pestilent, swarming terrorist. Some of the recent defining research on the behaviors of flying insects—including John Murlis’s work on how insects track chemical plumes, John Carlson and Alison Carey’s work on mosquito olfaction, and the work of other scientists on mosquitoes’ relationships to atmospheric carbon dioxide—nonetheless paints a radically different picture of how humans and mosquitoes entangle in a warming world.<sup>59</sup> These entanglements decompose bodies and think against linear tropes of connection.

For example, the species of mosquitoes in these studies do not encounter humans as fully formed objects, as one of Uexküll’s *Umwelt* illustrations or the colonial concept of anthropophilia might suggest. They pursue not the unrequited

lover that is the human but the smell of carbon plumes, lactic acid, and other waste traces of bodies that signal proximity to edible blood. Bodies, like planets, have atmospheres. Mosquitoes have much higher olfactory resolutions than humans, allowing them to precisely locate large mammals at a distance, yet reducing this process to a sense of “smell” risks missing the complex work of antennae that gauge direction, perceptual tone, and turbulence of trace plumes. Having developed circuitous forms of navigation to help distinguish effects of gravity and turbulence on gaseous environs, mosquitoes read and navigate atmosphere in ways that assemble the human and other potential feeding animals not as bodies but as specters, expanding environments of liquid and gaseous traces. Orienting across these fluid orbits, mosquitoes opportunistically find protein meals in the human as many other potential feeding species disappear, and as humans and other animals contribute to the expanding carbon noise and humidity of a warming atmosphere, which might disrupt mosquito tracking at those points at which emissions collide with bodies. Imperceptibly engaging in a messy atmospheric dance of attractions and redirections, humans and mosquitoes collaborate in a queer reproductive choreography. A queer theory of the inhuman might thus view the mosquito not as an anthropophilic parasite in need of quarantine or eradication, or as a military model for “integrated pest management” against figures of terror, but as lateral spawn of the assemblage of carbon, water, virus, insect, and human within emerging capital-driven ecological transitions.

### **Epilogue: Xenogenesis**

For Ahmed, “it is important that we do not idealize queer worlds or simply locate them in an alternative space. . . . It is because this world is already in place that queer moments, where things come out of line, are fleeting. Our response need not be to search for permanence but to listen for the sound of the ‘what’ that fleets.”<sup>60</sup> We might read Ahmed’s statement doubly as a caution against the liberal ruse of sovereign freedom and the exoticizing tendency of a queer outside, including an animal outside. The point about the mosquito for queer theories of negation is not simply “look—we reproduce with animals!” Minor atmospheric intimacies open out into bigger scales that laterally determine how the reproduction of some bodies will affect planetary form, including through processes of climate change and disease that threaten mass premature death. Methodologies that take seriously interspecies entanglement are a political starting point rather than an ethical end; climate change is a series of small reproductive processes rather than a singular force. We experience a loss in the resolution of the material and symbolic logics of

reproduction when we grasp large systemic flows through moralizing figures like the parasite, which affectively support fascistic figures of power like the Child. For these reasons, thinking interspecies helps demonstrate the purchase of the queer on the everyday. One example exists in a nascent cross-border undocumented youth movement, which has appropriated the monarch butterfly to explode the association of migration with parasitism. (Notably, like migrant farmworkers, the monarch is threatened by warming temperatures and ecocidal pesticide use.)<sup>61</sup>

More speculatively, Octavia Butler's novel *Dawn* takes the trope of a toxic fertility crisis to imagine forms of interspecies sex that brutally, yet pleurably, incorporate humanity into an interspecies future.<sup>62</sup> Conjoining affect, communication, pleasure, reproduction, and healing into a single modality of tentacular intercourse, this wild vision of interspecies sex disturbs the individuated sexual subject through xenogenesis, a reproductive form that moves laterally away from the confines of species form. Such a vision asserts that reproduction is at once a negation and transition, and that the living incorporate extinct lives that could have been. At the heart of the body and the future lies the corpse.<sup>63</sup>

## Notes

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1. Leo Bersani, *Is the Rectum a Grave and Other Essays* (Chicago: University of Chicago Press, 2010), 3–4, 6.
2. Bersani, *Is the Rectum a Grave*, 29–30.
3. For the conference debate on Edelman's *No Future: Queer Theory and the Death Drive*, see Robert L. Caserio, Tim Dean, Lee Edelman, Judith Halberstam, and José Esteban Muñoz, "The Antisocial Thesis in Queer Theory," *PMLA* 121, no. 3 (2006): 819–28.
4. Bersani, *Is the Rectum a Grave*, 11–12, 30.
5. Frantz Fanon, *The Wretched of the Earth*, trans. Richard Philcox (New York: Grove, 2004), 4, 6–7, 182. Use of the pesticide DDT, according to Fanon, is comparable to the Christian civilizing mission (7).
6. See Chandan Reddy, *Freedom with Violence: Race, Sexuality, and the US State* (Durham, NC: Duke University Press, 2011).

7. Lauren Berlant, *Cruel Optimism* (Durham, NC: Duke University Press, 2011), e-book location 234.
8. Berlant, *Cruel Optimism*, e-book location 265.
9. Jasbir Puar dubs this “bio-necro collaboration.” See Puar, *Terrorist Assemblages: Homonationalism in Queer Times* (Durham, NC: Duke University Press, 2009), 33–35.
10. Vinay Gidwani and Rajyashree N. Reddy, “The Afterlives of ‘Waste’: Notes from India for a Minor History of Capitalist Surplus,” *Antipode* 43, no. 5 (2011): 1625–58.
11. On the relation of the reproduction of bodies and systems, see Andil Gosine, “Dying Planet, Deadly People: ‘Race’-Sex Anxieties and Alternative Globalizations,” *Social Justice* 32, no. 4 (2005): 69–86; Greta Gaard, “Reproductive Technology or Reproductive Justice?,” *Ethics and the Environment* 15, no. 2 (2010): 103–30; Noël Sturgeon, “Penguin Family Values: The Nature of Planetary Environmental Reproductive Justice,” in *Queer Ecologies: Sex, Nature, Politics, Desire*, ed. Catriona Mortimer-Sandilands and Bruce Erickson (Bloomington: Indiana University Press, 2010), 102–33; Michael McIntyre and Heidi J. Nast, “Bio(necro)polis: Marx, Surplus Populations, and the Spatial Dialectics of Reproduction and ‘Race,’” *Antipode* 43, no. 5 (2011): 1465–88; Nicole Seymour, *Strange Natures: Futurity, Empathy, and the Queer Ecological Imagination* (Urbana: University of Illinois Press, 2013).
12. Donna Haraway, “Companion Species, Mis-Recognition, and Queer Worlding,” foreword to *Queering the Non/Human*, ed. Naureen Giffney and Myra J. Hird (Aldershot, UK: Ashgate, 2008), xxviii.
13. Tim Dean, *Unlimited Intimacy: Reflections on the Subculture of Barebacking* (Chicago: University of Chicago Press, 2009). Dean’s work should be read alongside cases in which individuals contract HIV to obtain municipal or state health benefits. See Maral Noshad Sharifi, “The Men Who Want AIDS—and How It Improved Their Lives,” *Out*, August 8, 2013, [www.out.com/news-opinion/2013/08/02/men-who-want-aids-bronx-new-york](http://www.out.com/news-opinion/2013/08/02/men-who-want-aids-bronx-new-york).
14. Myra J. Hird, “Animal Trans,” in Giffney and Hird, *Queering the Non/Human*, 227–48.
15. Karl Marx, *Capital*, vol. 1, trans. Ben Fowkes (New York: Vintage, 1976), 637. See also John Bellamy Foster, Brett Clark, and Richard York, *The Ecological Rift: Capitalism’s War on Earth* (New York: Monthly Review Press, 2010).
16. A caricature of greed and failed heteromascularity, Scrooge from *A Christmas Carol* is a key figure of the economic parasite. Edelman embraces him for his refusal of “the very warm-bloodedness of mammalian vitality” and for a sadistic subjection of his neighbor to his own deathly fate (*No Future: Queer Theory and the Death Drive* [Durham, NC: Duke University Press, 2004], 44).
17. I adapt here two tropes of the lateral. First, Lynn Margulis and Dorion Sagan critique the life-death binary through a description of the lateral exchange of DNA across

bacterial bodies. Second, Lauren Berlant responds to Achille Mbembe's concept of *necropolitics* by explaining that biopower distributes agency laterally across bodies rather than centered on a sovereign subject. See Margulis and Sagan, *What Is Life?* (Berkeley: University of California Press, 2000); and Berlant, "Slow Death (Sovereignty, Obesity, Lateral Agency)," *Critical Inquiry* 33 (2007): 754–80. In the context of Berlant's article on obesity, which is also a chapter in *Cruel Optimism*, "lateral agency" may be problematic given that it draws affective power from fears of fat bodies as laterally unconstrained. For a disability-critical take on "the obesity crisis," see Anna Mollow, "Sized Up," *Bitch* 59 (2013), [bitchmagazine.org/article/sized-up-fat-feminist-queer-disability](http://bitchmagazine.org/article/sized-up-fat-feminist-queer-disability).

18. Valerie Rohy, *Anachronism and Its Others: Sexuality, Race, Temporality* (Albany: State University of New York Press, 2009), 18.
19. Chris D. Thomas et al., "Extinction Risk from Climate Change," *Nature*, January 8, 2004, 145–48. Edward O. Wilson offers a higher figure: 20 percent commitment to extinction by 2030 and 50 percent commitment by 2050. See Wilson, *The Future of Life* (New York: Random House, 2002).
20. I have in mind Dipesh Chakrabarty's concern about an environmental undermining of basic "boundary parameters of human existence"; contrary to Chakrabarty's argument for a totalizing species-thinking, I would insist that these parameters are already surpassed for some racialized southern agrarian populations. See Chakrabarty, "The Climate of History: Four Theses," *Critical Inquiry* 35, no. 2 (2009): 218.
21. Mel Y. Chen, *Animacies: Biopolitics, Racial Mattering, and Queer Affect* (Durham, NC: Duke University Press, 2012), 198–202.
22. Renisa Mawani, "Atmospheric Pressures: On Race and Affect," unpublished paper, 3.
23. Michael Ziser and Julie Sze, "Climate Change, Environmental Aesthetics, and Global Environmental Justice Cultural Studies," *Discourse* 29, nos. 2–3 (2007): 384–410.
24. See Alexandra Isfahani-Hammond, "Of She-Wolves and Mad Cows: Animality, Anthropophagy, and the State of Exception in Claudio Assis's *Amarelo Manga*," *Luso-Brazilian Review* 48, no. 2 (2011): 129–49.
25. Carla Freccero, "Carnivorous Virility; or, Becoming-Dog," *Social Text*, no. 106 (2011): 178.
26. Michel Serres, *The Parasite*, trans. Lawrence Shehr (Baltimore: Johns Hopkins University Press, 1982), 88.
27. Building on Nayan Shah, Tavia Nyong'o, with a "queer of color account of stranger intimacy," notes that ambient environs fail to stay contained, producing a temporal form of irony: "The background we think we are perceiving . . . is revealed at the conclusion to have another background" (Nyong'o, "Back to the Garden: Queer Ecology in Samuel Delany's *Heavenly Breakfast*," *American Literary History* 24, no. 4 [2012]: 749–50, 761; Shah, *Stranger Intimacy: Contesting Race, Sexuality, and Law in the North American West* [Berkeley: University of California Press, 2011]).

28. Rob Nixon, *Slow Violence and the Environmentalism of the Poor* (Cambridge, MA: Harvard University Press, 2009); Kate Rigby, "Writing in the Anthropocene," *Australian Humanities Review* 47 (2009): 175.
29. Berlant, *Cruel Optimism*, e-book location 36.
30. Fears of mosquito-borne disease complement other reporting on insects as beneficiaries of climate change. For more on how locusts devastate agriculture, beetles accelerate deforestation, and crickets and other insects are thriving and thus being targeted as food species, see Hugh Raffles, *Insectopedia* (New York: Random House, 2011), 207–40, 318–30; David Dunn and James P. Crutchfield, "Entomogenic Climate Change," Santa Fe Institute Working Paper, February 21, 2013; and Marcel Dicke and Arnold Van Huis, "The Six-Legged Meat of the Future," *Wall Street Journal*, February 19, 2001, [online.wsj.com/article/SB10001424052748703293204576106072340020728.html](http://online.wsj.com/article/SB10001424052748703293204576106072340020728.html).
31. Umair Irfan and ClimateWire, "Climate Change May Make Insect-Borne Diseases Harder to Control," *Scientific American*, November 21, 2011, [health.usnews.com/health-news/news/articles/2013/01/03/climate-change-may-bring-another-mosquito-borne-illness-to-us](http://health.usnews.com/health-news/news/articles/2013/01/03/climate-change-may-bring-another-mosquito-borne-illness-to-us).
32. Mariette le Roux [Agence France-Presse], "Asian Tiger Mosquito Spreading Disease through Europe," *Cosmos: The Science of Everything*, August 13, 2012, [www.cosmosmagazine.com/news/asian-tiger-mosquito-spreading-disease-through-europe/](http://www.cosmosmagazine.com/news/asian-tiger-mosquito-spreading-disease-through-europe/).
33. Steve Connor, "Asian Mosquito 'Could Bring Tropical Diseases to Britain,'" independent.co.uk, April 25, 2012, [www.independent.co.uk/environment/climate-change/asian-mosquito-could-bring-tropical-diseases-to-britain-7676063.html](http://www.independent.co.uk/environment/climate-change/asian-mosquito-could-bring-tropical-diseases-to-britain-7676063.html).
34. Kim Knowlton, Gina Solomon, and Miriam Rotkin-Ellman, *Fever Pitch*, NRDC Issue Paper (New York: National Resources Defense Council, 2009), 3.
35. Donald McNeil Jr., "A Virus May Make Mosquitoes Even Thirstier for Human Blood," *New York Times*, April 2, 2012, [www.nytimes.com/2012/04/03/health/research/dengue-virus-may-make-mosquitoes-thirstier-for-human-blood.html?\\_r=0](http://www.nytimes.com/2012/04/03/health/research/dengue-virus-may-make-mosquitoes-thirstier-for-human-blood.html?_r=0).
36. The association of the "Muslim-looking" with insects has been commonplace in post-9/11 US racial discourse. On September 14, 2011, a Sikh participant at a meeting to respond to hate crimes was told, "You Islamic mosquitoes should be killed" by another New Yorker. See Vijay Prashad, *Uncle Swami: South Asians in America Today* (New York: New Press, 2012), 5.
37. Jim Schutze, "Is Dallas Getting Smarter in the Fight against West Nile?," *Dallas Observer*, September 5, 2013, [www.dallasobserver.com/2013-09-05/news/dallas-vs-west-nile/](http://www.dallasobserver.com/2013-09-05/news/dallas-vs-west-nile/). I acknowledge that discussions of pesticide endocrine toxicity often engage transphobic fears of declining fertility and "chemically induced transgenderism."
38. Clapperton Mahvunga, "On Vermin Beings: Pestiferous Animals and Human Game," *Social Text*, no. 106 (2011): 151–76; Neel Ahuja, "Abu Zubaydah and the Caterpillar," *Social Text*, no. 106 (2011): 127–49.

39. Chen, *Animacies*, 190.
40. Lisa Lowe, "The Intimacies of Four Continents," in *Haunted By Empire*, ed. Ann Laura Stoler (Durham, NC: Duke University Press, 2008), 199–201.
41. Timothy Mitchell, *Rule of Experts: Egypt, Technopolitics, and Modernity* (Berkeley: University of California Press, 2002), 19–53.
42. Nancy Stepan, *Eradication: Ridding the World of Diseases Forever?* (Ithaca: Cornell University Press, 2011).
43. Michael Davidson, *Concerto for the Left Hand: Disability and the Defamiliar Body* (Ann Arbor: University of Michigan Press, 2009), 41–42.
44. William E. Rees, "Ecological Footprints and Appropriated Carrying Capacity: What Urban Economics Leaves Out," *Environment and Urbanisation* 4, no. 2 (1992): 121–30; Mathis Wackernagel, *Ecological Footprint and Appropriated Carrying Capacity: A Tool for Planning toward Sustainability* (PhD diss., University of British Columbia, 1994).
45. Gina Jack, "Your Carbon Footprint," *New York State Conservationist for Kids*, www.dec.ny.gov/education/54052.html.
46. Gaard, "Reproductive Technology or Reproductive Justice?"
47. Heidi J. Nast, "Capitalism, Anti-Natalism, and New Geographies of Reproduction" (keynote address at Critical Geographies Conference, University of North Carolina, Chapel Hill, November 2, 2012). See also McIntyre and Nast, "Bio(necro)polis."
48. Nast's argument that "anti-natalism" relies on a reproductive elsewhere does not require us to assume that queer publics alone catalyze these relations. I read it simply as an attempt to locate queer liberalism in relation to geographic contradictions of social and biological reproduction.
49. Melinda Cooper, *Life as Surplus* (Seattle: University of Washington Press, 2008).
50. Serres, *Parasite*, 3–14.
51. Sara Ahmed, "Orientations: Toward a Queer Phenomenology," *GLQ* 12, no. 4 (2006): 543.
52. Bruno Latour, "How to Talk about the Body? The Normative Dimension of Science Studies," *Body and Society* 10, nos. 2–3 (2004): 205–29.
53. Chen, *Animacies*, 2.
54. Bronislaw Szerynski, "Reading and Writing the Weather: Climate Technics and the Moment of Responsibility," *Theory, Culture, and Society* 27, nos. 2–3 (2010): 9–30.
55. Friedrich Nietzsche, "On Truth and Lie in an Extra-Moral Sense," quoted in Dorion Sagan, foreword to *A Foray into the Worlds of Humans and Animals*, by Jakob von Uexküll, trans. Joseph D. O'Neill (Minneapolis: University of Minnesota Press, 2010), 1–2.
56. Uexküll, *Foray into the Worlds of Humans and Animals*, 53–63.
57. Ahmed, "Orientations," 543.

58. Judith Jack Halberstam, *In a Queer Time and Place* (New York: New York University Press, 2005), 1.
59. See especially John Murlis, "Odor Plumes and How Insects Use Them," *Annual Review of Entomology* 37 (1992): 505–32; and John Carlson and Alison Carey, "Scent of a Human," *Scientific American*, July 2011, 76–79; Teun Dekker, Martin Greer, and Ring T. Cardé, "Carbon Dioxide Instantly Sensitizes Female Yellow Fever Mosquitoes to Human Skin Odors," *Journal of Experimental Biology* 208 (2005): 2963–72; and Pablo H. Guerenstein and John G. Hildebrand, "Roles and Effects of Environmental Carbon in Insect Life," *Annual Review of Entomology* 53 (2008): 161–78.
60. Sara Ahmed, "Orientations: Toward a Queer Phenomenology," *GLQ* 12, no. 4 (2006): 565.
61. In her stunning image *Lupe and Sirena in Love*, Alma Lopez offers an early use of butterflies to imagine relations of migration and queer futurity. The Virgin of Guadalupe embraces a mermaid in front of the Los Angeles skyline, suspended not by the iconic cherub but instead by a migratory viceroy butterfly. For more on Lopez's critique of the association of insects, migration, femininity, and parasitism, see Lopez, "Mermaids, Butterflies, and Princesses," *Aztlán* 25, no. 1 (2000): 189–91.
62. Octavia Butler, *Dawn* (New York: Warner, 1988).
63. Sharon P. Holland, "Bill T. Jones, Tupac Shakur, and the (Queer) Art of Death," *Calaloo* 23, no. 1 (2000): 384–93.

