Prologue:
Cloud over Chicago

The smoke of Chicago has a peculiar and aggressive individuality, due, I imagine, to the natural clearness of the atmosphere. It does not seem, like London smoke, to permeate and blend with the air. It does not overhang the streets in a uniform canopy, but sweeps across and about them in gusts and swirls, now dropping and now lifting again its grimy curtain. You will often see the vista of a gorge-like street so choked with a seeming thundercloud that you feel sure a storm is just about to burst upon the city, until you look up at the zenith and find it smiling and serene.

—William Archer, America To-Day (1900)

My earliest memories of Chicago glide past the windows of an old green and white Ford station wagon. I was not yet in grade school. Each summer, my family drove from our home in southern New England to my grandparents' cottage on Green Lake, in central Wisconsin. Most of what remain are backseat memories: looking at comic books with my brother, checking odometer readings to measure the tunnels of the Pennsylvania Turnpike, counting different state license plates on passing cars. I remember the dramatic vistas of the Appalachians, and the descent into Ohio, but as we moved deeper into the Middle West the landscape became at once more uniform and less interesting. Little of it survives in my memory.

Until Chicago. The city announced itself to our noses before we ever saw it, and we always pressed our faces against the windows to locate the sweet pungent odor that was Gary. (Gary and Chicago blend in my child's eye view as a single place, united in a child's mythic name: The City.) The forest of smokestacks, the great plumes of white and unwhite steam, were unlike any place that I, middle-class child of a nurse and a professor, had ever lived. The place remains in my memory as a gray landscape with little vegetation, a clouded sky hovering over dark buildings, and an atmosphere that suddenly made breathing a conscious act. I remember especially one smokestack with dense rusty orange vapor rising like a solid column far into the sky before it dissipated. We always saw it there, every year, and it signaled our entrance into The City.
The orange cloud of smoke was a signpost warning us of our entry into an alien landscape. As the highway rose above city streets to give an elevated view of the South Side, I saw a world that simultaneously repelled and fascinated me. Beneath the rush and noise of traffic, lined up beside the factories, were block after block of two- and three-story houses arranged in neat rows like barracks. The landscape’s natural flatness lent a sense of endless uniformity to the scene, and the buildings only added to the monotony. No matter how they were actually painted, their color in my oldest memory is always gray.

I was too young to know anything of the people who lived in those buildings, their class or the color of their skins, but I could see the shattered windows, the litter, and the dirt, and I knew this was a place in which I had no wish to linger. Not even the skyscrapers of the Loop made a favorable impression on me, and I barely remember them from those early trips. The one positive image I can conjure up (and this not until we made our way north out of the downtown) is a large white and red neon billboard advertising Budweiser beer, flashing what then seemed an astonishing variety of colors. It was my brother’s and my favorite part of the trip through Chicago, not least because it was a landmark showing the way out of The City.

A few years later, my parents moved to Madison, Wisconsin, where I grew up. There, I came to know and care for a landscape that few who are not midwesterners ever call beautiful. Travelers, whether in the air or on the ground, usually see the Middle West less as a destination than as a place to pass through. Only after a long while does one appreciate that the very plainness of this countryside is its beauty: the farms with their fields of yellow corn and stench of fresh manure, the great fence-line bur oaks recalling long-vanished prairies, the dark lakes and woodlands of the hill country to the north, the small towns with their main streets of stores and bars and bakeries. When people speak, usually with some ambivalence, of the American heartland, this is one of the places they mean. For me, it came to be home.

At the edge of this landscape, somehow in its midst without seeming to be quite part of it, was Chicago, which I eventually visited on day trips that introduced me to its museums and skyscrapers, not just its views from the highway. Never having lived in a great city, I had no idea how little I understood it, but my continuing instinct was to mistrust and dislike it. Loving the rural landscape—and later, as I discovered the West, loving still wilder lands as well—I felt quite certain that I could never call the city home. Like many who came to adult consciousness during the environmentalist awakening of the late sixties, I wished to live close to “nature.” If asked to choose between city and country, I’d have felt no
hesitation about my answer. More important, I’d have thought it perfectly reasonable—perfectly *natural*—to pose the choice in just these stark terms. Chicago represented all that was most *unnatural* about human life. Crowded and artificial, it was a cancer on an otherwise beautiful landscape.

One of the pleasures of childhood and adolescence is that one can experience emotions of this sort without worrying too much about their possible contradictions. These feelings came easily—my love of nature and the pastoral countryside, my dislike for the city, and, beneath them, the romanticism which had schooled me in such perceptions. It took me a long time to realize that I had learned them from a venerable tradition in American and European culture, and an even longer time to suspect that they were distorting my sense of city and country alike. I can’t pinpoint when it happened, but I gradually began to sense that my own life (including my affection for things natural) was not so free of the city and its institutions as I had once believed.

Reflecting on the various expeditions I made between my parents’ Madison home and assorted rural retreats around Wisconsin, I became troubled by what seemed a paradox in my easy use of the word “natural.” The more I learned the history of my home state, the more I realized that the human hand lay nearly as heavily on rural Wisconsin as on Chicago. By what peculiar twist of perception, I wondered, had I managed to see the plowed fields and second-growth forests of southern Wisconsin—a landscape of former prairies now long vanished—as somehow more “natural” than the streets, buildings, and parks of Chicago? All represented drastic human alterations of earlier landscapes. Why had I seen some human changes as “natural”—the farm, the woodlot, the agricultural countryside—but not the other changes that had made “nature” into “city”? How could one human community be “natural” and another not?

My puzzlement did not end there. In my eagerness to reject Chicago and embrace the rural lands around it, I had assumed that there was little chance of confusing the two. I had only to look at any midwestern map to see the same reassuringly sharp boundaries between city and country I had experienced so strongly as a child. And yet the moment I tried to trace those boundaries backward into history, they began to dissolve. City and country might be separate places, but they were hardly isolated. Chicago had become “urban,” spawning belching smokestacks and crowded streets, at the same time that the lands around it became “rural,” yielding not grass and red-winged blackbirds but wheat, corn, and hogs. Chicago’s merchants and workers had built their warehouses and factories in the same decades that farmers had plowed up the prairie sod and lumberjacks had cut the great pine trees of the north woods. City and country shared a
common past, and had fundamentally reshaped each other. Neither was as "natural" or "unnatural" as it appeared.

This insight disturbed me. More and more, I wondered whether it made sense—historically or environmentally—to treat city and country as isolated places. Might I not be fooling myself to think that I could choose between them? I began to see that the word "city" depended for its meaning on its opposition to the word "country," and vice versa. Unpleasant as it might be to admit, the city helped define—might even be essential to—what I and others felt about the country. My passion for rural and wild landscapes would have lost at least some of its focus without my dislike for Chicago to serve as counterpoint. The city was what the country was not: in loving the one, I expressed a certain contempt, but also a certain need, for the other. And beyond this linguistic question, city and country also had close material ties. Would these Wisconsin farms be here without the city in which to sell their crops? Could the city survive if those crops failed to appear? The answer to both questions was surely no, but then why did it make sense, in trying to understand rural nature, to draw a boundary between it and the urban world next door? The more I pondered that question, the more I began to doubt the "naturalness" of the wall that seemed to stand so solidly between the country I thought I loved and the city I thought I hated.

If that wall was more a habit of thought than a fact of nature, then decrying the "unnaturalness" of city life in a place like Chicago was merely one more way of doing what my own environmental ethic told me to oppose: isolating human life from the ecosystems that sustain it. Putting the city outside nature meant sending humanity into the same exile. And yet this is precisely what I and many other modern environmentalists have unconsciously often done, following the lessons we learned from nineteenth-century romantic writers like Wordsworth, Emerson, Thoreau, and Muir. The boundary between natural and unnatural shades almost imperceptibly into the boundary between nonhuman and human, with wilderness and the city seeming to lie at opposite poles—the one pristine and unfallen, the other corrupt and unredeemed. Gauged by how we feel about them, the distance we travel between city and country is measured more in the mind than on the ground. If this is true, then the way we cross the rural-urban boundary, the way we make the journey into and out of Chicago, exposes a great many hidden assumptions about how we see the larger relationship between human beings and the earth upon which we live.

This book, then, is a series of historical journeys between city and country in an effort to understand the city's place in nature. I choose Chicago in part because it loomed large in my own childhood as a dark
symbol of The City, so that writing these travelers’ tales about the past serves as a kind of exorcism of a way of thinking I now believe to be wrongheaded and self-defeating. But Chicago is also an appropriate focus for a less personal reason—it has been raising similar questions about the city’s place in nature for well over a century now. I was certainly not the first to visit it with deeply conflicted emotions. During the nineteenth century, when Chicago was at the height of its gargantuan growth, its citizens rather prided themselves on the wonder and horror their hometown evoked in visitors. No other city in America had ever grown so large so quickly; none had so rapidly overwhelmed the countryside around it to create so urban a world. Those who sought to explain its unmatched expansion often saw it as being compelled by deep forces within nature itself, gathering the resources and energies of the Great West—the region stretching from the Appalachians and Great Lakes to the Rockies and the Pacific—and concentrating them in a single favored spot at the southwestern corner of Lake Michigan. The image is not one I would have appreciated as a child, but for these nineteenth-century observers Chicago looked for all the world like a city destined for greatness by nature’s own prophecies: Nature’s Metropolis. And so the journey between urban Chicago and the rural West carries a much more than autobiographical significance.

Descriptions of the cityward journey became almost a leitmotif among those who wrote about Chicago in the late nineteenth and early twentieth centuries. Hamlin Garland, Waldo Frank, Louis Sullivan, Robert Herrick—all tried to capture in words the railroad ride that first brought them to the new metropolis of the Great West. However they felt about the journey, each described a passage between two worlds that could hardly have been more alien from each other. Starting in the agricultural terrain of the surrounding countryside, the railroad became a vehicle that symbolically transported its passengers as much through time as through space. At journey’s end stood a city that represented the geographical antithesis of the lands around it, and the historical prophecy of what America might become as it escaped its rural past.

Travelers recognized the city long before they came to it. The air changed. “I shall never forget,” wrote the novelist Hamlin Garland of his youthful first visit to Chicago in the 1880s, “the feeling of dismay with which . . . I perceived from the car window a huge smoke-cloud which embraced the whole eastern horizon, for this, I was told, was the soaring banner of the great and gloomy inland metropolis. . . .” Even admitting his literary embellishments, Garland’s was a prototypical Chicago journey which suggests what many rural visitors and other travelers undoubtedly felt as they approached the city. As he saw the farmhouses give way
first to villages and then to Chicago's outer suburbs, Garland began to believe that the railroad's "tangled, thickening webs of steel" were carrying him into radically unfamiliar terrain. From a countryside that was, if anything, oppressive in its openness and plainness—"a commonplace country, flat, unkempt and without a line of beauty"—he moved toward a city whose oppressiveness was of another sort entirely. The more urban the landscape became, the more its space contracted and its time accelerated; the deeper he penetrated its interior, the more he had to fight off feelings of claustrophobia and vertigo.

At his home in Iowa, the young Garland had dreamed of the day he might finally visit Chicago for himself. Country boy that he was, he had needed a long time to summon the courage to go there, feeling "safe only when in sight of a plowed field." Now, as he stepped out into the train station, he was confronted with crowds that seemed as dark and foreboding as the city itself. Writing three decades later about his feelings of fear and alienation at that moment, he sketched a frightening portrait of the hackmen who tried to grab his baggage and drive him for some outrageous fare to his hotel. Their eyes were "cynical," their hands "clutching, insolent . . . terrifying," their faces "remorseless, inhuman and mocking," their grins "like those of wolves." Such were the first people he met in Chicago.

Garland's language is literary and exaggerated, but it outlines the symbolic conventions of the Dark City—in counterpoint to the Fair Country—all the more effectively because of its caricature. For Garland, the forces that had created the city and clouded its horizon had also stolen from its citizens something of their humanity. Repulsed by the dirty atmosphere, stunned at "the mere thought of a million people," and fearful of the criminal "dragon's brood with which the dreadful city was a-swarm" in its "dens of vice and houses of greed," he and his brother spent less than a day exploring Chicago before continuing their railroad journey to the east. And yet not all was negative about their experience. The tall buildings of the downtown were like none they knew back home, and at every turn they found things they had never seen: "nothing was commonplace, nothing was ugly to us." "To me," Garland concluded, Chicago "was august as well as terrible." Such a double-edge description, in varying combinations of praise and revulsion, would be offered by virtually every traveler who visited the city.

A decade after his first visit, writing one of his earliest novels, Garland portrayed a Wisconsin farm girl, Rose Dutcher, making the same journey for the first time. Once again, a cloud on the horizon marked the transition from country to city:
Rose looked—far to the south-east a gigantic smoke-cloud soared above the low horizon line, in shape like an eagle, whose hovering wings extended from south to east, trailing mysterious shadows upon the earth. The sun lighted its mighty crest with crimson light, and its gloom and glow became each moment more sharply contrasted.\textsuperscript{10}

It would be hard to imagine a more ambivalent image. The great eagle, blood red in the light of a rising sun, betokened urban growth and national pride, sent soaring skyward on jet black wings by ten thousand tons of burning coal.\textsuperscript{11} Seen from afar, it was alive, almost magical. Whatever the claustrophobic darkness that might lie beneath it, its very presence was proof that the lands below had been remade by human industry. Chicago wore its cloud like a black halo, and few visitors failed to notice the symbolism. To transform not merely the earth but also the heavens above: this surely was a mark of great human achievement, "august" as well as "terrible." The cloud that Hamlin Garland and Rose Dutcher saw from their train windows had nothing to do with the natural atmosphere of an Illinois prairie. Only coal, human labor, and a multitude of furnaces and steam engines could produce it. Glorious and abhorrent at the same time, the polluted eagle was a wholly human creation, and carried within it all the contradictions of human progress. "See that cloud?" someone on Rose's train had asked. "That's Chicago."\textsuperscript{12}

Chicago's murky horizon was the most immediate sign of its urban transformation, but everything about its environment, including its citizens, suggested that the place had broken from nature. As Rose Dutcher made her way out from the train station, she encountered the city beneath the cloud: "Terrors thickened. Smells assaulted her sensitive nostrils, incomprehensible and horrible odors. Everywhere men delved in dirt and murk, and all unloveliness."\textsuperscript{13} In the face of such experiences, a new arrival in the city was bound to be reminded of its rural antithesis. Like her creator, Rose suddenly recalled the home she had left behind. An image of her father's farm rose in her mind: "At that moment the most beautiful thing in the world was the smooth pasture by the spring, where the sheep were feeding in the fading light. . . ." That pastoral scene had all the natural loveliness that the city lacked, but it was already a thing of the past, a nostalgic glance backward toward an abandoned world. Like Garland and like Chicago itself, Rose had chosen her course and could no longer turn back from her urban future. Her old country moorings were gone. "She was afloat," Garland said, "and retreat was impossible."\textsuperscript{14}

Many other writers joined Garland in seeing their passage from country to city as an entrance into a perpetually shrouded landscape in which the darkness of the sky was proof of a moral transformation in humanity
and nature alike. Such descriptions almost always suggested the city’s vast power and its ability to inspire awe; but, as in Garland’s cloud-eagle, power and awe flowed from deeply troubling roots. The city’s beauty inverted nature and turned humanity inward upon itself. In choosing to live in such a place, one ran the risk of putting human creation above the works of God. “The manufactories,” wrote Charles Dudley Warner of his visit to Chicago in 1889, “vomit dense clouds of bituminous coal smoke, which settle in a black mass . . . so that one can scarcely see across the streets in a damp day, and the huge buildings loom up in the black sky in ghostly dimness.”15 Things were no better thirty years later. “Here,” wrote Waldo Frank in 1919, “is a sooty sky hanging forever lower.” For Frank, the Chicago atmosphere was a nightmare out of Dante’s Hell, in which the dismembered corpses of the stockyards’ slaughtered animals descended to earth in a perpetual rain of ash: “The sky is a stain: the air is streaked with runnings of grease and smoke. Blanketing the prairie, this fall of filth, like black snow—a storm that does not stop. . . .”16 As Frank’s railroad swept him in “toward the storm’s center,” it entered an environment so entirely dominated by humanity that sun and sky both seemed to be in retreat. “Chimneys stand over the world,” wrote Frank, “and belch blackness upon it. There is no sky now.”17 Whatever natural appearance the place might once have had had vanished when the sunlight died.

But however foreboding Chicago’s clouds and darkness might seem, its landscape also inspired awe. One might fear the degree to which the city had declared its independence from nature, but at the same time one could hardly help feeling wonder at its audacity. The more visitors came to believe that Chicago had broken with the rural nature that surrounded it, the more fascinating it became in its own right. Only the most alienated of tourists failed to experience an unexpected attraction to the place.18 Whether or not they thought it ugly, most Americans still believed they saw in it one of the wonders of the Republic. Exploding in two or three decades from a prairie trading post to a great metropolis, Chicago was among their proudest proofs that the United States was indeed “nature’s nation.”19 Not by accident did Garland transform Chicago’s smoke cloud into an image of the same bird that adorned the great seal of the nation. Especially in the years following the devastating fire of 1871, when it seemed that the city had miraculously resurrected itself from its own ashes, Chicago came to represent the triumph of human will over natural adversity. It was a reminder that America’s seemingly inexhaustible natural resources destined it for greatness, and that nothing could prevent the citizens of this favored nation from remaking the land after their own image.

Seen in this light, the city became much more compelling. The Italian
playwright Giuseppe Giacosa, who had initially called the place “abominable,” finally admitted that its energy and industry had led him to see in it “a concept of actual life so clear, so open-minded, so large and so powerful” that it made him think better of his earlier disgust. Chicago was destiny, progress, all that was carrying the nineteenth century toward its appointed future. If the city was unfamiliar, immoral, and terrifying, it was also a new life challenging its residents with dreams of worldly success, a landscape in which the human triumph over nature had declared anything to be possible. By crossing the boundary from country to city, one could escape the constraints of family and rural life to discover one’s chosen adulthood for oneself. Young people and others came to it from farms and country towns for hundreds of miles around, all searching for the fortune they believed they would never find at home. In the words of the novelist Theodore Dreiser, they were “life-hungry” for the vast energy Chicago could offer to their appetites.

So attractive was the city that it seemed at times to radiate an energy that could only be superhuman. Called forth by the massed resources of western nature, the city—at least in literary descriptions—became almost a force of nature itself. Mere human beings might try to manipulate or control its energy, but never to create it. This most human of places seemed to express a power that belonged less to people than to the god whose name was Nature. “It was,” wrote Garland of Rose Dutcher’s train journey,

this wonderful thing again, a fresh, young and powerful soul rushing to a great city, a shining atom of steel obeying the magnet, a clear rivulet from the hills hurrying to the sea. On every train at that same hour, from every direction, others, like her, were entering on the same search to the same end.

Garland’s metaphors may seem a little curious as descriptions of a city, but he followed a favorite literary convention of his day. His urban metaphors are all natural: the city was the great ocean, to which all fresh streams must flow and become salt. It was the magnet, projecting invisible lines of force that determined the dance of atoms. By so massing the combined energies and destinies of hundreds of thousands of people, the city, despite its human origins, seemed to express a natural power. As Rose stood remembering her father’s spring and pasture, she felt herself to be “at the gate of the city, and life with all its terrors and triumphs seemed just before her.” For those like Rose who heard its call, Chicago could appear to encompass a universe of living possibilities precisely because it was so thoroughly human a place.
Among those who answered the city’s siren song and embraced its possibilities was the architect Louis Sullivan. Arriving as a young man in Chicago a couple of years after the Great Fire of 1871, Sullivan was instantly struck by the vision and sense of destiny of those who were rebuilding the city. In prose that sometimes seemed as windy as his chosen city, he declared that one could see in Chicago “the primal power assuming self-expression amid nature’s impelling urge.” For Sullivan, although Chicago’s energy sprang ultimately from nature, nature expressed itself only when mortal men and women followed their own inspiration. Such people, he wrote, “had vision. What they saw was real, they saw it as destiny.” In the light of Sullivan’s romantic wonder, Chicago was less a place than a feeling: it was “all magnificent and wild: A crude extravaganza: An intoxicating rawness: A sense of big things to be done.”

For Sullivan, the wonder of Chicago was the wonder of nature transformed: the more nature had been reworked by an inspired human imagination, the more beautiful it became. It served as the vehicle and occasion for expressing human spirit. Nowhere was this more true than in cities, and in no city more than Chicago. Seen through Sullivan’s eyes, the great buildings rising beside “the boundless prairie and the mighty lake” were the stuff less of brick and mortar than of visions and dreams. Imagination far more than nature had made their creation possible, and so their conquest of Chicago’s skyline represented the triumph of “the crudest, rawest, most savagely ambitious dreamers and would-be doers in the world.” Sullivan thought them and their creation wonderful, and their energy “made him tingle to be in the game.”

Garland and Sullivan describe the same city, but from opposite directions. By the end of the nineteenth century, those who visited Chicago had at least two general views about how “natural” or “unnatural” the city might be. For those like Garland who feared Chicago, nature became the symbol of a nonhuman creation damaged and endangered by the city’s growth. For those like Sullivan who loved the city, nature became the nonhuman power which had called this place into being and enabled its heroic inhabitants to perform their extraordinary feats. Whichever perspective one held, Chicago acquired special significance, for few other American places seemed to raise so strong a question about the city’s special relationship to nature.

The writer who best captured this paradoxical sense of a city within and without nature was probably Robert Herrick. “Chicago,” he wrote in his 1898 novel, The Gospel of Freedom, “is an instance of a successful, contemptuous disregard of nature by man.” The city at its founding, he argued, had none of the natural advantages found in great cities elsewhere around the world: built in the midst of a great level swamp, it had
no fertile valleys, no great harbors, no broad rivers. Instead, its creation depended solely on the force of human will. “Man,” Herrick wrote, “must make all”—buildings, streets, even the green plants—“for left to herself nature merely hides the plain with a kind of brown scab.” 27 Where nature offered such feeble support to human endeavor, the triumph of Sullivan’s “dreamers and would-be doers” became all the more extraordinary.

Carrying his readers on the same railroad journey from outskirts to city center that Hamlin Garland and others had experienced so negatively, Herrick reveled in the urban growth one could see beneath the “pall of dull smoke.” First came the plank walks, drainage ditches, frame houses, and electric wires that marked “the advancing lines of blocks” that were “the Chicago of the future.” Here visionaries were still pursuing the metropolitan destiny which Sullivan had seen just after the fire. Then came the boulevards, the green parks, and the great houses to which the wealthy could retreat when they wished to catch their breaths in the clear air beside the lake. And when the train pulled into its station, after passing through a landscape that had become “hotter and fiercer mile by mile,” the traveler stepped out into the heart of a great commercial and industrial city, where the horizon vanished altogether behind skyscrapers and darkened air. 28

Like Garland, Herrick had carried his readers into the heart of darkness, but with a much more ironic moral at journey’s end. Here nature had no place, having become at last what Emerson had once called the mere “double of the man.” 29 In a remarkable passage, Herrick showed just how far a writer could go in proclaiming the city’s liberation from the natural world:

Life spins there; man there is handling existence as you knead bread in a pan. The city is made of man; that is the last word to say of it. Brazen, unequal, like all man’s works, it stands a stupendous piece of blasphemy against nature. Once within its circle, the heart must forget that the earth is beautiful. “Go to,” man boasts, “our fathers lived in the fear of nature; we will build a city where men and women in their passions shall be the beginning and end. Man is enough for man.” 30

Herrick’s vision, for all its apparent exuberance, was darker than Sullivan’s. He had little doubt that Chicago had in fact freed itself from nature, and he shared Sullivan’s passion for the human achievement the city represented. His excitement in describing the triumph over nature was quite genuine. But his language also suggests a deeper ambivalence. Herrick felt the same disorientation that other travelers experienced as they watched the Illinois prairies give way to railroad yards and slaughter-
houses. He too choked on the city’s “stale air and the filth,” and although he might imagine hearts that could “forget that the earth is beautiful,” his own could not. His soliloquy on behalf of the unnatural city reflects his own foreboding at every turn.31

Moreover, Herrick’s claim that Chicago was “made of man” rings hollow, for real women and real men were no more present in the city he described than real nature. Individual people and their real landscapes had dissolved into that favorite device of literary naturalism, the abstract dichotomy between man and nature.32 In an opposition that was far more ideological than real, man was masculine, singular, active, and all-controlling, while nature was feminine, singular, passive, and ever more controlled. Their relationship was larger than life, played out upon a landscape of heroic mythology. Vast forces created and moved through the city, but they were the work of “man,” not individual people. The city, no more than a flood or a storm in the wilderness, could hardly be called the creation of particular men and women—save perhaps for the bourgeois captains of industry with whom this image of “man” was most closely identified. If nature had been exorcised to create Herrick’s mythic city, so had history and its human actors. For so human a place, the city had surprisingly few people, and that too characterized this genre of antinaturalistic urban description.

Herrick’s Chicago is a curiously disembodied place, isolated from its natural landscape much as its inhabitants are isolated from each other. One of his characters says of Chicago, “When you are in it, you are cut off by a vacuum, as it were, from the surrounding world. You can’t see outside, and you hear the voices of the others only faintly.”33 Off to the east, Lake Michigan sends out its quiet message of natural beauty at every instant, even though few bother to observe it “shifting, changing, gathering light to itself, playing out the panorama of nature close at hand for the unheeding benefit of this creature, man.”34 For some of Herrick’s Chicagoans, the separation from nature and the rest of the world offers the very feeling Louis Sullivan had embraced so enthusiastically—of liberation, of freedom from the “fear of nature,” of being able to realize big dreams without the constraints of natural limits or close community. Men and women could be on their own in the city and make as much or as little of their talents as they wished or were able.

But such freedom was also a kind of prison, a retreat from the sources of value that gave human life a larger meaning: closeness to neighbors, a sense of rootedness in the soil, a feeling of belonging, faith in something larger than the self or the merely human. In the city, even amid all the crowds and the human artifacts, one stood curiously alone. At the end of Herrick’s novel, his central female character decides not to marry an artist
who embraced this vision of urban freedom in all its sterility. "You have abandoned your own people," she tells him; "you have sneered at your own land. And what is worse than all, you have failed—to add one beautiful thing to this sore old world!" She had nearly followed him in a behavior which mimicked that of the city: "You have taught me," she says, "to climb the same desolate hill where you have perched yourself. I have my freedom—I am alone now—but it would be better for me to be dead. . . ." Here was a moral for the city itself. In Herrick's Chicago, by taking dominion so completely over servile nature, humanity had declared its freedom but lost its birthright: to see human passions as the beginning and end of existence was to blaspheme against creation and humanity itself. To see one's world as a self-created place opened the doorway to heroic achievement, but finally denied any other Creator, be it Nature or God.

Herrick's dark praise for Chicago's conquest of nature carries me back to my own youthful revulsion at the city. As I read him, I remember my fervent belief that the people of the city had indeed cast aside nature in favor of a wholly human creation, apparently indifferent to the ugliness they created in so doing. All these earlier visitors to Chicago had made the same journey, from a rural landscape of prairies, cornfields, and pastures to the grid of city streets, the soaring buildings of the downtown, and the dark cloud of coal smoke hanging over all like a sentry. And yet each traveler could still experience the symbolic endpoints of the journey quite differently. My own childish passage from rural beauty to urban ugliness was matched by a multitude of other possible journeys: from pastoral simplicity to cosmopolitan sophistication, from rural bondage to urban freedom, from purity to corruption, from childhood to adulthood, from past to future. Each possible journey forms a powerful narrative trajectory, a compelling token of the divided world we inhabit—and yet each also reproduces that divided world. All these rural-urban passages share one underlying assumption which is itself deeply problematic. They all assume that city and country are separate and opposing worlds, that their divisions far outweigh their connections. And so all reinforce our widely held conviction that people can somehow build a world for themselves apart from nature.

Such beliefs are deeply embedded in Western thought. We learned our city-country dichotomy from the nineteenth-century Romantics, who learned it in turn from pastoral poets stretching back to Virgil. From these traditions, we discover how to make country–city journeys of the sort I have been describing, journeys which present themselves as a passage between alien worlds. On the one hand, our willingness to see country and city as separate, even opposite, is our most powerful reason
for agreeing with Herrick that civilized humanity has been able to escape the bonds of earth. We "moderns" believe, even in a postmodern age, that we have the power to control the earth, despite our deep ambivalence about whether we know how to exercise that power wisely. On the other hand, our nostalgia for the more "natural" world of an earlier time when we were not so powerful, when the human landscape did not seem so omnipresent, encourages us to seek refuge in pastoral or wilderness landscapes that seem as yet unscarred by human action. Convinced of our human omnipotence, we can imagine nature retreating to small islands—"preserves"—in the midst of a landscape which otherwise belongs to us. And therein lies our dilemma: however we may feel about the urban world which is the most visible symbol of our human power—whether we celebrate the city or revile it, whether we wish to "control" nature or "preserve" it—we unconsciously affirm our belief that we ourselves are unnatural. Nature is the place where we are not.

The oddity of this belief becomes most evident when we try to apply it to an actual place and time in history. At what moment, exactly, did the city of Chicago cease to be part of nature? Even to ask the question is to suggest its absurdity. Herrick's literary conceit—that Chicago was "made of man," "a stupendous piece of blasphemy against nature"—becomes meaningless as soon as one tries to look past the city's smoky horizon to see Chicago in its proper landscape. The journey that carried so many travelers into the city also carried them out again, and in that exchange of things urban for things rural lies a deeper truth about the country and the city. The two can exist only in each other's presence. Their isolation is an illusion, for the world of civilized humanity is very nearly created in the continuing moment of their encounter. They need each other, just as they need the larger natural world which sustains them both.

The urban-rural, human-natural dichotomy blinds us to the deeper unity beneath our own divided perceptions. If we concentrate our attention solely upon the city, seeing in it the ultimate symbol of "man's" conquest of "nature," we miss the extent to which the city's inhabitants continue to rely as much on the nonhuman world as they do on each other. We lose sight of the men and women whose many lives and relationships—in city or country, in factory or field, in workshop or counting-house—cannot express themselves in so simple an image as singular man conquering singular nature. By forgetting those people and their history, we also wall ourselves off from the broader ecosystems which contain our urban homes. Deep ecology to the contrary, we cannot solve this dilemma by seeking permanent escape from the city in a "wild" nature untouched by human hands, for such an escape requires us to build the same artificial mental wall between nature and un-nature. We fail to see that our own
flight from “the city” creates “the wild” as its symbolic opposite and pulls that seemingly most natural of places into our own cultural orbit. We alter it with our presence, and even with the ways we think about it. Just as our own lives continue to be embedded in a web of natural relationships, nothing in nature remains untouched by the web of human relationships that constitute our common history. And in that fact lies the measure of our moral responsibility for each other and for the world, whether urban or rural, human or natural. We are in this together.

However we draw the boundary between the abstraction called city and the abstraction called country, we must still understand that all people, rural or urban, share with each other and with all living and unliving things a single earthly home which we identify as the abstraction called nature. Recognizing nature in the city, where our language itself has taught us to believe nature no longer exists, challenges our ability to see the world clearly—but to miss the city’s relation to nature and the country is in fact to miss much of what the city is. In the words of the landscape architect Anne Spiri, “The city is a granite garden, composed of many smaller gardens, set in a garden world. . . . The city is part of nature.”

One might only add that if the urban garden is part of nature, then so are its gardeners. A city’s history must also be the history of its human countryside, and of the natural world within which city and country are both located. We cannot understand the urban history of Chicago apart from the natural history of the vast North American region to which it became connected: Nature’s Metropolis and the Great West are in fact different labels for a single region and the relationships that defined it. By erasing the false boundary between them, we can begin to recover their common past.
Expanding the Boundaries of Justice in Urban Greening Scholarship: Toward an Emancipatory, Antisubordination, Intersectional, and Relational Approach

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Supported by a large body of scholarship, it is increasingly orthodox practice for cities to deploy urban greening interventions to address diverse socioenvironmental challenges, from protecting urban ecosystems to enhancing built environments and climate resilience or improving health outcomes. In this article, we expand the theoretical boundaries used to challenge this growing orthodoxy by laying out a nuanced framework that advances critical urban environmental justice scholarship. Beginning from the now well-supported assumption that urban greening is a deeply political project often framed by technocratic principles and promotional claims that this project will result in more just and prosperous cities, we identify existing contributions and limits when examining urban green inequities through the traditional lenses of distributional, recognition, and procedural justice. We then advocate for and lay out a different analytical framework for analyzing justice in urban greening. We argue that new research must uncover how persistent domination and subordination prevent green interventions from becoming an emancipatory antisubordination, intersectional, and relational project that considers the needs, identities, and everyday lives of marginalized groups. Finally, we illustrate our framework’s usefulness by applying it to the analysis of urban residents’ (lack of) access to urban greening and by operationalizing it for two different planning and policy domains: (1) greening for well-being, care, and health and (2) greening for recreation and play. This final analysis serves to provide critical questions and strategies that can hopefully guide new urban green planning and practice approaches. Key Words: critical environmental justice, emancipatory greening, green infrastructure, nature in the city, urban greening.

Annals of the American Association of Geographers, 0(0) 2020, pp. 1–27 © 2020 by American Association of Geographers
Initial submission, July 2019; revised submission, November 2019; final acceptance, January 2020
Published by Taylor & Francis, LLC.
Large cities worldwide are increasingly deploying urban greening interventions to address socio-environmental and health challenges and harness widespread benefits for citizens, industries, and investors, while protecting existing urban ecosystems, resources, environmentally or climate-sensitive areas, and built infrastructure and settlements (Connolly et al. 2018; Wachsmuth and Angelo 2018). We define urban greening interventions as small- or large-scale nature-based infrastructure and amenities such as parks, municipal or community gardens, greenbelts and greenways, rain gardens and bioswales, green roofs and walls, green streets and alleys, or restored waterways. In the United States alone, some of these larger projects include the BeltLine green ring in Atlanta, the Rose Kennedy Greenway in Boston, the 606 trail in Chicago, the Trinity River Corridor redevelopment in Dallas, or the Portland Riverbanks Project for park restoration or creation. In Europe, this greening is illustrated by Lyon’s Riverbanks restoration or Rotterdam’s Delta plan and Tidal Park program. In general, all projects embody the cleanup or restoration of degraded, abandoned, or underused—postindustrial or not—urban landscapes or gray infrastructure (i.e., highways, bridges, railways) and their transformation into green, nature-centered projects (sometimes paired with gray, high-tech environmental strategies) that redefine their purpose and the overall vision for an area (Anguelovski, Connolly, and Brand 2018; Wachsmuth and Angelo 2018). Cities also deploy smaller scale individual greening through green infrastructure projects (i.e., green stormwater infrastructure management) such as those in the Green City Clean Waters program in Philadelphia.

Many urban greening interventions are further supported or encouraged by policy and research schemes such as the U.S. Environmental Protection Agency’s Green Infrastructure program, the urban green space and public health research agenda of the U.S. Forest Service, the 2013 European Union Strategy on Green Infrastructure, the United Nations Sustainable Development Goal 11 (To make cities inclusive, safe, resilient and sustainable), and the European Union’s Horizon 2020 Research and Innovation policy agenda on Nature-Based Solutions and Re-Naturing Cities, to name a few. Although those schemes promote city efforts to experiment with and replicate urban greening in neighborhoods throughout a city, few of them begin with an equity lens and include concrete measures for ensuring that greening solutions benefit all residents and, in particular, residents and communities who are historically vulnerable to environmental racism, displacement, or both. For the most part, there is an implicit assumption of “green” trickle-down effects spreading to benefit all.

Urban greening interventions are indeed increasingly underpinned by an often unquestioned
planning orthodoxy and moral imperative related to the green, resilient, smart, and sustainable city (Kaika 2017; Anguelovski, Connolly, and Brand 2018; Connolly et al. 2018; Wachsmuth and Angelo 2018; Connolly 2019), which embraces a discourse of unproblematic economic, ecological, social, and health cobenefits from urban greening (Wolch, Byrne, and Newell 2014; Anguelovski, Connolly, and Brand 2018). As some scholars have highlighted, such discourses are generating powerful, widely adopted justifications for greening projects and are accompanied by green branding tools across cities in both the Global North and South. Elected officials and investors tend, in fact, to capitalize on research to ensure that greening projects support an urban brand that sells their city as livable, healthy, environmentally attractive, and amenable for highly trained employees (Garcia Lamarca et al. 2019). Therefore, greening can be an essential tool in the struggle for development and capital accumulation in urban contexts (Checker 2011; Bryson 2013; Gould and Lewis 2017).

Thus, in this article, our starting assumption is that urban greening is a deeply political project grounded in technocratic principles and the naive apolitical assumption that greening will, unassisted, result in both more just and prosperous cities. Here, even if green practitioners and managers have the best social intentions, the broader urban greening orthodoxy leaves aside urban tensions, contradictions, and trade-offs between different social groups (i.e., Quastel 2009), including the inequities produced by such orthodoxy. Through an examination of urban greening projects, critical research has already identified concurrent processes of green devaluation, rent gap, and new value creation (Dillon 2014); green dispossession and accumulation (Safransky 2014); green exclusion and privilege (Anguelovski, Connolly, Garcia Lamarca, et al. 2019); and green gentrification and displacement (Pearsall 2012)—all of them recent manifestations of green environmental injustices. Green gentrification, for example, refers to the adoption of urban green agendas that lead or contribute to the displacement of the most socially vulnerable residents despite interventions being sold as providing universal benefits (Dooling 2009; Gould and Lewis 2017). Whereas green gentrification is often eventually produced by other urban economic and social dynamics, spatial and quantitative studies of green gentrification are able to parse out the role that greening itself plays, at the very least, in accelerating or increasing gentrification (Anguelovski, Connolly, and Brand 2018; Rigolon and Németh 2019).

These processes of green environmental injustices illustrate (as other environmental injustices) a negative, disproportionate impact for minority and low-income residents. Historically, those residents have already suffered from greater environmental contamination and burdens; have had less access to green space and livable, healthy neighborhoods (Boone et al. 2009; Grove et al. 2018); and fought for the transformation of their long-term abandoned neighborhoods into green havens of environmental justice (Agyeman 2013; Anguelovski 2014; Agyeman et al. 2016; Anguelovski, Connolly, Garcia Lamarca, et al. 2019). Now, many of them witness the greening and rebranding of their neighborhoods for socially and racially privileged residents.

Our aim in this article is to further examine existing research on those topics and offer a new theoretical approach for critical research on justice in urban greening. Although a rich body of studies scrutinizes the (in)equitable dimensions of urban greening—especially scholarship in urban ecology, economics, or public health—it only partially theorizes how equity and justice play out in the process of devising and implementing green interventions. Notwithstanding some exceptions (Dillon 2014; Safransky 2014; Anguelovski, Connolly, Garcia Lamarca, et al. 2019; Cole et al. 2019), much of this literature examines green projects in a quite positivist manner and identifies inequities by placing them in three “boxes”: justice as distribution, justice as recognition, and justice as participation. There are, however, invisible or situated experiences and everyday practices of urban green injustices that require greater attention. Thus, we draw here on what Pellow (2016) recently termed critical environmental justice studies and respond to his (and others’) call for bringing together various social categories of difference (i.e., race, class, gender; Cho, Crenshaw, and McCall 2013) and for examining different forms of social inequality and power. We thus ask this: What new imaginations and practices are possible and necessary to advance just urban greening as a scholarly field and planning practice, and what is the role of academic scholarship in pursuing more equitable greening?

Our central argument is that scholarly examinations of justice in urban greening require a radical
scholarly practice of uncovering how persistent domination and subordination in urban greening—and urban development more generally—prevent green interventions from being an emancipatory, antisubordination, intersectional, and relational project that better consider the needs, identities, and everyday lives of marginalized groups. In return, we further argue that urban planning can support and strengthen the achievement of justice in urban greening only if informed by and following closely such principles.

In the next sections, we first highlight the current green orthodoxy based on findings from multiple academic fields on the benefits of urban greening. This initial review is based on an extensive examination of the literature in urban environmental planning, urban geography, urban greening and ecosystems, real estate economics, and health studies and serves to anchor the greening “turn” in studies examining (and highlighting) the benefits of green planning practices. Then we parse out the types of inequities that scholars have identified when studying urban greening—most of them using the traditional (but limited) trilogy of distributional, recognition, and procedural justice—and identify shortcomings in this research. Such analysis serves to connect urban greening practices with the research offering a more critical outlook at this green orthodoxy. Next, we provide new language and analytical pathways to fully theorize issues of justice relative to urban greening. We consider here that there is strong potential to widen and strengthen these critical approaches beyond the three traditional dimensions of environmental justice, and we develop our main argument around emancipatory, antisubordination, intersectional, and relational urban greening. Last, we elaborate on just urban greening in the context of a specific urban greening planning practice, that of providing increased access to green amenities, and offer specific examples within this expanded theoretical proposition. This section also serves to provide critical questions and strategies that can hopefully guide new green planning and practice approaches.

The Benefits of Urban Greening in a Nutshell

This section presents a succinct three-part typology of benefits from urban greening identified in the literature according to (1) economic development, (2) ecological benefits, and (3) health benefits. Such benefits are studied within different and often separated academic fields and highlight the multiple and broader values that greening projects seem to bring to cities, their environment, and their residents. We do not aim here to build a critique of the specific claims and arguments of this literature but rather present the broader scholarly context in which our article is grounded. This critical review helps to support the argument around the existence of an orthodoxy, positivist green discourse and practice in cities and makes way for the more critical approaches we highlight later.

Economic Development and Property Values

From an economic development standpoint, green or smart growth strategies (Doolling 2009; Quastel 2009; De Lara 2018) underpin and promise economic growth and neighborhood revitalization through real estate development, business creation (Doolling 2009; Quastel 2009), and tourism expansion. New green spaces and parks tend to make neighborhoods more desirable for potential residents and real estate investment, eventually contributing to increases in property values (Immergluck 2009; Sander and Polasky 2009; Conway et al. 2010; Brander and Coe 2011).

Research using hedonic pricing methods has demonstrated that in a short amount of time the construction of urban green infrastructure positively influences property values (Li, Saphores, and Gillespie 2015) and that large urban parks together with the percentage of green space in a 500 m radius around residential properties contribute to increased housing prices (Czembrowski and Kronenberg 2016). In Atlanta, for instance, housing values have increased by 18 percent and 27 percent between 2011 and 2015 for homes located within 0.8 km of the Atlanta’s greenbelt, known as the Beltline (Immergluck and Balan 2018).

The conversion of vacant lots into green spaces has been particularly valuable for the increase in property values in moderately depressed neighborhoods (Heckert and Mennis 2012), by making the neighborhood more attractive to current and future residents. Similarly, brownfield regeneration, the cleanup and removal of contaminated sites, enhances the desirability of a neighborhood and attracts higher
income residents (Gamper-Rabindran, Mastromonaco, and Timmins 2011; Gamper-Rabindran and Timmins 2011). This scholarship has a strong influence on greening policies and generally frames neighborhood revitalization and increased property prices positively, overlooking the burdens for socially, economically, and racially underprivileged population groups (Immerglück and Balan 2018; Ł aszkiewicz, Czembrowski, and Kronenberg 2019).

Ecosystem, Ecological, and Climate Benefits

With regard to ecosystem and ecological benefits, urban ecology studies have highlighted the widespread positive linkage between urban greening and more diverse ecosystem services in urban areas (Elmqvist, Gómez-Baggettun, and Langemeyer 2016), including carbon sequestration, removal of some air pollutants (Baró et al. 2014), or natural flood prevention and mitigation (Gómez-Baggettun and Barton 2013). Food production in urban gardens has also been associated with lower job stress (Elmqvist, Gómez-Baggettun, and Langemeyer 2016), recreational opportunities, environmental learning, tighter social ties, stronger place attachment (Andersson et al. 2015), and strengthened civic networks and social capital (Connolly et al. 2018). Only a few scholars have recently started to recognize the need to—at least—consider distributional effects of greening with regard to ecosystem services in theory (Haase et al. 2017; Andersson et al. 2019) and practice.

Urban greening projects have also been studied as a central element in the management and mitigation of certain environmental and climate risks in urban environments (Meerow and Newell 2017), such as stormwater management and flooding mitigation (Liu and Jensen 2018), mudslides, or landslides (Carmin et al. 2012; Anguelovski, Irazábal, et al. 2019). For example, green infrastructure such as greenbelts (Anguelovski, Irazábal, et al. 2019), rain gardens, permeable pavements, and green roofs

Table 1. Unpacking traditional approaches to understanding justice in urban greening

<table>
<thead>
<tr>
<th>Traditional types of justice</th>
<th>Injustices in urban greening</th>
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| Distributional justice      | • Inability of greening projects to address past inequities in green access and historical environmental justice concerns  
• Vulnerability to and presence of green gentrification and climate gentrification  
• Health benefits of greening inequitably distributed and undermined by physical and sociocultural displacement threats |
| Interactional or recognition justice | • Privileging of large green infrastructure and other flagship projects attracting higher income and socially privileged residents and investors into marginalized geographies  
• Invisibilization of complex socionatures and past experiences of historically marginalized groups in regard to urban greening  
• Inability of urban greening planners and decision makers to recognize structural inequalities in access to high-quality, livable neighborhoods and address historic green and housing segregation |
| Procedural and participatory justice | • Exclusion of input and decision-making power by historically marginalized groups in the planning, design, and management of greening and of ecosystem service protection interventions  
• Tabula rasa of neighborhood histories, identities, and experiences for historically marginalized groups  
• Challenge of creating true participation with traditional planning tools and guaranteeing intersectoral collaboration |
enhance urban nature and natural processes and protect residents against climate impacts such as urban heat island or stormwater flooding (Zólczi et al. 2016; Anguelovski, Connolly, and Brand 2018). Relatedly, urban greening can lower investment and running costs compared with traditional gray systems (Ahern 2013). For this body of research, greening is often hailed as a “no-regrets solution” (Mees and Driessen 2011).

Health and Well-Being Benefits

Last, greening urban neighborhoods—and exposure to green space in particular—is associated with a variety of positive physical and mental health outcomes, including self-perceived general health, psychological well-being, anxiety and depression, reduced visits to psychologists and psychiatrists, sleeping quality, reduced use of antidepressants, sleeping and sedatives intake, more vitality (Triguero-Mas et al. 2017), lower somatization levels (Triguero-Mas et al. 2017), decreased cognitive decline (de Keijzer et al. 2018), and lower mortality risk. Environmental epidemiology also shows that green spaces are particularly beneficial to children, because their cognitive development is positively shaped by exposure to green space (Dadvand et al. 2014). Although important, the study of health and mental well-being benefits of urban greening often obscures potentially detrimental impacts of greening on the health of some groups, because results—often from environmental epidemiology—are typically not examined within neighborhoods’ broader political and social contexts and rarely bring in social epidemiology considerations (Cole, Shokry, et al. 2017).

Parsing out Injustices in Urban Greening: The Traditional Approach and Its Limits

The wide range of benefits identified in these three areas of inquiry rightfully justifies the discourse around urban greening interventions and supports the high level of policy traction that these projects have achieved. The multiple cobenefits are not exempt, however, from processes that reproduce or exacerbate injustice. If both urban greening practitioners and scholars acritically argue for the benefits of greening and overlook the sociospatial inequities intertwined with and produced from urban greening, they risk underplaying potential costs and trade-offs and, consequently, undermine the cause of creating environmentally sustainable and just cities.

In response, in this section (also see Table 1), we further elaborate on the ways in which the cobenefits of urban greening are increasingly wrapped up in processes that generate urban injustice. We highlight the framework already present in environmental justice and political ecology scholarship, which traditionally characterizes inequities by assessing urban greening projects through distributional, recognition, and procedural justice lenses (Schlosberg 2013). Although this next section serves as an important comprehensive baseline to identify the broad range of urban greening injustices and their manifestations, it also pinpoints key limitations within this established analysis of justice and greening, thus preluding our later theoretical proposals.

Distributional Justice Challenges in Urban Greening

Studies of distributional challenges assess whether green interventions address historic social, racial, or ethnic inequities in the provision of green spaces and whether those interventions avoid displacement and new negative green, ecological, climate, and health effects.

Ample research has revealed that green spaces and amenities in lower income neighborhoods have historically been undermaintained, of poorer quality, sparse, and smaller in comparison with wealthier neighborhoods (Boone et al. 2009; Dahmann et al. 2010; Grove et al. 2018)—with some notable exceptions, such as Barcelona’s distribution of street trees, for instance (Baró et al. 2019). Most health studies also identify a trend wherein the health of some groups is differently affected by exposure to green space, including gender (de Keijzer et al. 2018), age groups (Triguero-Mas et al. 2017), and ethnicities (Dadvand et al. 2014).

More recently, critical urban research in real estate economics and urban planning highlights that many long-term residents are vulnerable to displacement from green gentrification due to increased housing costs and are being displaced by wealthier, whiter, and more educated residents (Dooling 2009; Checker 2011; Pearsall 2012; Gould and Lewis 2017; Immergluck and Balan 2018). As property values
increase, long-term working-class residents are faced with increased rental prices as well as property tax or maintenance cost spikes associated with living in greener, higher value neighborhoods (Anguelovski, Connolly, Garcia Lamarca, et al. 2019).

With regard to urban climate adaptation planning, nascent research on distributional inequities shows that the siting of green interventions—such as stormwater management infrastructure—overlooks the socioenvironmental vulnerability and potential displacement of lower-income and minority neighborhoods and privileges investments in higher income but less vulnerable neighborhoods (Anguelovski et al. 2016; Finewood, Matsler, and Zivkovich 2019; Shokry, Connolly, and Anguelovski 2020). This siting might amplify climate gentrification trends and socioeconomic vulnerability, creating newly spatialized injustice where more vulnerable residents might have to move to less protected and yet more socially and ecologically vulnerable neighborhoods (Sovacool, Linnér, and Goodsie 2015; Anguelovski et al. 2016; Haase et al. 2017; Keenan, Hill, and Gumber 2018).

Despite this mounting evidence on distributional inequities in greening, there is a lack of studies analyzing the scope and magnitude of distributional inequities within and across cities, the specific characteristics of urban greening interventions driving these inequities (e.g., type, design, size), the types of urban development patterns modifying these relationships (e.g., growing vs. shrinking cities), other parallel factors that might contribute to gentrification (e.g., new real estate development, lower crime rate), or protective measures against green gentrification and displacement (Anguelovski et al. 2019). In relation to climate planning and climate justice, future quantitative, spatial, and qualitative analyses (e.g., this novel study approach and design by Shokry, Connolly, and Anguelovski 2020) are needed to parse out how long-term residents adapt to the sociospatial changes that reconfigure their vulnerability and ability to withstand ecological and social insecurities. Put differently, concurring and compounding insecurities, vulnerabilities, and environmental injustices from climate risks, poor or unaffordable housing, food, and transportation—and responses to them—must be better understood (Ranganathan and Bratman 2019).

In public health, although some studies have started to offer a more contextualized understanding of how the presence of green space is intertwined with complex socioeconomic and political environments, and what this complex reality ultimately means for health outcomes among residents and for distributional health inequities (Cole, Garcia Lamarca, et al. 2017; Anguelovski, Triguero-Mas, et al. 2019), there is still much space to further explore these dynamics. There is a need to further examine how neighborhood changes—gentrification in particular—might modify, at baseline and over time, the equitable distribution of health and wider well-being benefits in relationship to green space (Cole et al. 2019).

Recognition Justice Challenges in Urban Greening

Urban greening can result in different expressions of distributional inequities but can also be a product of recognition justice shortfalls; that is, a lack of attention to the distinct values, identities, needs, and preferences that certain social groups assign to greening. As urban greening interventions increasingly mobilize financial schemes such as green bonds or green tax increment financing (Knuth 2016), recent research shows that they risk privileging flashy green interventions attractive to investors, such as greenways, rail-to-trail projects, or waterfront conversions (Rosol 2013), rather than interventions conceived of by historically marginalized groups with the support of nonprofits, activist groups, foundations, or progressive public agencies (Anguelovski 2014). Such flashy interventions risk creating new sociocultural invisibilization and silencing minority socionatures; that is, the process by which people construct nature both discursively and materially as a human–nature outcome and connection. For instance, some green climate adaptation infrastructures such as greenbelts have already been shown to erase the multiple small, vernacular, community-driven resources and activities or ecosystem protection initiatives (Anguelovski, Irazábal, et al. 2019).

Additionally, in relation to understanding ecosystem services for residents, the values and perceptions over a given ecosystem might vary across scales and actors, and ecosystem services (and their protection or preservation) do not or might not benefit everybody equally (Corbera, Brown, and Adger 2007; Pascual et al. 2014). In cities, the vast majority of the literature on localized ecosystem services primarily focuses on spatial distributions
neglecting both socially differentiated needs as well as the uptake of benefits (Kremer et al. 2016). Questions considering accessibility, availability, and attractiveness of ecosystem-driven interventions are key to understanding the ecosystem values of urban greening projects (Biernacka and Kronenberg 2018; Langemeyer, Calcagni, and Baró 2018), yet remained underexamined. Little research has been done that considers how different social groups (e.g., female, elderly, children, low-income, and minority residents) differentially attach and articulate values, preferences, and needs regarding urban nature and ecosystem services. Temporal shifts of beneficiaries (e.g., due to gentrification) as well as shifting preferences and needs (e.g., due to aging societies or immigration) are also essential to consider.

**Procedural Justice Challenges in Urban Greening**

Finally, analyzing how justice plays out in urban greening means paying attention to questions of inclusion and exclusion in participation and decision making and further elaborating what procedural justice actually entails. Whereas urban planners and public officials tend to express—at least in public—the benefits of community- and dialogue-driven approaches in urban sustainability planning, research shows that residents often witness marginalization and dispossession (Safransky 2014). Local agendas can also be captured by the global penetration of the green city “projection,” in turn sidestepping important considerations related to how it is deployed (Anguelovski, Connolly, and Brand 2018; Wachsmuth and Angelo 2018). Green infrastructure approaches can also reproduce dominant gray approaches to environmental management (e.g., urban stormwater and wastewater)—and in return produce uneven landscapes—rather than allowing for more alternative and creative forms of urban greening to emerge (Finewood 2016).

Participatory planning processes can also serve to capture or coopt the demands or achievements of environmental justice groups mobilizing for environmental cleanup and restoration, as Checker’s (2011) study of New York City illustrates. Further, as debates in urban planning illustrate (see Fainstein 2010), the clear line between participatory processes and increased justice is not direct, even when inclusion is intentional. Even when justice-driven environmental nongovernmental organizations lead the process of developing green infrastructure, this process could result in a fragmented effort that can leave important questions related to housing affordability aside (Rigolon and Németh 2018a). Many instances of civic participation also reveal that facilitators or designers of new green infrastructure or of climate adaptation interventions often do not allow for interventions by groups or individuals having experienced past violence, insecurity, or crime within a specific territory (Anguelovski et al. 2016; Hardy, Milligan, and Heynen 2017). Finally, even if initially inclusive or initiated by historically marginalized groups, urban greening can become led by residents from higher socioeconomic status and educational backgrounds (Connolly et al. 2013; Maantay and Maroko 2018). For example, some spaces of environmental refuge such as community gardens are now “practiced” and “captured” by gentrifiers (Anguelovski 2015).

**Expanding the Boundaries of Justice and Equity in Urban Greening**

Carefully parsing out how different dimensions of justice play out in urban greening interventions is important and helps to analyze and categorize injustices into different types and instances. Such analysis based on the compartmentalized tridimensional account of justice, on which most scholarship examining green inequities has drawn to date, circumscribes opportunities for further theorizing justice and equity in urban greening, however. In our view, it only allows for a limited view of the ways in which residents experience (in)justice—and therefore circumscribes our understanding of justice in urban greening and possibilities to transfer knowledge to activists and planners. There is much space (and great need) for research examining which knowledges, practices, or testimonies are allowed to surface and are legitimated—without being captured or coopted along the way—and which ones remain overlooked or pushed aside. 

Therefore, we propose to further elaborate on the theoretical and empirical boundaries of urban greening and justice scholarship. We do not propose here to expand the framework of justice as a trilogy but rather to move away from it toward a more fluid model for examining, analyzing, and addressing justice and equity in urban greening. In part, this
model grows from our collective observation that the established justice framework can be restrictive in terms of its ability to express conditions as experienced by urban residents. We ground our movement away from these restrictions in two connected analytical goals: (1) uncovering material and immaterial power and (2) advancing new principles for equity in urban greening.

**Uncovering Material and Immaterial Power Structures within Urban Greening Practice**

Our first point is that planning and investment for urban greening tend to work both materially (through specific green infrastructures) and immaterially (through exposed urban green visions, projections, and discourses) in and through existing landscapes, redeveloping them into green and privileged utopias (Safransky 2014; Knuth 2016; Anguelovski, Connolly, and Brand 2018). In return, the material and immaterial (re)production of urban green space both ideologically and physically cordons off space within a green, sustainable, smart, resilient city narrative (Connolly 2019), eventually producing injustices for residents who are themselves ignored within the hegemony of urban greening. In this process, urban nature is a product and a resource tamed, transformed, re-created, financed, and regulated within a dominant market-centered ideology (Harvey 2007; Castree 2008; Knuth 2016) that (only) highlights all of the positive benefits and values of greening, as we described earlier.

Here, imaginaries (Castoriadis 1997)—in our case visions, discourses, or renderings for a greened neighborhood or nature-centered intervention—play a central, often overlooked, role in advancing this green praxis. Imaginaries articulate what accepted greening is, what it should be, and for which and whose value. In these “politics of imaginaries,” ongoing struggles unfold between actors holding or promoting different visions and imaginaries (Burnham et al. 2017; i.e., on the postindustrial green city, the smart growing green city, or the green resilient city). As these immaterial struggles produce winners and losers (Burnham et al. 2017; Cidell 2017), they later manifest in specific material, technological, resource, and infrastructure and influence guiding standards for new urban green interventions. It is in relationship to this process that we call for new theoretical and empirical developments.

In Medellin, for example, formal and manicured acceptable (immaterial) visions and (material) greening practices are pushed forward by city officials and planners. As the municipality articulates visions of growth control and climate resilience by creating a 72 km² greenbelt and beautifying low-income neighborhoods, it is turning their land into green landscapes of privilege and pleasure (Anguelovski, Irazábal, et al. 2019). In the process, the city is transforming community land into new, aesthetically controlled and ordered forms of nature and projecting this idealized image in official reports and news as the green, vibrant Medellín for middle and upper classes and for tourists. There are inherent layers of exclusivity here to which we feel we must call attention.

We also link the analysis of persistent or new imaginaries and discourses to a needed analysis of dilemmas and tensions brought about by urban greening and to historical linkages to processes of domination and geographical racism (Pulido 2017). When inner-city geographies of minority residents and people of color are “discovered” as valuable by planners, developers, and gentrifiers, residents and local environmental justice activists face seemingly irresolvable dilemmas of accepting new amenities versus risks of possible displacement (Checker 2011). In New Orleans, the tensions between government-led and resident-driven resilience planning highlight the challenges of building a green, resilient city in impoverished areas. When such areas, like the Lower Ninth Ward, are rebranded as resilience areas, questions about how greening might contribute to new rounds of displacement and invisibility are often obfuscated. Although design approaches outlined, for instance, in the Greater New Orleans Urban Water Plan, to address environmental vulnerability are laudable, there is insufficient discussion on the trade-offs emerging from a green infrastructure plan that deploys a vision focused on increasing the economic value of the land (Brand and Baxter 2020).

New green imaginaries around a future climate-protected, nature-restored, or green space-enhanced neighborhood might also end up erasing green spaces valued and cared for by long-term residents. As new green narratives claim urban areas as “in play” for development, they are also convenient tools for making invisible the historic production of racialized, underinvested, forgotten, contaminated landscapes, coopting ideas or advancing certain visions.
over others. The result is a process of green rent capture, by which greening adds economic and financial value to previously “invisible”—but often community-valued—spaces, such as informal gardens or community-based adaptation practices (Goodling, Green, and McClintock 2015). The temporal and geographic iterations and ongoing lives of environmental injustice are therefore conceivably at work in the narrowly focused and power-laden imaginaries of greening.

**Advancing New Principles for Equity in Urban Greening**

Second, we call for new transversal and fluid principles, a set of propositions and analytical tools that researchers working at the intersection of urban greening and equity should follow to more fully capture and challenge (in)justice in urban greening. These include antisubordination, intersectional, and relational greening (Table 2). These propositions aim to more fully conceptualize (in)justice in urban greening and subsequently facilitate planning for more equitable, emancipatory green interventions at different scales and temporalities.

**Principle 1: Emancipatory and Antisubordination Greening.** Pushing forward an analysis of justice in urban greening requires starting with the explicit recognition that durable categories of inequality continue to comprise part of systematic and asymmetrical structures of power and domination (Safransky 2014; Pulido 2017; Steil 2018), especially those referring to the colonial or colonized subject. It is also about recognizing that current urban development, in the United States in particular, is often imprinted and cemented by a legacy of settler colonialism, colonial social natural order, and segregationist practices (Grove et al. 2018; Simpson and Bagelman 2018) and dehumanization practices (Ranganathan and Bratman 2019). In Europe, this process is marked by the isolation, ghettoization, territorial stigmatization, advanced marginality, and increased legal targeting of immigrants along a race–class axis (Wacquant 2014).

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Here, our emphasis is on race and racism as the primary and ultimate predictor and indicator of unequal environmental inequities (Mohai and Saha 2015; Pulido 2017). As a “practice of abstraction, a death-dealing displacement of difference into hierarchies that organize relations within and between the planet’s sovereign political territories” (Gilmore 2002, 16), racism and race-based environmental inequalities are produced and reproduced over time, requiring the exposure of durable and adaptable racialized processes and racialized inequities in relationship to urban greening.

We also draw here on critiques of whiteness as a spatial practice of domination and subordination that “orients bodies in specific directions, affecting how they take up space,” even invisibly or unconsciously (Ahmed 2007, 150). We thus call for the interrogation of whiteness and white supremacy as a set of multiscaled and global geographical practices of domination (Bonds and Inwood 2016) and argue that discussions of urban greening must interrogate the logics of social, economic, political, and spatial organization that stem from and reinscribe white supremacy as a spatial epistemology and phenomenology (Ahmed 2007). Such interrogation will allow urban greening research to unpack the ways in which urban green orthodoxy might itself be extending these dominating practices and logics into new geographical formations.

Therefore, in our view, eventually dismantling asymmetrical and dynamic power structures in green planning practice and policy requires a more prioritized position for an antisubordination analytical approach and a recognition that equal citizenship (or equal, just geographical arrangements) cannot be realized in a context of pervasive social and racial stratification—in both the United States and Europe as well as in the Global South. This approach, which is situated much beyond questions of distribution or recognition justice, necessitates the transformation of those institutions and practices that reproduce the subordinate social status of oppressed groups (Balkin and Siegel 2003) and constrain them into ongoing and new oppression.

Adopting an antisubordination research approach to urban greening entails, first, privileging analyses of sustained, socially constructed categories of inequality and how they are produced geographically. It also requires recognizing the significance of institutional structures, spatial orderings, conscious discrimination, and unconscious bias or discrimination in shaping planning and development. It must, we argue, call out actions that exacerbate existing disparities and also prioritize those policies and design and development outcomes that seek to eradicate these inequalities as new greening agendas are introduced. Many green injustices are indeed reproduced and exercised within neighborhoods and on residents in a racialized and violent manner under the hegemony of color-blind advanced green capitalism and neoliberalism (Melamed 2006; Hardy, Milligan, and Heynen 2017). In Rio de Janeiro, for instance, the green upgrading of favelas is experienced by residents as iterative processes of securitization and restriction, which involve strategies such as environmental cleanup, public and green space redevelopment, property enclosure, and police violence that eventually control, coercively drive away, and erase Afro-Brazilians (Comelli, Anguelovski, and Chu 2018).

Second, transforming analytical practices means not only assessing whether certain projects prevent discrimination (negative rights) but also ensuring positive rights to the benefits of urban greening and to the broader capabilities that members of subordinated groups, like all individuals, need to thrive. In the context of urban greening, this means providing emancipatory liberating spaces at the intersection of land, resources, and nature and proposing new institutional arrangements, practices, and policies to make their control and use by marginalized groups secure and permanent. Here we suggest that solely enumerating indexes of blight and disinvestment (see Woods 2002) to make way for or justify urban greening provides a limited framework for liberatory spatial justice imaginations that can disrupt the ongoing “afterlives” lives of slavery (Harris 2016) or what McKittrick (2013) called “plantation futures.” Further, the procedural commitments to listening in participatory processes can also only go so far if not tied to liberating geographical formations. Processes alone do not guarantee just outcomes (Fainstein 2010). In Washington, D.C., for instance, a project such as the 11th Street Bridge Park is envisioned with new spatial arrangements (a community land trust) and an equitable development plan for long-term residents (Avni 2019), thus projecting more liberating and secure territories for African Americans.

Third, antisubordination and emancipatory rights in urban greening might even require reparative (or
restorative) justice lenses to assess the extent to which green interventions openly acknowledge and address histories and geographies of oppression and exclusion, both from urban greening and from the public spaces or streets surrounding green infrastructure. Some have recently called for green reparations for cities suffering from historic harm, such as legacy pollution, land dereliction, and institutional neglect in cities like Detroit or dense, gray urban development in post-Nazi and communist-divided places such as Berlin. Here, the development of healing green spaces can recognize wounds of the past while having restorative and reconciliating features (Draus et al. 2019; Anguelovski, 2014).

This justice lens is particularly salient in postconflict situations, in which exercising justice would include (1) offering amends for wrong and losses to injured groups in ways that can build equity and (2) addressing long-term green privilege through which dominant groups develop a sense of security, ensuring that the durable, increased valuation of the area benefits them.

Last, an antisubordination approach is closely connected to preventative justice, through uncovering practices that prevent or reduce the risk of possible future harm (Ashworth and Zedner 2014) and that recognize risks perceived by various social groups. Preventive justice is related, in part, to avoiding the criminalization of racialized and gendered behaviors that inform green design solutions and policies. For instance, this might include consideration, for the planning of a new park, of how different neighborhood groups are policed, coerced, or surveilled in public space (and how this still informs their imaginaries; Pellow 2016), which would then inform design and policy formation that address these concerns and experiences. It requires a resident-led place making rather than the criminalization of practices and livelihoods, as the Black Lives Matter movement in the United States denounces, for instance (Koh 2017).

**Principle 2: Intersectional Greening.** The second proposed principle, intersectional greening, refers to exploring the “vexed dynamics of difference and the solidarities of sameness in the context of antidiscrimination and social movement politics” (Cho, Crenshaw, and McCall 2013, 787), as related to environmental justice (Pellow 2016) and urban greening practice in particular, including gender, race, ethnicity, poverty, age, religion, and others (Parker 2016). In this regard, we call for urban greening and justice scholarship to examine how people (1) understand, sense, and live in spaces having multiple, concurring identities in place while being exposed to multiple environmental inequalities, injustices, and insecurities and (2) interpret them in different historic moments. In Barcelona, for example, working-class and minority residents from the Sant Pere–Santa Caterina neighborhood mobilized in the 2000s for a new green plaza—El Pou de la Figuera—that reflected the long-term history of their struggles against dumping, abandonment, real estate speculation, and tourification. In the Pou both immigrant and white working-class residents came together to defend the space and its history, conscious of the pervasive relations of combined domination (i.e., labor exploitation, migration) they had to endure in their fragile lives (Anguelovski 2014).

Here, academics must engage with people’s sense of place—especially that of invisible or neglected residents—which “materially and imaginatively situates historical and contemporary struggles against practices of domination and the difficult entanglements of racial encounter” (McKittrick 2011, 949). In both their critique and imaginary, these subaltern epistemologies relate to multiple life experiences and contexts (including education, access to living wage jobs, quality and safety of housing as related categories of access, opportunity, and security) and bring forward new institutional and geographic possibilities and new spatial configurations and organizations of bodies and practices (Woods 2017).

The geographical formations opened up in this recentering on invisibilized residents and their concurring identities and experiences also raise questions in the interim about what trade-offs must be made to protect spaces that serve as refuges for nondominant groups. For instance, the terrains of sidewalks, highway underpasses, degraded open spaces, or vacant lands become possible critical interfaces for making decisions about green infrastructure and the right to inhabit space. Urban greening research and practice can make important contributions to understanding the intersectional experiences at work in all public spaces and neighborhood spaces. For example, a recent study of Claiborne Avenue in New Orleans illustrates this space’s social and cultural meanings for Tremé, the adjacent historic black community. In the name of redressing the environmental harm
caused by the construction of the I-10 highway above it, the City of New Orleans has been selling a green vision of revival and reconquering for new urban residents. Yet, the black residents who have occupied these everyday spaces have remained invisible in top-down planning efforts and have seen their claim to space undermined (Brand 2015, 2018). At the same time, they are those whose bodies have become more policed in the context of post-Katrina reconstruction and resilience planning (Ansfield 2018).

**Principle 3: Relational Greening.** Last, we draw on feminist concepts such as relationality, calling for the examination of connections among sites, scales, and subjectivities to highlight “everyday life” that takes into account homes, plazas, neighborhoods, and workplaces and the possibility of challenging silences and violence, racialization, classism, and patriarchy in ways that politicize and rehumanize place–life relationships (Gilroy 2018; Ranganathan and Bratman 2019).

Such an approach helps us analyze distinct but connected patriarchal and racist causal factors, structural practices, and social relations in urban development (Parker 2016) and across relational geographies typically divided by political and jurisdictional boundaries. It thus allows for questioning what new institutional arrangements and policies can best support feminist and antiracist urban green justice. Relationality also allows for attending to past and ongoing sites and experiences of violence and the emotional, political, and social charges that they still hold in the advancement of new urban green futures.

Here, we also call for highlighting the issues and experiences of care and connection and of cultural recognition for residents in contact with urban greening (Ahmed 2017; Derickson 2018; Ranganathan and Bratman 2019). This approach resituates urban greening away from property or economic valuation, highlighting the relational values (Himes and Muraca 2018) embedded in people’s interactions with nature, also noting that individualizing solutions for certain groups poses its own set of tensions and risks. Feminist theory also allows for an approach more attuned to the ways in which life experiences disappear in a heteronormative, sexist, and racist society. It names and critiques these disappearances, creating an analytical and political structure to elevate and enact feminist spatial orientations and practices through urban strategies (Ahmed 2017).

This principle is also connected to examining relational values in urban nature; that is, how value is expressed and realized differently by people, especially as responding to relationships and responsibilities to things, including nature and the environment (Finney 2014; Woods 2017). To paraphrase Derickson (2018), researchers cannot understand power in urban greening—and resistances to it—without allowing for discursive space for others (other ways of being, feeling, living, or knowing spaces) and for others to formulate responses—including political responses—as acts of “rupture” against or for a different type of greening. In Dublin, recent research shows that working-class young mothers from The Liberties neighborhood mobilized through the 2010s for the construction of a new park—Weaver Park—that reflected a differentiated connection to and use of green spaces by the elderly, women, children, and youth, which led the construction of different subareas with different natural elements within the park, where users could use and care for the space in different ways (Kotsila and Baró 2018).

**Putting Principles in Practice for Analyzing Just Access to Urban Green Amenities**

In this section, we propose ways ahead for placing the previously mentioned principles at the center of academic inquiry (and urban planning) towards urban greening justice. We focus here on access to urban green space, as a well-researched (Estabrooks, Lee, and Gyurcsik 2003; Perkins, Heynen, and Wilson 2004; Abercrombie et al. 2008; Ngom, Gosselin, and Blais 2016; Biemacka and Kronenberg 2018; Rigolon and Németh 2018b), yet undertheorized field of study. Here, we highlight four concrete research questions we suggest for advancing this field of inquiry beyond its current frame of analysis.

**How Do People’s Experiences of Place Shape Their Perception of Access?** First, researchers should consider examining how historical pervasive inequalities, relations of domination and historical, ongoing experiences of place complicate a sense of space and therefore access to green space and amenities. As discussed earlier, examining justice in urban greening requires an in-depth cultural and racial historical analysis of urban development, environmental
practice and privilege, and domination in the cities where researchers are conducting their work. For instance, new green amenities and spaces might not be seen as integrated, welcoming, and convivial amenities for minorities or immigrants, especially so when minorities are or were exposed to racist (immaterial) discourses and (material) practices about who and what nature is for (Park and Pellow 2011; Finney 2014; Rigolon and Németh 2018b; Kotsila et al. 2020). In the United States, many African Americans in historically and perversely segregated cities such as Washington, D.C., Chicago, Philadelphia, Boston, or Detroit historically have a traumatic—or at the very least conflicted—relationship to natural spaces because of past experiences of discrimination, violence, lynching, crime, and exclusion in or from such spaces (Brownlow 2006; Finney 2014; Rigolon and Németh 2018a, 2018b). In other places like Barcelona, the recent remodeling of the Passeig Sant Joan avenue into a green corridor has been accompanied by the rebranding of the broader neighborhood, in which existing Chinese businesses and presence were seen by planners as undesirable (Kotsila et al. 2020).

In addition, when unmanaged or derelict, land is historically linked to criminality and violence, and its aesthetic transformation into a seemingly appealing, accessible new green amenity might still carry notions of trauma, risk, and fear for nearby residents (Anguelovski 2014). The historical continuities and complexities of space for nonwhite residents in the United States and nondominant residents in general are undertheorized as informing residents’ concerns and emancipatory hopes for more livable futures.

We suggest that such a needed in-depth cultural and racial historical analysis raises critical epistemological questions about the research and planning engagement methods deployed as ways of “knowing” these spaces and residents’ experiences of them and that the types of knowledge and histories uncovered might not fit easily into preconceived conceptions of place, particularly from scholars who do not share the same life experiences. At work, then, are issues of power and more immaterial representations of knowledge. New green infrastructure, especially in the urban–rural margins, as is the case with the greenbelt of Medellín described earlier, can encroach on traditional land uses, like animal grazing or informal settlements, and undermine people’s identity and place attachment, while being appropriated by large-scale projects. Thus, close attention is needed to the informal, invisibilized, and displaced spaces and spatial practices that are becoming activated, deactivated, or, in contrast, untouched or undisclosed in the process of land enclosure and urban green transformation.

More specifically, we argue for green justice scholars to include hermeneutical justice in their analysis of access to urban greening while using an emancipatory, antisubordination, relational, and intersectional lens. Hermeneutical injustice occurs when a marginalized social group is at a disadvantage in making sense of its distinctive and important experiences on a subject and is not offered the discursive or material tools and spaces to reflect on and share them (Goetze 2018). In relationship to greening, this refers, from an intersectional and relational standpoint, to understanding whether green infrastructure planning processes help surface and name diverse, at times conflicting, experiences of people and their multiple identities as, for instance, female and minority. Here, one can consider the particular techniques and designs within community-based participatory research processes that can uncover experiences of negative health impacts from discrimination of female minorities, working-class males, or immigrant children in public or green space. This can be done, for example, using methods such as Photovoice, which can shed light on what people perceive as influences and outcomes of racial or gender discrimination (Frerichs et al. 2016). After exposing the often-invisible lived experiences and tensions, new emancipatory, intersectional, and relational planning practice on green access would engage community residents—especially the most vulnerable residents—in participatory structures related to the design and remaking of spaces, ensuring the creation of secure, emotional, immaterial connections and more material uses for both males and females (e.g., their diverse, connected experiences and emotions as migrant or immigrant).

Relatedly, researchers should take epistemic justice into consideration; that is, uncovering prejudice from listeners that leads to speakers receiving less credibility than they deserve and eventually jeopardizing their ability to achieve freedom (Fricker 2003). In regard to greening, this involves examining whether local residents embedded in urban greening processes are “righted” in their knowledge or expertise, such as the types of plants or trees that
might best minimize water runoff, provide shade for public recreation and sports, or capture carbon emissions. Here, specific community-based participatory research processes, such as participatory geographic information systems (GIS), might uncover local spatial knowledge and perceptions. Yet often vulnerable residents’ long-term knowledge of living, working, or caring for a space—as the planning and implementation of the Medellín greenbelt reveals (Anguelovski, Irazabal, et al. 2019)—is not validated by planners and decision makers in contrast with outside experts, who use privileged positions to exercise both material and immaterial power onto an urban space (Hardy, Milligan, and Heynen 2017).

**How Is Access Measured?** Second, as researchers measure spatial access to green space, they need to be aware of how poorly distance and availability standards fit the physical and emotional abilities of some groups, children, women, and the elderly, in particular. Intersectionality and relationality are key here for measurement. Enclosed parks such as the Parc de la Ciutadella or the Parc del Centre de Poblenou in Barcelona, for example, have fewer, and fenced-off, entrances, making it difficult for these groups to use them. Elderly residents might feel vulnerable alone on the streets and might prefer closer, albeit smaller green spaces. New redeveloped canals and waterways, such as those planned in resilience projects in New Orleans or Houston, might bring fears of falling for the elderly or drowning for black residents due to long-standing injustices involving water and segregation forbidding the use of public swimming facilities (Irwin et al. 2011). Legitimate and historically grounded fears that prompt residents to remain away from new greening projects therefore might produce exclusionary spaces, even if they in theory create “access” to blue and green spaces.

Here, we also call for access to be measured in a broader spatial and temporal manner. As new green spaces and infrastructure get expanded or constructed in a previously underserved section of a city, those new amenities might create real estate pressures in another area. In Austin, Texas, for instance, during the 2000s, newly protected areas in West Austin were part of a shift in development pressure toward East Austin, a traditionally lower income Latino and black neighborhood, thereby fueling gentrification and higher real estate prices, especially near new green spaces (Long 2016; Busch 2017; Garcia-Lamarca et al. 2019). Combining equity (addressing existing sociospatial unevenness in green space access) with an equality-based approach to greening (developing widespread, universal greening interventions through the urban space) can inform analytical approaches to access while also considering spatial and temporal imbalances as shifting realities.

Considering future risks of displacement, new research on measuring access must acknowledge that, from addressing past inequalities and domination, green climate resilience can also subordinate racial minorities in new ways and exclude them politically, socially, culturally, and physically from their neighborhoods, thereby preventing emancipatory futures. In Boston, for example, as local media and researchers have highlighted (Anguelovski, Connolly, Pearsall, et al. 2019), green projects, like the resilient greening of East Boston and the release of the 2018 Boston Harbor Plan, embrace a form of universal virtue underpinned by an unbearable whiteness in gentrifying East Boston. Whether conscious or not, green projects aim at materially (through new physical interventions) and immaterially (through new visions of green, resilient Boston) “activating” formerly no-go zones through a damage-centered approach that minimizes other interpretations and knowledges of these places, as well as memories of historical traumas. Here also, the history of racial settlement is obscured through a type of racial amnesia that strips the deeper legacies and impacts of environmental and social inequities (Tuck 2009). Such resilient interventions therefore call for research interrogating the types of settlements and unsettlements that will be created and that obscure unequal future impacts. Overall, to think of resilience, security, and shelter within an emancipatory and antisubordination framework is critical to examining access, and research must thus account for the ways in which these concepts are themselves embedded in systems of political power and domination.

**Who Pays for and Maintains New “Accessible” Green Space?** Third, in examining access, researchers should pay attention to how green space and amenities are financed and to the unequal distribution of resources and investment in and across the city. In the case of green infrastructure for climate resilience, minority or low-income residents might encounter barriers to accessing financial institutions that support the deployment and maintenance of such infrastructure (Connolly et al. 2013; Shokry, 2019).
Connolly, and Anguelovski 2020), particularly in the United States, where many city programs encourage or support resident-led adaptation initiatives (Finewood, Matsler, and Zivkovich 2019). They might also lack political and individual power to insert themselves into those schemes, either as participants in the design process or as applicants, or have poor experiences with previously participating in them (Carmichael and McDonough 2019).

Issues of long-term upkeep, maintenance, and stewardship must also be considered. In many cases, residents might not have the money, time, ability, or desire to maintain new green amenities such as pocket parks, green alleys, rain gardens, or even street trees. Thus, urban greening might give rise to new forms of state underinvestment or climate insecurities (Shokry, Connolly, and Anguelovski 2020) in historically underserved areas. Similar issues exist for tree-planting programs, where low-income residents have expressed concerns about property damage and maintenance, lower aesthetic value from possible dead trees, trees as drug hiding places for dealers, or trees as precursors of green gentrification (Battaglia et al. 2014; Carmichael and McDonough 2019). There is thus a clear tension between the (1) laudable goals of individual and community stewardship and ownership and (2) state responsibility and planning in contexts of historic neglect, abandonment, segregation, or domination in lower income and minority neighborhoods.

Whose Uses and Needs Are Protected or Sacrificed in Order to Create New Access? Many urban green interventions embody gender-biased and patriarchal imaginations rather than feminist and geographically sensitive ones. For some female residents, such as Muslim women in cities like Berlin, green spaces might be places of insecurity, where they might need, for instance, more secluded amenities for them to feel more comfortable and protected from men’s eyes or presence. In contrast, in the United States, some black residents might prefer open spaces to prevent policing practices of violence inflicted on them or on their children. As Black Lives Matter activists articulate through Green America (Floyd 2016), many African Americans indeed face multiple, combined life threats and harms, including state-sanctioned violence (Pellow 2016). The connections they make between those threats and urban space offer new opportunities to create more secure green landscapes.

At the same time, white and male privilege can also shape urban greening spaces, which is why we simultaneously call for more research in urban greening orthodoxy on white supremacism as geographical (Bonds and Inwood 2016) and phenomenological (Ahmed 2007). Residents who use new green amenities might be young, white, or upper class male residents or tourists, whose tacit (or not so tacit) dominance of these spaces—for example, bike lanes (Hoffmann 2016)—might discourage others from using these spaces. More research is needed on how these often unspoken and unexamined forms of privilege shape prioritizations around the condoned activities, lifestyles, and cultural norms of these new spaces.

Here, emancipatory, intersectional, and relational analytical approaches help draw attention to gendered and racialized experiences and truths, ensuring that women and people of color can feel secure and free in new greening efforts. For instance, certain park designs allow women to be noticed when they are being followed (offering multiple alternative paths) and to always have an exit point in view. Here, feminist approaches seek to ensure that polyvocal epistemologies and gendered representations of space (Leszczynski and Elwood 2015) are analytically given focus in urban greening projects, in turn shaping more just green design.

To What Extent Does Urban Greening Address Past History and Trauma and Avoid New Risk? Finally, researchers should interrogate the sitting, scale, design, and history of spaces undergoing green transformation in terms of which experiences of them are lived by whom. In regard to climate change and climate justice, uncovering testimonies about the racial formation of insecure landscapes and considering intersectional drivers of precariousness, trauma (Ranganathan and Bratman 2019), and risk are essential for researchers to avoid condoning “colorblind adaptation planning” (Hardy, Milligan, and Heynen 2017). Testimonial justice is essential here as an epistemological tool to assess whether the knowledge and past “street” experiences that groups hold are legitimized and deemed credible in planning and designing green interventions.

The use of emancipatory frameworks is needed to attend to the role of space and land, not just in subordination but also in manifesting freedom (Malcolm X 1963). An abolitionist, freedom-centered urban green approach (Heynen 2016; Ranganathan and Bratman 2019) in research would help decolonize
land redevelopment practices and recognize the centrality of land recognition, redistribution, and control for vulnerable residents. Further, and building on Gilmore’s work on abolitionism and abolishing racial structures (Gilmore 2002), we call for researchers and practitioners to work together with minority leaders, feminist activists, and other radical civil society organizations to rework existing geographies of domination and allow urban greening to be an abolitionist project (Heynen 2016) that concedes control and self-determination of urban land for groups who have been dominated.

Such emancipatory analytical approaches and green practices would center the symbolic and emotional meaning of land for historically oppressed groups and allow for interactions that can nurture new or existing relationships, create bonding experiences, encourage community identity and place attachment, and allow for land control through secure access to land and resources (Anguelovski 2014; Steil and Delgado 2018). In Washington, D.C., for instance, although the 11th Street Bridge Park envisions land control mechanisms through a community land trust, it does not go as far as securing emancipatory resident-driven green interventions and preventing the harms and risks of new large-scale, city-sanctioned real estate development that are already taking root in the Anacostia neighborhood where the bridge park will be located. Here, an emancipatory framework would also rework the full geography of a city like Washington, D.C., not just because mitigating unsustainable development patterns and addressing climate change are broader geographical concerns than how we structure our everyday lives at the urban and even neighborhood scales but also because, for a fully emancipatory and just green urban geography to emerge, privileged enclaves that inherently prohibit long-term access (either directly or indirectly) to environmental goods must also be exposed and challenged.

Making It Concrete and Green: Interventions for Emancipatory, Antisubordination, Intersectional, and Relational Greening

Last, we provide concrete examples of what emancipatory, intersectional, and relational greening interventions might look like in two different planning and policy domains: (1) greening for well-being, care, and health and (2) greening for recreation and play.

Greening for Well-Being and Health

Creating greening interventions driven by emancipatory, intersectional, and relational justice means considering the importance of well-being (including overcoming past traumas) and improved health. For instance, chronically stressed residents appreciate the physical and emotionally restorative aspects of green spaces (Grahn and Stigsdotter 2010). For minority, female, children, elderly, and low-income residents, finding spaces that can increase wellness while reducing the combined multiple challenges of their daily lives can be particularly psychologically and physiologically restorative, especially if we consider salutogenesis principles (von Lindern, Lyneus, and Hartig 2017).

Here, the opportunities that these spatial interventions represent for social interactions, physical activity, and exposure to nature-intrinsic properties (e.g., sounds, smells, sights, phytoncides, environmental biodiversity that can be associated with human commensal microbiota) might have a particular beneficial health impact on groups with baseline or worse health or fewer opportunities and less capacity to undertake these activities.

Providing restorative and reparative justice in green space is also intricately linked to advancing the materialities and immaterialities of benefits offered in particular green spaces, such as urban gardens. Restorative justice could be a critical interventional framework for greening projects, in particular for those who have experienced oppressive, exclusive, excluding, or violent relationships or dynamics (i.e., segregation, aggression) and could be processed through the joint act of caring for a common and self-organized “green” space. In this regard, urban garden programs in Denver have been shown to provide new physical and emotional connections and value for participants that in turn stimulate a range of responses that influence interpersonal processes, such as learning, affirming, and expressive experiences and social relations (Hale et al. 2011). Stated differently, green spaces where historically (either racially, ethnically, socioeconomically, or gender) opposed groups could come together and interact through a language of caring, creating a space for interaction that can help surpass or drop traditional
stereotypes, can be a fertile (both material and immaterial) ground for restorative or reparative justice in urban greening.

Further, an emancipatory framework for just greening would attend to how well-being and care are practiced within nondominant collective circles and consider the spatial implications of these habits of living. For instance, it balances claims to space and historical (and ongoing) spatial practices, allowing therefore the ways in which refuge and social practice have always been acts of freedom and of overcoming trauma for historically marginalized groups (Anguelovski 2014) to inform new emancipatory green geographies and promote new forms of land reparations, control, and use. In the United States, community land such as the Dudley Land Trust in the immigrant and minority neighborhood of Dudley, Boston, has been a first step toward such achievements, because residents can both own and control land while laying out new sociospatial practices of well-being and political freedom.

Greening for Recreation and Play

Creating green spaces of recreation and play also helps us resituate and center diverse voices in the process, design, and implementation of urban greening to understand what marginalized residents seek and aspire to with regard to exploring new freedoms, contact with others and nature, or new learning. Such an approach would allow for children or youth to articulate their spatial imaginary about what is needed. Play itself connotes a form of freedom to be in space and therefore this dimension of the urban green experience touches on the preceding work on security.

Second, the dimensions of play and recreation, when not conceived a priori, raise challenges for planners and designers in thinking about the intersectional possibilities of urban green space. For example, when play spaces also become community gathering spaces, sites for climate mitigation, or safe spaces for women and children, they are able to deal with intersectional and multidimensional aspects of space (De Visscher and Bouverne-De Bie 2008). In Barcelona, for instance, ethnographic research has found that children’s relational well-being in the Parc Central de Nou Barris has been enabled by both the municipality’s and residents’ visions to integrate the park’s design and infrastructure within the existing urban and social fabric of the historically working-class neighborhood. Over time, the preservation of this fabric and of a vision of a neighborhood-centered park has allowed for the production of informal networks of support that enable children’s free play despite the relatively low presence of green or “natural” elements (Pérez del Pulgar, Anguelovski, and Connolly 2020).

Creating emancipatory and intersectional recreational spaces for socioeconomically diverse groups implies the recognition of the needs and imaginaries of different groups and the historical presence and distribution of these groups over space and time. For instance, the needs of ethnic minority groups as well as girls and women have been consistently overlooked in recreational and play spaces or spatially placed in peripheral areas (Rigolon 2017). An example of this would be the classic provision of play facilities for children that situate the soccer field at the center and quiet recreational areas on the periphery, creating a strong physical and symbolic spatial hierarchy for boys versus girls, based on historic uses of such spaces. Recognizing alternative uses of green space and spatially resituating these at the center is a matter of interactive and reparative justice.

Overall, we suggest that opening up and defining recreation and play relative to marginalized groups can aid in exposing microscale ordering and exclusionary systems (e.g., prohibiting barbequing or “unnuly” behavior in green space; Kraftl 2006). This attends to a normative commitment to justice within procedural concerns but in a way that does not side-step issues of power or ignore how voices are situated differently. Further, this approach undergirds a commitment to epistemic justice by valuing other ways of knowing and determining the spatial dimensions of play and freedom. From a research standpoint, it calls for researchers to reveal alternative, heteronormative construction, uses, and value of play and recreational spaces and identify new practices able to question exclusionary, envisioned, and established structures and roles of play while highlighting emancipatory, intersectional, and interactive ones. An interesting program to study here is Barcelona’s “Dona Molt de Joce”² play and recreation strategy and its focus on shared outdoor play, enriched community life for all, and cocreation of green spaces with children from different gendered and ethnic identities.
Conclusions

We set out in this article to theoretically enrich urban greening research and respond to calls for critical environmental justice scholarship in urban studies (Pellow 2016). Starting from the assumption that the recent creation of restored or new green amenities in large cities is often a political ambition hidden behind techno-environmental, economic, and public health discourses, which highlight the multiple benefits of such a project while obscuring their inequitable impacts, we have examined how inequities play out as the lives of historically marginalized groups get “exposed” to greening interventions, and we have further unpacked greening inequities within the traditional trilogy of justice—distribution, recognition, and procedure. We have also expanded our theoretical proposal of urban green justice toward emancipatory, antisubordination, intersectional, and relational (feminist) urban greening interventions without shying away from central issues related to immaterial and material power and place creation. We believe that the adoption of such thinking and its translation into practice will support and strengthen the achievement of justice in urban greening.

In our view, critical researchers must name and give more intellectual and analytical rigor to normative parameters for justice, which also raises theoretical, epistemological, and methodological questions. By this we mean that normative concepts of justice and whose needs, ideas, and aspirations are met within greening orthodoxies need to be further uncovered, articulated, and used by researchers to inform decision making within and across municipalities and metropolitan regions.

We recognize that the long-term goals of emancipation and antisubordination we have laid out would entail and even necessitate an entirely new set of socioeconomic institutions and practices, not to mention spatial arrangements. In the interim, a restorative and reparative justice framework must attend to instances where injustice has been manifest. As activist researchers in urban and environmental geography and planning, we prioritize understanding the extent to which urban greening and renaturing interventions reflect and represent the everyday experiences, needs, and values of socially vulnerable urban residents while taking into account past experiences of harm, trauma, and exclusion (Ribot 2011). Just urban greening and renaturing decisions must account for the manifold and indirect pathways through which benefits and disbenefits are received by those who have traditionally been excluded from such processes, spaces, and amenities, and who have suffered from land dispossession and loss; this is the only path toward positive benefits and new spatial arrangements.

Furthermore, for just greening to be enacted, this transversality has to materialize with an intersectional understanding of gender, race, ethnicity, poverty, and age and an understanding of the relations between different scales, sites, and subjectivities. It also requires a deep integration of vulnerable groups’ fears and needs, recognizing that such groups have different imaginaries that must be understood and considered in relationship to access and use, to overcome past experiences of domination or exploitation and make green spaces liberating amenities for them. This also means highlighting resistances and contributions to the production of a greener, just city to include a broader concept of citizenship and diverse, material, and immaterial “senses of place” (McKittrick and Woods 2007).

Stepping outside of a system of sociospatial ordering and formalized definitions of acceptable nature based on a white supremacist and patriarchal system of power by giving voice and desire to a multifaceted and diverse, although marginalized, public means also imagining new land use patterns, ownership rights, and development possibilities in which green spaces and green systems might play an essential role. This fluid conceptualization of space will, we hope, produce new geographical formations within existing political economies and new immaterial symbols and connections, thus offering initial steps toward more just geographical relationships while also attending to how injustice is produced at different geographical scales. Although this approach does not alleviate pressure to imagine a new political economy based on a premise of equality and social justice, it does attend to the possibilities of current development dilemmas within the urban green moment.

Last, we cannot conclude without connecting some of our arguments to the COVID-19 epidemic and crisis. We believe just and green urban interventions should account for the increasing vulnerability of children — especially low income families — bound to small apartments without open spaces, female residents who take on extra care...
responsibilities and those exposed to domestic violence, and minorities and immigrants who are already in socio-economic and health disadvantage in front of the pandemic, and of course the combination of those vulnerabilities. Those groups especially need to have access to public green spaces of refuge that can ease home confinement and overall stress and anxiety. The de-confinement phase should also signify the planning of new spaces proximate to home, such as small neighborhood pocket parks or traffic-pacified streets, allowing crowds of residents to be more safely dispersed through the urban space. Here as well, questions of intersectionality, emancipation, and care are central to the creation of public green spaces that can respond to new health (and other) emergencies. Last, it is likely that the use of public spaces, including green amenities, will be perceived as risky for people who have been traumatized one way or another by this pandemic. It is thus crucial to make these places even more welcoming and reassuring in terms of their social and health benefits, as it will be those who do not have private access to alternative open or green space who will suffer the most if perceptions of risk remains in the public imaginary. Moreover, given the racial connotations that have arisen along with COVID-19, it is important to ensure that those who have been stigmatized as “risky”, such as people of Chinese or Italian origin, do not get excluded from the realm of life in public, including from green spaces.

Notes
2. See https://ajuntament.barcelona.cat/ecologiaurbana/ca/que-fem-i-per-que/espat-public-de-qualitat/barcelona-dona-molt-de-joc.

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To walk attentively through a forest, even a damaged one, is to be caught by the abundance of life: ancient and new; underfoot and reaching into the light. But how does one tell the life of the forest? We might begin by looking for drama and adventure beyond the activities of humans. Yet we are not used to reading stories without human heroes. This is the puzzle that informs this section of the book. Can I show landscape as the protagonist of an adventure in which humans are only one kind of participant?

Over the past few decades, many kinds of scholars have shown that allowing only human protagonists into our stories is not just ordinary human bias; it is a cultural agenda tied to dreams of progress through modernization.¹ There are other ways of making worlds. Anthropologists have become interested, for example, in how subsistence hunters recognize other living beings as “persons,” that is, protagonists of stories.² Indeed, how could it be otherwise? Yet expectations of progress block this insight: talking animals are for children and primitives. Their voices silent, we imagine well-being without them. We trample over them for our advancement; we forget that collaborative survival requires
cross-species coordinations. To enlarge what is possible, we need other kinds of stories—including adventures of landscapes.¹

One place to begin is a nematode—and a thesis on livability.

“Call me _Bursaphelenchus xylophilus_. I’m a tiny, wormlike creature, a nematode, and I spend most of my time crunching the insides of pine trees. But my kin are as well-traveled as any whaler sailing the seven seas. Stick with me, and I’ll tell you about some curious voyages.”

But wait: who would want to hear about the world from a worm? That was, in effect, the question addressed by Jakob von Uexküll in 1934, when he described the world experienced by a tick.² Working with the tick’s sensory abilities, such as its ability to detect the heat of a mammal, and thus a potential blood meal, Uexküll showed that a tick knows and makes worlds. His approach brought landscapes to life as scenes of sensuous activity; creatures were not to be treated as inert objects but as knowing subjects.

And yet: Uexküll’s idea of affordances limited his tick to the bubble-like world of its few senses. Caught in a small frame of space and time, it was not a participant in the wider rhythms and histories of the landscape.³ This is not enough—as the voyages of _Bursaphelenchus xylophilus_, the pine wilt nematode, attest. Consider one of the most colorful:

Pine wilt nematodes are unable to move from tree to tree without the help of pine sawyer beetles, who carry them without benefit to themselves. At a particular stage in a nematode’s life, it may take advantage of a beetle’s journey to hop on as a stowaway. But this is not a casual transaction. Nematodes must approach beetles in a particular stage of the beetles’ life cycle, just as they are about to emerge from their piney cavities to move to a new tree. The nematodes ride in the beetles’ tracheae. When the beetles move to a new tree to lay their eggs, the nematodes slip into the new tree’s wound. This is an extraordinary feat of coordination, in which nematodes tap into beetles’ life rhythms.⁴ To immerse oneself in such webs of coordination, Uexküll’s bubble worlds are not enough.

Despite this sojourn with a nematode, I have not abandoned matsutake. A major reason for the current rarity of matsutake in Japan is the demise of pines that results from the habits of pine wilt nematodes. Just as whalers catch whales, pine wilt nematodes catch pines and kill
them and their fungal companions. Still, nematodes were not always involved in this way of making a living. Just as for whalers and whales, nematodes become killers of pines only through the contingencies of circumstance and history. Their voyage into Japanese history is as extraordinary as the webs of coordination they weave.

Pine wilt nematodes are only minor pests for American pines, which evolved with them. These nematodes became tree killers only when they traveled to Asia, where pines were unprepared and vulnerable. Amazingly, ecologists have traced this process rather precisely. The first nematodes disembarked at Japan's Nagasaki harbor from the United States in the first decade of the twentieth century, riding in American pine. Timber was a resource for industrializing Japan, where elites were hungry for resources from around the world. Many uninvited guests arrived with those resources, including the pine wilt nematode. Soon after its arrival, it traveled with local pine sawyer beetles; its moves can be traced concentrically out from Nagasaki. Together, the local beetle and the foreign nematode changed Japan's forest landscapes.

Still, an infected pine might not die if it is living in good conditions, and this indeterminate threat thus holds matsutake, implicated as collateral damage, in suspense. Pines stressed by forest crowding, lack of light, and too much soil enrichment are easy prey to nematodes. Evergreen broadleaf trees crowd and shade Japanese pine. Blue-stain fungus sometimes grows in pine's wounds, feeding the nematodes. The warmer temperatures of anthropogenic climate change help the nematodes to spread. Many histories come together here; they draw us beyond bubble worlds into shifting cascades of collaboration and complexity. The livelihoods of the nematode—and the pine it attacks and the fungus that tries to save it—are honed within unstable assemblages as opportunities arise and old talents gain new purchase. Japan's matsutake enters the fray of all this history: its fate depends on the enhancement or debilitation of the Uexküllian agilities of pine wilt nematodes.

Tracking matsutake through the journeys of nematodes allows me to return to my questions about telling the adventures of landscapes, this time with a thesis. First, rather than limit our analyses to one creature at a time (including humans), or even one relationship, if we want to know what makes places livable we should be studying polyphonic assemblages, gatherings of ways of being. Assemblages are performances of
livability. Matsutake stories draw us into pine stories and nematode stories; in their moments of coordination with each other they create livable—or killing—situations.

Second, species-specific agilities are honed in the coordinations of assemblages. Uexküll gets us on the right track by noticing how even humble creatures participate in making worlds. To extend his insights, we must follow multispecies attunements in which each organism comes into its own. Matsutake is nothing without the rhythms of the matsutake forest.

Third, coordinations come in and out of existence through the contingencies of historical change. Whether matsutake and pine in Japan can continue to collaborate depends a great deal on other collaborations set in motion by the arrival of pine wilt nematodes.

To put all this together it may be useful to recall the polyphonic music mentioned briefly in chapter 1. In contrast to the unified harmonies and rhythms of rock, pop, or classical music, to appreciate polyphony one must listen both to the separate melody lines and their coming together in unexpected moments of harmony or dissonance. In just this way, to appreciate the assemblage, one must attend to its separate ways of being at the same time as watching how they come together in sporadic but consequential coordinations. Furthermore, in contrast to the predictability of a written piece of music that can be repeated over and over, the polyphony of the assemblage shifts as conditions change. This is the listening practice that this section of the book attempts to instill.

By taking landscape-based assemblages as my object, it is possible to attend to the interplay of many organisms’ actions. I am not limited to tracking human relations with their favored allies, as in most animal studies. Organisms don’t have to show their human equivalence (as conscious agents, intentional communicators, or ethical subjects) to count. If we are interested in livability, impermanence, and emergence, we should be watching the action of landscape assemblages. Assemblages coalesce, change, and dissolve: this is the story.

The story of landscapes is both easy and hard to tell. Sometimes it relaxes readers into somnolence, making us think we are not learning anything new. This is a result of the unfortunate wall we have built be-
tween concepts and stories. We can see this, for example, in the gap between environmental history and science studies. Science studies scholars, unpracticed in reading concepts through stories, don’t bother with environmental history. Consider, for example, Stephen Pyne’s fine work on fire in the making of landscapes; because his concepts are embedded in his histories, science studies scholars remain uninfluenced by his radical suggestions on geochemical agency. Pauline Peters’s trenchant analysis of how the logic of the British enclosure system came to Botswana range management—or Kate Showers’s surprising findings about erosion control in Lesotho—could revolutionize our notions of normal science, but they have not. Such refusals impoverish science studies, encouraging the play of concepts in a reified space. Distilling general principles, theorists expect that others will fill in the particulars—but “filling in” is never so simple. This is an intellectual apparatus that shores up the wall between concepts and stories, thus, indeed, draining the significance of the sensitivities science studies scholars try to refine. In what follows, then, I challenge readers to notice concepts and methods within the landscape histories I present.

Telling stories of landscape requires getting to know the inhabitants of the landscape, human and not human. This is not easy, and it makes sense to me to use all the learning practices I can think of, including our combined forms of mindfulness, myths and tales, livelihood practices, archives, scientific reports, and experiments. But this hodgepodge creates suspicions—particularly, indeed, with the allies I hailed in reaching out to anthropologists of alternative world makings. For many cultural anthropologists, science is best regarded as a straw man against which to explore alternatives, such as indigenous practices. To mix scientific and vernacular forms of evidence invites accusations of bowing down to science. Yet this assumes a monolithic science that digests all practices into a single agenda. Instead, I offer stories built through layered and disparate practices of knowing and being. If the components clash with each other, this only enlarges what such stories can do.

At the heart of the practices I am advocating are arts of ethnography and natural history. The new alliance I propose is based on commitments
to observation and fieldwork—and what I call noticing. Human-disturbed landscapes are ideal spaces for humanist and naturalist noticing. We need to know the histories humans have made in these places and the histories of nonhuman participants. Satoyama restoration advocates were exceptional teachers here; they revitalized my understanding of “disturbance” as both coordination and history. They showed me how disturbance might initiate a story of the life of the forest.

Disturbance is a change in environmental conditions that causes a pronounced change in an ecosystem. Floods and fires are forms of disturbance; humans and other living things can also cause disturbance. Disturbance can renew ecologies as well as destroy them. How terrible a disturbance is depends on many things, including scale. Some disturbances are small: a tree falls in the forest, creating a light gap. Some are huge: a tsunami knocks open a nuclear power plant. Scales of time also matter: short-term damage may be followed by exuberant regrowth. Disturbance opens the terrain for transformative encounters, making new landscape assemblages possible.

Humanists, not used to thinking with disturbance, connect the term with damage. But disturbance, as used by ecologists, is not always bad—and not always human. Human disturbance is not unique in its ability to stir up ecological relations. Furthermore, as a beginning, disturbance is always in the middle of things: the term does not refer us to a harmonious state before disturbance. Disturbances follow other disturbances. Thus all landscapes are disturbed; disturbance is ordinary. But this does not limit the term. Raising the question of disturbance does not cut off discussion but opens it, allowing us to explore landscape dynamics. Whether a disturbance is bearable or unbearable is a question worked out through what follows it: the reformation of assemblages.

Disturbance emerged as a key concept in ecology at the very same time that scholars in the humanities and social sciences were beginning to worry about instability and change. On both sides of the humanist/naturalist line, concerns about instability followed after the post–World War II American enthusiasm for self-regulating systems: a form of stability in the midst of progress. In the 1950s and 1960s, the idea of ecosystem equilibrium seemed promising; through natural succession, ecological formations were thought to reach a comparatively stable balance point. In the 1970s, however, attention turned to disruption and change,
which generate the heterogeneity of the landscape. In the 1970s, too, humanists and social scientists began worrying about the transformative encounters of history, inequality, and conflict. Looking back, such coordinated changes in scholarly fashion might have been early warning of our common slide into precarity.

As an analytic tool, disturbance requires awareness of the observer’s perspective—just as with the best tools in social theory. Deciding what counts as disturbance is always a matter of point of view. From a human’s vantage, the disturbance that destroys an anthill is vastly different from that obliterating a human city. From an ant’s perspective, the stakes are different. Points of view also vary within species. Rosalind Shaw has elegantly shown how men and women, urban and rural, and rich and poor each conceptualize “floods” differently in Bangladesh, because they are differentially affected by rising waters; for each group, the rise exceeds what is bearable—and thus becomes a flood—at a different point.17 No single standard for assessing disturbance is possible; disturbance matters in relation to how we live. This means we need to pay attention to the assessments through which we know disturbance. Disturbance is never a matter of “yes” or “no”; disturbance refers to an open-ended range of unsettling phenomena. Where is the line that marks off too much? With disturbance, this is always a problem of perspective, based, in turn, on ways of life.

Since it is already infused with attention to perspective, I am unapologetic about my use of the term “disturbance” to refer to the distinctive ways the concept is used in varied places. I learned this layered usage from Japanese forest managers and scientists, who constantly stretch European and American conventions, even as they use them. Disturbance is a good tool with which to begin the inconsistent layering of global-and-local, expert-and-vernacular knowledge layers I have promised.

Disturbance brings us into heterogeneity, a key lens for landscapes. Disturbance creates patches, each shaped by diverse conjunctures. Conjunctures may be initiated by nonliving disturbance (e.g., floods and fires) or by living creatures’ disturbances. As organisms make intergenerational living spaces, they redesign the environment. Ecologists call the effects that organisms create on their environments “ecosystems engineering.”18 A tree holds boulders in its roots that otherwise might be swept away by a stream; an earthworm enriches the soil. Each of these
is an example of ecosystems engineering. If we look at the interactions across many acts of ecosystems engineering, patterns emerge, organizing assemblages: unintentional design. This is the sum of the biotic and abiotic ecosystems engineering—intended and unintended; beneficial, harmful, and of no account—within a patch.

Species are not always the right units for telling the life of the forest. The term “multispecies” is only a stand-in for moving beyond human exceptionalism. Sometimes individual organisms make drastic interventions. And sometimes much larger units are more able to show us historical action. This is the case, I find, for oaks and pines as well as matsutake. Oaks, which interbreed readily and with fertile results across species lines, confuse our dedication to species. But of course what units one uses depends on the story one wants to tell. To tell the story of matsutake forests forming and dissolving across continental shifts and glaciation events, I need “pines” as a protagonist—in all their marvelous diversity. *Pinus* is the most common matsutake host. When it comes to oaks, I stretch even farther, embracing *Lithocarpus* (tanoaks) and *Casta-nopsis* (chinquapin) as well as *Quercus* (oaks). These closely related genera are the most common broadleaf hosts for matsutake. My oaks, pines, and matsutake are thus not identical within their group; they spread and transform their storylines, like humans, in diaspora. This helps me see action in the story of assemblage. I follow their spread, noticing the worlds they make. Rather than forming an assemblage because they are a certain “type,” my oaks, pines, and matsutake become themselves in assemblage.

Traveling with this in mind, I investigated matsutake forests in four places: central Japan, Oregon (U.S.A.), Yunnan (southwest China), and Lapland (northern Finland). My small immersion in satoyama restoration helped me see that foresters in each place had different ways of “doing” forests. In contrast to satoyama, humans were not part of forest assemblages in matsutake management in the United States and China; managers there leaped to anxieties about too much human disturbance, not too little. In contrast, too, to satoyama work, forestry elsewhere was measured on a yardstick of rational advancement: could the forest make
futures of scientific and industrial productivity? In distinction, a Japanese satoyama aims for a livable here and now.21

But, more than comparison, I seek histories through which humans, matsutake, and pine create forests. I work the conjunctures to raise unanswered research questions rather than to create boxes. I look for the same forest in different guises. Each appears through the shadows of the others. Exploring this simultaneously single and multiple formation, the next four chapters take me into pines. Each illustrates how ways of life develop through coordination in disturbance. As ways of life come together, patch-based assemblages are formed. Assemblages, I show, are scenes for considering livability—the possibility of common life on a human-disturbed earth.

Precarious living is always an adventure.


2 Urban Forests are Social Natures
Markets, Race, Class, and Gender in Relation to (Un)Just Urban Environments

Harold Perkins

Introduction

Many people do not realize that trees in the city are part of an urban forest. Trees seem so out of place in some heavily built environments that they appear to be verdant interlopers among the concrete and rectilinear shapes surrounding them. But there is a growing awareness among researchers, planners, and even the general public that urban forests exist and serve ecological functions or ‘services’ to people living in even the most densely built urban corridors (Jim and Chen, 2009). The benefits provided by a healthy, well-managed forest are so extensively documented by academics that it is impractical to list them all here. Some of the best-known benefits, however, include sequestration of greenhouse gases, reduction of heat island effects, reduced power demand, and storm water retention (see Nowak and Dwyer, 2000). Given these benefits, efforts to grow a small number of trees into a forest are welcome strategies across the urban milieu, from the concrete corridors of downtown to the far-reaching cul-de-sacs of sprawling suburbia. It is not surprising then that planners, city foresters, and the general public are all incorporating more trees into their corner of the metropolitan landscape.

Despite this growing awareness of the benefits of urban forests, there is an ever-present risk that we still treat trees as mundane and randomly dispersed objects while ignoring the power-laden processes shaping their distribution across the city. Benevolent public and private planting programs and a general belief that trees just ‘grow wherever’ mask the fact that in many urban forests the majority of trees are planted by people—all of whom live in specific geographical contexts and circumstances. The fact that so many trees are planted by people is an important consideration for the distribution of this valuable urban resource. Urban trees, and by extension the urban forest they comprise, represent a nexus of social, economic, and political happenings in the city (Heynen et al., 2006). They are literally a living record of past and present relationships between actors who occupy different positions within urban society and wield power differentially according to their position.

Of course this line of thinking is different than the conventional wisdom that urban tree growth is determined by environmental conditions including the
availability of light, water, nutrients, and the troublesome presence of soil compaction and disease-causing organisms (Jim, 2000). Certainly biological drivers are important determinants of tree growth in cities. My argument here is that we keep these in mind while further considering how biological drivers of forest structure and distribution operate in the context of human endeavors. In other words, the biological imperative of photosynthesis that supports the growth of tree canopy occurs in the spatial context of race, class, ethnicity, gender, culture, and markets that produce and underpin the larger urban setting. The task is for us to elucidate precisely how it is that people harness the power of photosynthesis in the urban forest canopy to their benefit according to explicitly spatialized and uneven societal processes. Only then can we obtain a more comprehensive picture of all the factors impacting the composition and distribution of the urban forest.

A more complete picture is important because we live in an urban world. The human population increasingly lives in cities and there is little doubt that this trend will accelerate. People are migrating to cities in the developing world and often live and work in difficult environmental conditions once there (Davis, 2007). Climate change associated with rising temperatures and shortages of water promise to make life in cities even more difficult for vulnerable migrants seeking an urban way of life in the future. If trees can do for us even a fraction of what we think they can in urban settings, it will be extremely important going forward that urban forests are better incorporated into these destination cities where a billion or more people are expected to relocate in the coming decades. This of course will be no simple task as (re)forestation efforts will have to be managed across a continuum of spatial scales (Heynen, 2003). Small-scale efforts to forest individual communities will continue to be important goals for achieving localized environmental justice. However, those efforts should also be incorporated and complemented by efforts at regional, national, and international scales where global ecological concerns of biodiversity, resilience, and climate change mitigation can better be addressed. Understanding social, political, and economic drivers of urban forest canopy across varied geographical contexts is, therefore, essential to an appropriate expansion and intensification of urban forestry to the planetary scale. Unfortunately, discrimination in commodity markets based on race/ethnicity, socio-economic standing, and gender prevents many people living in cities from benefiting from urban forests. In what follows I address these constraints and then go on to discuss/critique what is currently being done to expand access to these groups of people. I conclude this chapter by discussing briefly why including people historically marginalized in forestry governance should be central to achieving environmental justice in cities throughout the world.

**Social Nature and the Political Ecology of the Urban Forest**

We tend to think of trees as growing on their own without the assistance of people. Certainly trees are organisms with metabolic properties just like other plants and animals in the biosphere. In order to survive they photosynthesize inputs from their
environment and engage in evapotranspiration by releasing oxygen and water vapor among other chemical compounds. Like other organisms, trees grow, die, and eventually decay and contribute to the nutrient cycle. However, urban political ecologists push us to further consider how these biophysical processes are related to human actions (Castree, 2000). They in fact want us to reconsider urban trees and forests as a produced ‘social nature’ where human behavior affects biological processes in profound ways (Perkins, 2007). This is not to say that the photosynthesis that trees accomplish is somehow carried out by people. Rather it suggests that we humans harness the process of photosynthesis and tree growth according to our needs and wants.

People intervene in the process of urban forest dynamics in ways that produce a forest that would otherwise look much different if left to its own devices. Proof of our ability to create new forest ecologies according to our social capacities is everywhere present. Most urban trees are explicitly planted by someone (Heynen, 2003). This means then that much of the forest exists by human design. Urban forestry departments plant trees on the parking strip along roadways using hardy species that can withstand heat and soil compaction. People are even adept at altering the genetic makeup of trees to resist diseases endemic to urban forests. “Valley Forge” and “New Harmony” are new elm cultivars designed by scientists to resist the ravages of Dutch elm disease (DED) (US National Arboretum, 1995). As another example of our ecological interventions, forestry departments and property owners alike prune and maintain trees to make them take certain shapes for aesthetic and structural purposes. All of these examples demonstrate the efficacy of our social interventions into forest ecology.

What this means is that people are constantly in the process of co-producing urban ecologies with the trees in their neighborhood, therefore, making human activity fundamentally ecological. David Harvey insists it is ridiculous that our thinking on ecological matters has resolutely excluded human activity from that realm of relational thinking (1996). But expanding our understanding of humans as ecological actors allows us to consider urban forest ecologies as artifacts of human creativity, will, ingenuity, and labor. However, urban political ecologists note that the production of these urban artifacts is the result of, and contributes to, arrangements of power and the flow of resources in the city. Thus the work of co-producing socio-natural environments that comprise cities is never politically neutral; it always serves some particular purpose within society and the resulting ecology is usually uneven (Swyngedouw and Heynen, 2003). The task then for urban political ecologists is to recognize the socio-natural forest for the trees by elucidating the societal factors that influence who works on forests, what composition forests assume (i.e. species proportions), and what shape they take in terms of geographical distribution. All of these outcomes have tremendous importance when we consider trees to be valuable urban resources that are not shared by all urban dwellers.
Racialized, Classist, and Gendered Forests in a Market-Mediated Urban Landscape

Capitalism is the dominant mode of economic organization in most cities in the world today. Fundamental to capitalism is the existence of property; virtually everything in the city belongs to someone or some institution. If a capitalist system is to function successfully, there needs to be a market that mediates the production, exchange, and consumption of property. If we measure wealth as a function of the accumulation of property under capitalism, markets are thus important mediators of the distribution of that wealth. There are fundamental distinctions in the property market that are important to the distribution of property in any capitalist city. There are private forms of property owned by individuals and firms, and there are properties held in common (public). In a capitalist economy, private property is favored over public property that is usually subject to state management. But what does the property relation under capitalism have to do with urban forests?

Urban trees are frequently treated as property in commodity form in a capitalist setting (Perkins et al., 2004). This is in part the case because many trees are produced and sold to consumers by private nurseries and distributors. Individuals purchase their trees with money and then plant them on their own private property. The act of planting trees on private property also makes them commodities as they are then rooted in the exchange value of the land they are planted on as expressed in urban real-estate markets. So what all this means in a capitalist economy is that money is necessary to access the market for trees sold as individual commodities or as part of a larger property. We also know that wealth is not evenly distributed in a capitalist system, so some people and government agencies have more purchasing power to buy trees than others. Thus there is an inherent tendency for trees as commodities to be unevenly distributed in capitalist cities, even on public lands. Studies on trees bear this out (Heynen and Perkins, 2005; Landry and Chakraborty, 2009).

Conventional wisdom tells us that the market for capitalist commodities is ruled by an invisible hand (Smith, [1776] 2009). Markets are supposed to function in ways that are color-blind and politically neutral. However, we now know this position is false. Access to markets for commodities is determined by many important factors including race, class, and gender, just to name a few social distinctions (Pulido, 2000). By extension, access to urban trees (and private property with urban trees already growing on it) is mediated by the complex positions of various groups in society categorized according to these distinctions (Romm, 2002). Access to commodity markets is in part differentiated according to these distinctions because they have a bearing on access to income producing jobs and by extension purchasing power. Take race and/or ethnicity as an example.

Race/Ethnicity and Inequitable Urban Forests

The relationship between race/ethnicity and urban forest inequity is complex. However, most studies conducted on race/ethnicity and the distribution of urban
trees in US cities suggest that non-Hispanic whites tend to live in more verdant neighborhoods than African-Americans and Hispanic/Latinos. A study conducted in New Orleans suggests canopy cover in its neighborhoods is lower in proportion to increasing numbers of African-American residents (Talarcheck, 1990). Research carried out several years later in Milwaukee indicates that census tracts predominantly populated with non-Hispanic whites are strongly correlated with higher rates of tree cover while Hispanics were negatively correlated with canopy cover (Heynen et al., 2006). Yet another study conducted in Tampa finds that canopy cover also decreases there as the proportion of African-American residents increases in neighborhoods (Landry and Chakraborty, 2009). There exist some likely explanations for these racial/ethnic discrepancies in canopy cover.

Cities sometimes under-invest in public property in African-American and Hispanic neighborhoods, leading to variations in the number and vitality of trees present on public right-of-ways. Minorities’ purchasing power is on average lower compared with non-Hispanic whites because of discrepancies in employment opportunities and compensation. Little disposable income is an economic constraint placing the purchase of trees far below priorities like paying the mortgage/rent/utilities and putting food on the table (Perkins, 2009). Minority populations living in US cities also tend to live in rental housing as their low incomes restrict their access to the housing market. As Perkins et al. (2004) suggest, people who rent their

![Figure 2.1 Tall and proud. Early springtime view of vigorous and manicured street trees in Milwaukee’s affluent East Side neighborhood, USA.](source: Harold Perkins, 2006.)
homes tend not to have opportunities to plant trees (more on this in the following subsection) and also tend to live in relatively un-canopied neighborhoods.

Interestingly, however, one study conducted in Baltimore found evidence that some African-Americans there live in neighborhoods with relatively high rates of vegetation, including trees (Troy et al., 2007). A potential explanation for this, according to the study, is that some African-Americans are now living in formerly white neighborhoods with ‘historical legacies’ of past tree plantings coupled with increasing numbers of volunteer trees growing on vacant lots. There is also evidence in Milwaukee that some African-Americans live in relatively canopied census tracts (Heynen et al., 2006). Like Baltimore, however, Heynen et al. largely attribute the cause for this correlation in Milwaukee to the fact that African-Americans live in some of the oldest neighborhoods in the city with an historical planting legacy. They go on to note that disinvestment in many of these properties, especially by absentee landlords, has caused volunteer trees to be counted in canopy measures, too. Disinvestment in these older Milwaukee neighborhoods has created a problematic fence-line forest of fast-growing boxelder and silver maples that causes extensive damage to roofs, foundations, and fences (Perkins, 2006). The fence-line forest causes an antagonistic outlook concerning urban trees to emerge among

Figure 2.2 Under the wire. Early springtime view of small and mangled street trees in Milwaukee’s impoverished Harambee neighborhood.

some African-American residents given these problems. The future of these poorly maintained trees and the otherwise valuable canopy they provide is in doubt as people remove them because of the problems they cause.

It is important to note here that there are differences regarding the perceptions of the value of trees among different groups residing in the city and that these perceptions potentially have an impact on canopy distribution as well. For example, I have noted that some residents in African-American neighborhoods in Milwaukee and Detroit prefer not to have trees planted near their homes. Hmong communities in Milwaukee are concerned that trees will shade their sun-loving urban gardens, too. Similar stories about residents not wanting trees come from some neighborhoods in Baltimore (Grove et al., 2006) and New York City (Susman, 2009). Potential property damage by trees and interference with other kinds of land uses are prominent reasons why some residents resist the planting of additional trees. Some of this antagonism also is the likely result of the imposition of forestry management policies on neighborhood residents in conjunction with a lack of communication between foresters and residents living in the central city (Romm, 2002). This is a missed opportunity to communicate with residents about how trees can be an amenity that benefits the people living in central cities by saving them energy costs while providing them with a better quality of life. It is also a missed opportunity to share urban environmental governance with residents that might want other forms of green infrastructure in addition to, or besides, trees (Perkins, 2011). Racial/ethnic considerations of forest inequity are highly related to class, or socio-economic standing.

**Class/Socio-economic Standing and its Relation to Urban Forest Inequity**

Trees were planted in upper- and middle-class neighborhoods in the 19th and early 20th centuries in many cities in the Northeastern and Midwestern US, but working-class tenement neighborhoods remained mostly un-forested. By the middle of the 20th century, however, many non-Hispanic white working-class families moved into single-family homes with yards and their relationship with trees began to change. Historical accounts suggest that American elms, for example, were planted ubiquitously in newly created white, working-class neighborhoods since their leafy benefits quickly contributed to the higher quality of life that workers achieved (Campanella, 2003). Green cathedrals towering over the streets essentially worked to blur class lines in the US as the working class began to live in verdant neighborhoods that closely resembled middle-class standards in quality and aesthetics. This was particularly the case in newly emerging suburbs in the post-Second World War era. But of course white flight and deindustrialization meant that many of these upwardly mobile, white, working-class families left the city and its earliest suburbs for newer settlements at the farthest fringes of the metropolitan area. Outmigration occurred around the same time that DED was destroying urban elm forests in the US. The relationship between urban forests and class status had once again changed.
The connection between lower socio-economic standing and the absence of urban trees is once again quite strong, giving the distribution of urban forests a significant class-based dimension today. The urban population that remains in post-industrial US cities is more diverse and poorer relative to what it once was. Jobs and white residents left the city taking with them the capital needed to support public and private forestry efforts. Much of the remaining housing stock is now rented out to low income/minority groups. DED of course ended up being a devastating disturbance since many cities’ canopies were predominantly comprised of elms (Schreiber and Peacock, 1979). One result of all of these changes is that large tracts of old rental housing in the central city are occupied by some of the poorest residents in a metropolitan area, and the trees lost to DED in these locations were never replanted on private property. This is largely the case in Milwaukee, for example, where census tracts with low socio-economic standing and larger percentages of rental housing feature significantly lower levels of canopy than other neighborhoods in the city (Perkins et al., 2004; Heynen et al., 2006). The few wealthier homeowners who stayed in the city replaced their trees while people living in poorer neighborhoods mostly did not. Evidence suggests a similar distribution of trees according to socio-economic considerations in Tampa (Landry and Chakraborty, 2009).

Housing tenure and socio-economic standing are closely correlated. Middle- and upper-income groups tend to own and stay in their homes for a long time while poorer people tend to rent and move around more frequently (van der List et al., 2002). This has bearing on the prospects for reforestation on both public and private lands in the city. There are discrepancies in the number of trees planted on the right of way in wealthy neighborhoods full of homeowners versus poorer neighborhoods with more rental homes (Heynen and Lindsey, 2003). Even if the city forestry department or a local nonprofit organization does its best to plant trees on the right of way in poor neighborhoods, their future is anything but certain. Trees planted by urban foresters on the right of way in the poorest neighborhoods of Milwaukee and Detroit, for example, have short life expectancies due to neglect and vandalism (personal communication). Homeowners also have a number of incentives to plant trees on private property that renters do not.

Planting trees in a proper location is a form of property maintenance that adds value to a home in the long term (Anderson and Cordell, 1988). Trees can increase exchange (market) values of private properties because they provide property owners with certain kinds of use-values, including enhanced aesthetics and the shading and sheltering structures that reduce costs for cooling and heating. Renters usually have little to no power to make maintenance decisions. Also, they are unlikely to purchase and plant trees given the investment will take 30 years to mature and pay dividends in reduced energy bills. Unlike homeowners, renters must secure permission from the landlord if they want to plant trees. All of these factors suggest that upper- and middle-class homeowners are more likely to plant trees where they live than lower-class renters (Perkins et al., 2004). Scale up to the entire metropolitan area, and it becomes evident that the difference between wealthy homeowners and poor renters will have distributional effects on existing
and future urban canopy cover. In addition to race/ethnicity and class, gender roles in society also impact the production of urban forests.

**A Masculine Arboricultural Industry and its Gendered Urban Forests**

Middle-class, white women were instrumental in the early history of urban forestry in the US. Women’s clubs in the late 19th and early 20th centuries embraced the budding conservation movement and with it they pushed for the planting of trees along streets in cities throughout the US (Merchant, 1985; Campanella, 2003). As Merchant goes on to suggest, women’s clubs embraced forestry in the city because they believed conservation in the city was tantamount to conserving home, family, womanhood, and whiteness. In other words, city beautification as espoused by women in these clubs was supposed to reform immigrant/working-class residents whom they believed threatened the gendered, racialized, and classist relations predominant in society at the turn of the century. Reflection on women’s club involvement in urban forestry in the US thus indicates the ‘progressive’ women who participated in these arboricultural activities were actually reinforcing, rather

![Figure 2.3 Arboricide. Wintertime view of a recently planted tree struck down by vandals in Milwaukee’s impoverished Lynden Hill neighborhood. Source: Harold Perkins, 2006.](image-url)
than challenging, the important societal norms of their time. Urban forestry was, therefore, able to quickly become a technical and masculine profession which left its women progenitors behind (Merchant, 1985). This is important because professionalized urban forestry organizations (both public and private) at a variety of scales have become the primary means through which most forestry-related decisions are made and carried out in the US.

Data on women’s participation in formal urban forestry organizations is sparse today, but it is accepted that men continue to dominate the field (Pinchot Institute, 2006). For example, Kuhns et al. (2002, 2004) found that only 10 percent of urban forestry professionals in the US were women and that many women working in the industry perceive some form of discrimination against them in the workplace. These findings are not surprising because gender roles assigned by society to workers determine what those workers are—and are not—allowed to do for a living (McDowell and Massey, 1984; Harvey, 1998). The same kind of thinking that men should be firefighters, doctors, and lawyers, while women should be nurses, teachers, and secretaries has historically prohibited women from managing and working directly on urban trees in a professional setting. Thus, if we look at the structure of urban forests, particularly the component located on public rights of way, we see a masculine urban forest ecology (Heynen et al., 2007). Its structure and physical form represents decades of intellectual and manual arboricultural work done almost exclusively by white men who prioritize shade trees. We have to ask ourselves if something has been missed by not allowing women to more fully participate in the science and decision-making regarding the urban forest around them. For example, would women choose the same tree species to plant as men traditionally have, or would they perhaps prioritize fruit trees instead? Would they practice the same methods of planting and maintenance? These are questions we do not have good answers for at this point because women have largely been kept out of formalized urban forestry. There are, however, increasing numbers of women working in the professional urban forestry sector (Kuhns et al., 2004; Pinchot Institute, 2006; Heynen et al., 2007). It remains to be seen if they will change the form and structure of the urban forest or carry on the industry’s predominantly masculine traditions.

So Race/Ethnicity, Class, and Gender Contribute to Uneven Forests. What is Being Done about it?

Academics know urban forests are unevenly distributed according to many variables, but especially by socio-economic standing of neighborhood residents. There is recognition among formalized urban forestry organizations that urban forests need to be distributed more equitably, too (American Forests, 2013). I am, therefore, skeptical that more studies are needed to prove that the urban poor and minorities live in locations featuring less canopy cover than their wealthier counterparts. It seems intuitive that when houses and trees are treated as a commodity, people who have the ability to pay for them are more likely to purchase homes and trees than those who cannot afford them. We do need, however, to understand
what is being done to provide underserved urbanites access to urban trees and forests. As it turns out, nonprofit organizations and community groups are leading the expansion of urban forests into marginalized neighborhoods.

Their efforts are comprised of two prominent strategies to better distribute urban forests beyond the wealthiest and whitest sections of cities. Both strategies have their roots in the belief that the civil sector can solve problems better than expensive, top-down bureaucracies like municipal forestry departments. One strategy is voluntarism with its emphasis on the role of nonprofit organizations in coordinating and carrying out urban service provision; the other is volunteerism where community groups and individuals provide their own services. Both voluntarism and volunteerism for urban forestry have become more prominent in an era of government fiscal austerity during the last 30 years (Perkins, 2009). US cities, for various reasons, including deindustrialization and a loss of tax base, have less money to spend on public works than they did three decades ago. Cash-strapped large cities, especially in the US Northeast and Midwest, scaled back or eliminated altogether their spending on public services like urban forestry. Detroit is currently undergoing bankruptcy proceedings, for example, leaving little money for its police force, fire department, and roadways (Davey and Williams Walsh, 2013). Trees fall far behind these needs on the public works priorities list.

Voluntarism is one way that the civil sector responds to these urban fiscal and service provision emergencies. Voluntarism is a term describing the plethora of professional, yet nonprofit organizations emerging alongside the shrinking government sector that fills the continued need for urban service provision in the wake of municipal budget cuts (Wolch, 1990). A substantial number of nonprofit organizations seek to reforest central cities, including The Greening of Detroit, Baltimore Tree Trust, Greening Milwaukee, and Trees Atlanta. Despite their supposed separation from the state, these organizations largely draw their budgets from grants that they receive from a variety of Federal, state, and local government agencies (Perkins, 2009). They also receive a substantial amount of their operating budgets through donations from the private sector, including philanthropies, corporations, and individuals. These organizations seek to create, influence, and promote urban forest policies. One of their biggest goals, however, is to encourage volunteerism—getting local citizens to volunteer their time and efforts for urban forests.

Volunteerism happens when citizens work on something because they feel they need to tackle a problem on their own (Fyfe and Milligan, 2003). Citizen groups sometimes volunteer to inventory and assess their urban forests; more frequently they plant trees on special occasions like Arbor Day. Increasingly, professionalized nonprofit organizations like the ones previously mentioned coordinate volunteer work on trees as it can be rather technical and funding for urban forestry projects can be hard to generate, especially in inner-city neighborhoods (Perkins, 2011). Whether the volunteerism is coordinated by nonprofit organizations or not, the idea behind volunteerism is that citizens be empowered to inventory, maintain, plant, and surveil their own forests. These kinds of efforts are happening in a diverse range of neighborhoods from rich to poor in cities all over the Western world. The
NeighborWoods program is a good example of one of these nonprofit organizations that encourages volunteerism. A study of NeighborWoods volunteers suggests affluent people who give their time and energy to plant trees do so because they view it as a way to learn how to maintain their property while enhancing its value. Less affluent volunteers were said to do it for the sake of neighborhood revitalization (Makra and Andresen, 1990).

Another important corollary to volunteerism as coordinated by nonprofit organizations is the idea that inner-city residents gain skills necessary for certain kinds of employment through their volunteer experiences. Nonprofit urban forestry organizations with funding from government sources and private donors are encouraging and coordinating African-American and Hispanic/Latino youth to become stewards of their local urban environment. In Milwaukee, for example, ‘at-risk’ youth are taught how to plant trees in urban nurseries, care for them, and eventually replant them in elderly neighbors’ yards as part of a service-learning program. The goal of the program run by Greening Milwaukee and funded by government grants and private donations is to get ‘kids off the street corner’ and learning skills that will help them to get a job someday. Evidence of success by these programs in getting a diverse range of participants is still mixed at best, however.

People who volunteer to work on trees still tend to be affluent and white (Perkins, 2009; 2011). Minorities are under-represented in many programs for a number of reasons. Residents living in central cities often have serious social and economic issues preventing them from placing trees high on their list of priorities. We also have to keep in mind that there are cultural preferences at work here, too. One study indicates various minority groups possess different aesthetic preferences for greenery among their homes that translates into fewer trees (Grove et al., 2006). Inner-city residents are sometimes suspicious of the actions of nonprofit groups from outside their neighborhoods as well (Battaglia, 2010). It can take months if not years for nonprofit forestry groups to earn the trust of residents who feel abandoned or even abused by their city governments (personal communication).

All of these issues make the relationship between voluntarism and volunteerism in urban forestry problematic. The laudable goals of nonprofit organizations to reforest cities may be falling short of being racially/ethnically and socio-economically inclusive. It is even my suggestion that some efforts of nonprofit groups to use minority volunteers for urban greening amount to market-based forms of social engineering (Perkins, 2009; 2011). Such initiatives also absolve the state from stepping in and comprehensively investing in urban environmental amenities like trees. Regardless of these damning charges, a lack of participation in forestry programs by people living in minority communities is highly problematic in relation to the goal of increasing canopy cover equity across the city. This critique, it should be noted, is not meant to dismiss the importance of community participation in urban forestry. Rather, community participation should be encouraged and buttressed by state agencies with diverse staff who are accountable to the public for their dedicated investment in equitably distributed urban forests and other forms of green infrastructure (Romm, 2002).
In Conclusion: The Environmental Justice Implications of Urban Forests as Uneven Social Nature in 21st-Century Cities

Increasingly scholars recognize that a lack of access to urban vegetation based on the color of people’s skin, their class standing, and their gender constitutes an environmental injustice perhaps as serious as the presence of environmental disamenities such as landfills and polluting factories (Heynen et al., 2006). This is in part the case because trees and other forms of greenery have the potential to mitigate heatwave events that kill hundreds of vulnerable urban residents every year and seriously injure many more. Poor and minority communities disproportionately exist in sectors of the city most likely to experience the warmest temperatures during extreme heat events (Jesdale et al., 2013). Trees shade buildings and keep them cooler while the evapotranspiration occurring in the canopy simultaneously cools the atmosphere around them. Heavily canopied neighborhoods can thus be considerably cooler than those that are not forested. Vigorous urban forests, therefore, have the potential to mitigate extreme heat events that otherwise feature increased urban mortality among the city’s most vulnerable people.

If climate scientists are correct about the future of our changing planet, we should expect increased incidences of extreme heatwaves in the US and elsewhere, and more heatwave-related mortality in cities as a result of rising temperatures (Diffenbaugh and Ashfaq, 2010). This makes vigorous and evenly distributed urban forests key to mitigating some of the worst effects of climate change on vulnerable urban populations the world over. We have at our disposal a socio-natural toolbox in urban forests for mitigating heat-related illness and death. In fact one of the side benefits of trees is they sequester carbon while cooling the environment. So enhancing the urban forest everywhere possible is one way we can also reduce (if only temporarily) the amount of carbon available in the atmosphere that exacerbates long-term temperature trends and extreme heat events. Of course many of the concerns cited in this chapter about uneven urban forests and environmental injustice are situated in Western contexts where shade trees are viewed favorably and prioritized by middle- and upper-class communities. It is thus important to reiterate that planting shade trees everywhere without communicating and working with residents will not be the solution to environmental injustice. Urban forestry should not preclude the existence of urban gardens where communities depend on them to enhance food security, nor should shade trees be prioritized over other culturally preferred forms of vegetation like fruit/nut trees that also mitigate the effects of the urban heat-island. What we have to do instead is consider how urban forests can be a substantial, yet democratic, part of any effort to create green, sustainable, urban futures. This will require extensive consultation with groups historically at the margins of forestry governance, including racial/ethnic minorities, lower classes, and women. This is certainly a challenge.

Discriminating market relations are exported to almost all growing urban centers in the developing world and the evidence thus far demonstrates cities are highly
polarized in terms of wealth and quality of life as a result (Davis, 2007). This means uneven urban forestry and associated injustice implications are likely to continue to be an important problem in a variety of urban contexts around the world. If commodity markets and related forces continue to restrict access to trees and other forms of vegetation to the world’s wealthiest neighborhoods, we will fail to engage in a greener and more equitable politics that supports human life everywhere. Governments, planners, academics, and residents therefore need to find ways to overcome the constraints of 20th-century urbanism that have traditionally restricted forest access to privileged people. If successful, greener governance for all people living in 21st-century cities is possible.

References


In cities, large swaths of soil are situated within public space landscaping and “green zones,” places more regulated than the soils of conventional farmland and mainstream agriculture. With more than 50% of the world’s population living in urban areas and 75% in the European Union, urban soils are a logical starting point to initiate a change in perception of humanity’s role in the natural world at large. New systems of valuing are necessary to rethink urban soils, their cultivation, and protection. This chapter explores a new paradigm for thinking about urban soil. Inherent in its argumentation is the notion that art and artistic research has the potential to offer radical realism and contingency and is as such complimentary to scientific research. Both scientific and artistic research are positioned in relation to one another in putting forward a new paradigm in which soil is considered an actor in its own right and which is engaged with human society in a reciprocal manner.

Soil as Value System: Entropical

The case study Entropical is an artistic research project by Debra Solomon and Jaromil initiated in the International Year of Soils. The exhibition was situated in a glass pavilion in Amsterdam’s Amstel Park, as part of the Zone2Source program curated by Alice Smits. Entropical reflects Solomon’s conceptual roots in the Land Art movement of the 1960s and ’70s, in particular artist Robert Smithson’s “Non-site” installations from 1969. Smithson, who wrote extensively on the topic of entropy in reference to urban development, displayed rubble from building sites as artistic material.

Metaphorically, the Entropical installation and resulting land-art work represent a reconciliation between the prevailing economic, ecological, and agricultural value systems, proposing an alternative “ecology” herein, in which at first human hubris, followed by human nurturing of soil processes position human activities within the soil-producing community underground.

Entropical consists of four art works in which the value and dynamics of the exchange of materials in the biological world is set against the abstract value of algorithms and computer calculations. It questions whether economic value systems can be brought into a direct productive relationship with ecosystem producers such as fungi in a time in which intensive computation is valued more than ecological regeneration. How, for example, could Bitcoin positively affect the rhizosphere, the layer of soil/soil life around the roots of plants?

The collective artworks of Entropical play with the concept of “entropy,” the second law of thermodynamics, a condition of constant change in
which materials and energy are transformed. But the term is also used in cryptography, where it refers to algorithmic processes and abstract information. Entropical therefore inquires into the incentive to produce ecological regeneration and value in an age in which running intensive computation (e.g., "mining Bitcoin") yields far more value than soil production and requisite ecological regeneration.  

En Necromasse, Sporeprint, Debra Solomon. 2015. Screen print on paper, 100 × 70 cm. The spores of the parasitic oyster mushroom leave ghostly fungal drawings.
In the REALBOTANIK installation, screen printed waste cardboard inoculated with oyster mushroom mycelia develops into thick mats warmed by the “waste” heat released by a computer mining blockchains, the technology behind the mining of cryptographic currencies such as Bitcoin. Heat as a by-product of the information and financialization industry is thus recycled in this installation in order to grow nutrients (for humans, for soil organisms, for plants) on cardboard, an abundant, noncontested urban waste material. After the exhibition, the mycelium mats that slowly take shape in the installation are used to restore poor urban soils by inoculating them with fungi as an act of nurturing.

During the two-month exhibition period two workshops were given in which the process of making the traditional Indonesian foodstuff tempeh becomes a metaphor for soil formation. The heat provided by the Bitcoin miner allows the tempeh fungus *Rhizopus oligosporus* to grow and bind the (soy)beans together. Just as *Rhizopus* “mines” the beans for nutrients, so do soil fungi mine soil aggregates for nutrients.

**REALBOTANIK** elaborates on the almost poetical impossibility of a comparison between the abstract processes of value creation in finance and the material value creation of living processes. The title refers to the term “Realpolitik,” reflecting value attributions and technoscience essentialism used to describe resource exchanges within the soil organism and within computer/financial networks and the notable differential between “use value” and “exchange value” in market evaluations.
Shade

It’s a civic resource, an index of inequality, and a requirement for public health. Shade should be a mandate for urban designers

Sam Bloch
This is the first article in a new series, “Writing the City.”

Tony’s Barber Shop, Cypress Park, Northeast Los Angeles. [Monica Nouwens for Places Journal]

As the sun rises in Los Angeles, a handful of passengers wait for a downtown bus in front of Tony’s Barber Shop, on an exposed stretch of Figueroa Street near the Pasadena Freeway. Like Matryoshka dolls, they stand one behind another, still and quiet, in the shadow cast by the person at the head of the line. It’s going to be another 80-degree day, and riders across the city are lining up behind street signs and telephone poles.

For years, the business owners on this block have tried to do something about the lack of shade. First someone planted banana trees and jammed an I-beam into the sidewalk well. Tony Cornejo, the barber, swears he didn’t do it, but he admits rigging up a gray canvas between a highway sign and parking lot fence to put a roof on the makeshift shelter. He was just taking care of the street, he said, so that the “ladies and children” who had grown accustomed to waiting out the heat in his shop could be comfortable outside. He dragged wooden crates under the canopy and nailed them together to create two long benches. In the shade, people ate their lunches, read magazines, scrolled through their phones. Can collectors rested. Bus drivers waited before beginning their shifts.

There are nearly 1,900 official bus shelters in Los Angeles city limits, but only a handful within two miles of Tony’s Barber Shop.¹ Who decides where the shade goes? You might imagine that transit planners call the shots — strategically placing shelters outside grocery stores and doctors’ offices on high-frequency routes, according to community need — but Los Angeles, like many cities, has outsourced the job. The first thousand shelters were installed in the 1980s by billboard companies in exchange for the right to sell ad space, and they tended to show up in wealthy areas where ad
revenue surpassed maintenance costs. In 2001, the mayor signed a deal to double the number of shelters and give public officials greater control over their placement. The new vendor agreed to install and maintain shelters throughout the city and offset its losses with freestanding ad kiosks in lucrative areas. But when politically savvy constituents complained about the coming spate of advertising, the city withheld permits, and the deal broke down. As the contract nears its end, the vendor, Outfront/Decaux, has installed only about 650 new shelters, roughly half of the projected number.

Another reason why there’s no bus shelter in front of Tony’s Barber Shop is the street design. Figueroa is a major artery with five travel lanes, two parking lanes, modest sidewalks, and storefronts that come right up to the edge of the property line. You can’t install a shelter here without disrupting underground utilities near the curb (a right-of-way controlled by multiple city agencies), violating the Americans with Disabilities Act (which requires four-foot clearance for wheelchairs), or blocking driveway sightlines. The same goes for street trees. On this block, shade is basically outlawed.

Sidewalk inspectors forced Cornejo to take down the canopy in the summer of 2015, just before the worst heat wave in 25 years rolled through Los Angeles. A spokesperson for the Department of Public Works said sidewalks have to be “safe and secure,” and he pointed to a section of the municipal code prohibiting “obstruction in the public right of way.” Never mind that Cornejo’s shelter, open at both ends, let pedestrians pass freely. It was deemed a safety hazard. You could argue that the law should be more flexible, and that as temperatures rise in this sun-baked city, the meaning of public safety should evolve. But in fact the city code had been revised to be
more punitive, so that violators could be fined and repeat offenders charged with misdemeanors under the city’s “overgrown vegetation enforcement program.” The hardline approach was pushed by councilmember Greig Smith, who wanted to promote the “aesthetic value” of “tidy and attractive” neighborhoods like the ones in his district, an affluent, car-dependent part of the San Fernando Valley. 

So here come the shade police. Los Angeles processes about 16,000 sidewalk obstructions annually, a category which includes informal shelters as well as unruly trees, piles of trash, and other encroachments on the right of way. The public has an interest in accessible sidewalks. But the enforcement of aesthetic values can quash grassroots self-improvement in neighborhoods like Cypress Park, where Cornejo’s rasquache oasis had its two-year run.

Urban theorist and historian Mike Davis says the city’s regulatory powers could be used for greater good. “Drive through South Central L.A., and just see what Latinos have done to their yards,” he urged me. I’ve seen it. Makeshift porticos made of blue poly tarps. Patios shaded by lush tree canopies, which cool the dry air as it blows inside the house. Catholic shrines and taco stands under pop-up gazebos. And those domestic enhancements spill over into the public realm. Sidewalk vendors cluster in the shade of large umbrellas, and neighbors string shade sails across the alleys. 

“Are there any tax advantages for it? No.” Davis said. “Are there city programs? Well, the city’s been forced to make a few concessions for urban gardens, but the larger phenomenon just goes unnoticed.” He argued that public action could dramatically transform the geography of shade. “If they got a little financing and were better supported, it could bring about wonders.”

Richard Neutra’s Lovell House, in the hills near Griffith Park, Los Angeles. [Monica Nouwens for Places Journal]

A People’s History of Shade
All you have to do is scoot across a satellite map of the Los Angeles Basin to see the tremendous shade disparity. Leafy neighborhoods are tucked in hillside canyons and built around golf courses.
High modernist homes embrace the sun as it flickers through labor-intensive thickets of eucalyptus. Awnings, paseos, and mature ficus trees shade high-end shopping districts. In the oceanfront city of Santa Monica, which has a dedicated municipal tree plan and a staff of public foresters, all 302 bus stops have been outfitted with fixed steel parasols (“blue spots”) that block the sun. Meanwhile, in the Los Angeles flats, there are vast gray expanses — playgrounds, parking lots, and wide roads — with almost no trees. Transit riders bake at unsheltered bus stops. The homeless take refuge in tunnels and under highway overpasses; some chain their tarps and tents to fences on Skid Row and wait out the day in the shadows of buildings across the street.

Shade is often understood as a luxury amenity, lending calm to courtyards and tree-lined boulevards, cooling and obscuring jewel boxes and glass cubes. But as deadly, hundred degree heatwaves become commonplace, we have to learn to see shade as a civic resource that is shared by all. In the shade, overheated bodies return to equilibrium. Blood circulation improves. People think clearly. They see better. In a physiological sense, they are themselves again. For people vulnerable to heat stress and exhaustion — outdoor workers, the elderly, the homeless — that can be the difference between life and death. Shade is thus an index of inequality, a requirement for public health, and a mandate for urban planners and designers. A few years back, Los Angeles passed sweeping revisions to the general plan meant to encourage residents to walk, bike, and take more buses and trains. But as Angelenos step out of their cars, they are discovering that many streets offer little relief from the oppressive sunshine. Not everyone has the stamina to wait out the heat at an unprotected bus stop, or the money to duck into an air-conditioned cafe. When we understand shade as a public resource — a kind of infrastructure, even — we can have better discussions about how to create it and distribute it fairly.

Yet cultural values complicate the provision of shade. Los Angeles is a low-rise city whose residents prize open air and sunshine. They show up at planning meetings to protest tall buildings that would block views or darken sunbathing decks, and police urge residents in high-crime
neighborhoods to cut down trees that hide drug dealing and prostitution. Shade trees are designed out of parks to discourage loitering and turf wars, and designed off streets where traffic engineers demand wide lanes and high visibility. Diffuse sunlight is rare in many parts of Los Angeles. You might trace this back to a cultural obsession with shadows and spotlights, drawing a line from Hollywood noir — in which long shadows and unlit corners represent the criminal underworld — to the contemporary politics of surveillance. The light reveals what hides in the dark.

When I think of Los Angeles, I picture Glendale Boulevard in Atwater Village, a streetcar suburb converted into a ten-lane automobile moonscape. People say they like this street for its wall of low-slung, pre-war storefronts, home to record stores and restaurants. To me, it’s a never-ending, vertiginous tunnel of light. I squint to avoid the glare from the white stucco walls, bare pavement, and car windows. From a climate perspective, bright surfaces are good; they absorb fewer sun rays and lessen the urban heat-island effect. But on an unshaded street they can also concentrate and intensify local sunlight.

Glendale Boulevard, Atwater Village, Northeast Los Angeles. [Monica Nouwens for Places Journal]

Frank Gehry’s Disney Concert Hall, Downtown Los Angeles. [Monica Nouwens for Places Journal]

Mark Schiler, an architecture professor at the University of Southern California, has studied visual and thermal glare in downtown Los Angeles. He found that heat reflected by the aluminum wings of Frank Gehry’s Disney Concert Hall was strong enough to melt traffic cones. Schiler suggested
thinking about direct light as ideal for performing oral surgery and diffuse light as ideal for reading a book. Put it that way, and most Angelenos would be happy to live in the shade. 14

At one time, they did. “Shade was integral, and incorporated into the urban design of southern California up until the 1930s,” Davis said. “If you go to most of the older agricultural towns ... the downtown streets were arcaded. They had the equivalent of awnings over the sidewalk.” Rancho homes had sleeping porches and shade trees, and buildings were oriented to keep their occupants cool. The original settlement of Los Angeles conformed roughly to the Law of the Indies, a royal ordinance that required streets to be laid out at a 45-degree angle, ensuring access to sun in the winter and shade in the summer. Spanish adobes were built around a central courtyard cooled by awnings and plants. 15 As the city grew, the California bungalow — a low, rectangular house, with wide eaves, inspired by British Indian hill stations — became popular with the middle class. “During the 1920s, they were actually prefabricated in factories,” Davis said. “There are tens of thousands of bungalows, particularly along the Alameda corridor ... that were manufactured by Pacific Ready-Cut Homes, which advertised itself as the Henry Ford of home construction.” 16


All that changed with the advent of cheap electricity. In 1936, the Los Angeles Bureau of Power and Light completed a 266-mile high-voltage transmission line from Boulder Dam (now Hoover Dam), which could supply 70 percent of the city’s power at low cost. Southern Californians bought mass-
produced housing with electric heating and air conditioning. By the end of World War II, there were nearly 4 million people living in Los Angeles County, and the new neighborhoods were organized around driveways and parking lots. Parts of the city, Davis said, became “virtually treeless deserts.”

Look at what happened to Pershing Square, which was once a glamorous five-acre park in the heart of the city. In John Parkinson’s 1910 design, three axial, brick-lined paths crossed an urban forest planted with international species like Canary Island date palms, bamboo, and Italian cypress. Under the enormous leaves of banana trees and birds of paradise, a white-collar lunchtime crowd read newspapers and books from a library cart, as “war strategists” rabble-roused in shirtsleeves. Then, in 1951, the park was bulldozed to install a three-story underground parking garage. The trees were relocated to Disneyland, where the ficuses shaded Main Street, U.S.A., and the date palms became scenery for the Jungle Cruise. On top of the parking garage, Pershing Square was reimagined as a thin, large expanse of grass. The subsurface made it impossible to plant deep-rooted trees. To make things worse, the square was fenced off from the promenaders and flâneurs. The park’s “nuts” and “blabbers” were relegated to its edges, where they competed for space with cars entering the garage through deep gashes in the surface.

Central Park (later Pershing Square), near the turn of the 20th century. [University of Southern California/California Historical Society]

It’s easy to see how this hostile design reflected the values of the peak automobile era, but there is more going on here. The destruction of urban refuge was part of a long-term strategy to discourage gay cruising, drug use, and other “shady” activities downtown. In 1964, business owners sponsored another redesign that was intended, in the hyperbolic words of the Los Angeles Times, to finally clear out the “deviates and criminals.” The city removed the perimeter benches and culled even
more palms and shade trees, so that office workers and shoppers could move through the park without being “accosted by derelicts and ‘bums.’” Sunlight was weaponized. “Before long, pedestrians will be walking through, instead of avoiding, Pershing Square,” the Times declared. “And that is why parks are built.”

But that is not why parks are built, and the design failed. Shorn of its canopy, surrounded by car traffic, the “see-through” Pershing Square was forsaken by the lunchtime crowd. It was not so much a dangerous place as it was ignoble: “a sort of last resort for people sleeping off the night before or dozing off the rest of their lives.” As Times columnist Art Seidenbaum moaned, “Out went sweet shade. In came sterility.”

Yet to a certain kind of politician, failure looked like success. Pershing Square set a template for Los Angeles whereby a park is not really a park, exactly, but a revenue-generating canvas. Five blocks north of the square sits Grand Park, a rectangular, twelve-acre space catering to downtown’s growing residential population. At the official opening in 2012, five thousand visitors stood in a freshly landscaped field to watch aerial dancers hang from City Hall, the de facto stage across the street. Movie screenings and concerts are held regularly, and the park rakes in around $1.5 million annually, mostly in rental fees. Like Pershing Square, Grand Park is built above a parking garage, which means there is no depth for deep-rooted shade trees, and no respite from the sun for visitors.

Rendering for FAB Park, with metal shade structures and oak and sycamore trees, adjacent to Grand Park, on the right edge of this image. [Studio-MLA]

Mia Lehrer. [Monica Nouwens for Places Journal]
“They like the events. They like the lawn. They like being there. But it’s very hot,” said urbanist Mia Lehrer. Her firm is designing a new park across the street, which is informed by critiques of Grand. FAB Park — an acronym for the location at First and Broadway — is projected to open in 2020. City officials, Lehrer said, “heard loud and clear from people that they wanted shade.” The design by OMA and Studio-MLA calls for 26-foot tall metal structures, meant to resemble enormous California poppies, shading a split-level amphitheater and outdoor restaurant. Native oak and sycamore trees will be planted at the edges.

Meanwhile, a new design for maligned Pershing Square — its sixth — was unveiled in 2016. Like prior efforts, the design competition was sponsored by nearby property owners; this group calls itself Pershing Square Renew. The winning proposal, by Agence Ter, again centers on a great lawn, with plenty of space for public events. One edge, opposite the Biltmore hotel, is dominated by a massive block-length arbor that the designers call a shade pergola.

The thin slats of its canopy will be hoisted 30 feet in the air by columns which split like a tree’s branches as they extend upward. The whole structure is to be subsumed by climbing vegetation, echoing the more natural tree grove planned for the other side of the park. In renderings, the pergola seems to recede into the foliage, as crowds mingle in diffuse, dappled light at restaurants and the farmer’s market, or on the viewing deck.

Rendering for the new Pershing Square, with shade pergola. [Agence Ter]

Conspicuously, there are no benches. I asked Agence Ter landscape designer Lauren Hamer about that. Shade creates shelter, she said. “And Los Angeles obviously has a very conflicted position towards creating shelter in the public realm,” which is reflected in attitudes toward homelessness. “Public spaces need to be open, so that people can move across them, as opposed to gathering there.” She cited a failed 1986 proposal by James Wines, which would have transformed the park into a miniature of the city itself — a “magic carpet” of different micro-climates, each module...
locked in a grid. Although Wines won an open design competition, his park was never funded or built. 65 Hamer said she thought that was because it would be too inviting: “a place for people to hang out.”

This expectation — that the park not be too social — is strange to the team at Agence Ter. “It’s exactly opposite the design traditions that we, as a French firm ... are used to working with,” said architect Annelies De Nijs. “For us, parks are mainly places that are a destination,” not merely a place for passing through. The pergola grapples with the site’s history: the tensions between privacy and surveillance, personal comfort and presumed safety. De Nijs said the architects have responded to the “very contested element” of public shade by designing a shelter that is “very high and very wide, so it becomes like one big overall ceiling, let’s say, that provides a lot of different types of spaces underneath,” rather than smaller shade structures which might be dominated by people who “gather, group, stay there, and see it as their little house.”

Miguel Contreras Learning Complex, a public high school in Westlake, Central Los Angeles. [Monica Nouwens for Places Journal]

The First ‘Million Tree’ Movement
High-concept architecture is one way to transform the shadescape of Los Angeles. Street trees are another. Unfortunately, the city’s most ubiquitous tree — the iconic Washington robusta, or Mexican fan palm — is about as useful in that respect as a telephone pole.

Palm trees have been identified with southern California since 1893, when Canary Island date palms — the fatter, stouter cousin — were displayed at the Chicago World’s Fair. On the trunk of one of those palms, boosters posted the daily temperatures at a San Diego beach, and the tree itself came to stand for “sunshine and soft air.” In his indispensable history, Trees in Paradise, Jared Farmer traces the palm’s transformation from a symbol of a healthy climate to a symbol of glamour, via its association with Hollywood. 26
Despite that early fame, palm trees did not really take over Los Angeles until the 1930s, when a citywide program set tens of thousands of palms along new or recently expanded roads. They were the ideal tree for an automobile landscape. Hardy, cheap, and able to grow anywhere, palm trees are basically weeds. Their shallow roots curl up into a ball, so they can be plugged into small pavement cuts without entangling underground sewer and water mains or buckling sidewalks. As Farmer puts it, palms are “symbiotic infrastructure,” beautifying the city without making a mess. Plus, as Mary Pickford once pointed out, the slender trunks don’t block the view of storefronts, which makes them ideal for window-shopping from the driver’s seat. The city’s first forester, L. Glenn Hall, planted more than 25,000 palm trees in 1931 alone. 27

Hall’s vision, though, was more ambitious than that. He planned to landscape all of Los Angeles’s roads with 1.2 million street trees. Tall palms, like Washingtonia robusta, would go on major thoroughfares, and side streets would be lined with elm, pine, red maple, liquidambar, ash, and sycamore. A Depression-era stimulus package provided enough funds to employ 400 men for six months. But the forestry department put the burden of watering and maintenance on property owners, and soon it charged for cutting new tree wells, too. Owners weren’t interested. So Hall concentrated his efforts on the 28 major boulevards that would serve the 1932 Olympics — including the now-iconic Ventura, Wilshire, Figueroa, Vermont, Western, and Crenshaw — and committed the city to pay for five years of tree maintenance. That may well have bankrupted the tree planting program, and before long the city was urging property owners to take on all costs, including the trees themselves. 28

This history partly explains the shade disparity in Los Angeles today. Consider the physical dimensions of a major city street in Hall’s time. Between the expanding road and narrowing
sidewalks was an open strip of grass, three to ten feet wide, known as the parkway. Having rejected a comprehensive parks system, Los Angeles relied on these roadside strips to plant its urban forest, but over time the parkways were diminished by various agencies in the name of civic improvements — chiefly, road widening. And the stewardship of these spaces was always ambiguous. The parkways are public land, owned and regulated by the city, but adjacent property owners are responsible for maintenance. Today, if you see a mature shade tree in Los Angeles, on a boulevard or residential side street, or spilling out over the fence of a front yard, you can assume that a private citizen, decades ago, decided to pay for it and maintain it. Canopy inequality thus follows lines of wealth.

Mount Washington, in the San Rafael Hills, Northeast Los Angeles. [Monica Nouwens for Places Journal]

Hancock Park, Central Los Angeles. [Monica Nouwens for Places Journal]

Hall’s vision for a tree-covered Los Angeles was revived in 2006, when Mayor Antonio Villaraigosa announced an initiative to plant one million street trees. (Cities like Denver, New York, and Shanghai have since joined the “Million Tree” movement.) The U.S. Forest Service researchers who mapped potential planting sites found that canopy cover in Los Angeles was around 18 percent, well below the national average of 27 percent. Moreover, it varied dramatically across the city. Among the
Shadiest areas was Hancock Park, a luxury neighborhood in the flats with double-size lots and underground utility lines, where developers planted trees in the wide parkways and arranged for homeowners to pay extra maintenance fees. The canopy stands out in satellite photos: a green rectangle in a sea of gray. Also high on the list were the hilltop communities of Bel Air and Mount Washington. A century ago, both areas were covered with grassland, desert chaparral, and sage scrub, with small walnut groves in difficult-to-access river canyons. But the hills offered fantastic views for wealthy Angelenos who wanted some distance from the city, and the trees they planted have matured into the city’s highest, densest canopy, drawing celebrities and politicians to live in what Reyner Banham called “thickets of privacy.”

Further east, in the valley between the Verdugo and San Gabriel mountains, the wealthy town of San Marino charges entrance fees to parks of shady sycamores and oaks.

Compare those hills and canyons with South Los Angeles, a 51-square-mile flatland developed around the turn of the last century — first as estates, just outside the city center, and then as a commuter suburb served by streetcar lines that ran down Western, Normandie, and Vermont avenues toward the Port of Los Angeles. Past the grounds of the University of Southern California, mansions and gabled cottages gave way to rows and rows of single-family craftsman bungalows on 50-foot lots, built out with consistent setbacks and neatly tailored parkways, often with a palm tree. Some of those middle-class streets were developed as worker housing by the Goodyear Tire company, which operated a factory on the periphery. Poorer residents lived in duplexes, fourplexes, and bungalow courts mixed among the single-family homes. In the 1920s and ‘30s, redlining forced black families to live near industrial land along the river, which the Home Owners’ Loan Corporation, the agency responsible for federal home financing, declared “a fit location for a slum clearance project.”

White veterans returned from the war to live in Watts’ Jordan Downs housing project, along with Avalon Gardens and Pueblo del Rio, complexes with common courtyard and green spaces. But they soon received government support to buy houses in new suburbs, outside the flats, with trendy ficuses shading the parkways.
Eight of Hall’s palmed avenues cut through South Los Angeles, and as the suburbs grew these arterials were reconfigured as six-lane highways, destroying their residential character. Over time, side streets were widened to accommodate industrial traffic. The imposition of freeways in the 1950s and ‘60s bisected historic neighborhoods and fatally damaged the streetcar business districts. As manufacturing left the city, unemployment rose and property values declined. Riots in 1965 and 1992 further damaged properties, paving the way for modern, parking-centric redevelopment and large apartment complexes, which pose special challenges for arborists.

While many American cities have figured out how to plant street trees in areas with high numbers of renters, the urban form of Los Angeles — all those curb cuts — makes that difficult. The dingbat, a classic local housing type, transforms the frontage and sidewalk into a driveway for parking underneath. City policy hasn’t helped, either. In the years following Hall’s beautification campaign, the forestry department would plant in parkways only if petitioned by 75 percent of the property owners on a block. (“Legal owners and not tenants,” a Times writer admonished.) Absentee landlords rarely bothered.

As a result of these historical forces, South Los Angeles is a hard place to find shade. The tree canopy cover is about 10 percent, compared to 53 percent in Bel Air. The residential side streets run east-west, so they are blasted with sun all day, and the commercial drags are grade-level highways. Even the schoolyards are barren, which is significant, since the Los Angeles Unified School District owns so much land. “The average LAUSD campus is 90 percent asphalt,” arborist Aaron Thomas said. Trees don’t count toward the state-mandated allotment of “playspace” per student, and operations managers prefer blacktop to green landscaping because it’s cheaper and easier to maintain. Arborists who plant trees at schools often have to enlist parent volunteers because watering isn’t in the janitors’ contracts.
Shade Deserts
So to the list of environmental injustices in this country, we can add the unequal distribution of shade. People living in poor neighborhoods, many of them black and brown, are exposed not only to higher levels of air pollution, soil toxins, contaminated water, and flood risk, but also to higher temperatures on unprotected streets. 38 But because shade is conceived as a luxury, or comfort, it hasn’t taken hold as a public health issue. Maybe we ought to start talking about shade deserts, just as we talk about neighborhoods without grocery stores as food deserts. In Sidewalks, Anastasia Loukaitou-Sideris and Renia Ehrenfeucht cite a study showing that household income is the only statistically significant variable in determining tree canopy. 40 Putting the burden of maintenance on residents means that trees in less-resourced neighborhoods will die out, stressed by drought or besieged by the Southland’s prodigious pest infections. And when they do, the wells and parkways stay empty.

Ted Watkins, a Ford plant employee, was early to recognize the need for shade in South Los Angeles. After the Watts riots, he took out a loan from the United Auto Workers to buy empty lots and build parks. He founded the Watts Labor Community Action Committee, which became one of the area’s largest private landowners, controlling many low-income apartment complexes. In the 1960s and ’70s, the organization hired neighborhood kids, including Watkins’s son Tim, to plant street trees as part of a city contract. Many of those trees are still standing, like the “monstrous” windbreaks Tim remembers planting on Pacific Coast Highway, as well as thick canopies of ficus in Hollywood and parkway groves in the San Fernando Valley.
Ted Watkins died in 1993, and his son is now the WLCAC president. On a driving tour of Watts, Tim pointed out a stretch of empty tree wells on Central Avenue, in front of a senior center operated by his organization. He’d like to fill those spaces, which have been empty for the better part of a decade, with ash trees, but the city won’t permit planting there. The senior center is built into a street-accessible parking lot, and guidelines discourage tree planting within six feet of a driveway or 45 feet of an intersection, in order to clear sightlines for drivers. 41 When I asked Watkins why the wells were empty in the first place, he sighed. “Maybe they were the wrong trees,” he offered. The only surviving trees on that side of the street are three shadeless palms.

Aaron Thomas, the arborist, lamented that the city won’t permit the planting of large trees in parkways less than five feet in width, because the roots could rip up sidewalks or destroy underground utilities. That effectively zones shade out of many poor neighborhoods. To teach me how an urban forester sees the world, he took me to Lincoln Heights, the oldest neighborhood outside downtown Los Angeles, where industrial infrastructure has made it impossible to plant trees that provide real shade. The riverbank that once supported a thriving riparian habitat was developed as factories and railyards. Over time, the Victorian mansions were demolished or converted. Roads were widened, parkways narrowed, and utilities installed. Thomas and I walked past a stretch of auto body shops and parking lots, on sidewalks that were only three feet wide. To plant a shade tree here, he explained, the street would have to be extensively reengineered and the sidewalk expanded. I pointed to an empty well across the street. Too close to a driveway, he said, and anyway, it would have to be a small, shrubby species, because of the criss-crossing wires overhead. “The rule is, if the branches are within 30 feet of the powerlines, then the DWP is allowed to come in and prune ‘em back.”

“That’s, like, every street tree,” I said.

“Often. And you’ve got a water main right there. So the roots of the tree will always be in conflict with it.”
Surveillance is another concern. With Tim Watkins, I toured a 2.5-acre lot in Watts that WLCAC has owned for over a decade. Two years ago, the organization broke ground there on a community garden, across the street from the Jordan Downs public housing project, and not far from industrial land that the city is remediating to become the future site of the housing complex. Toxic dust coats the minivans and trucks parked along the garden’s perimeter. A massive tree grows in the corner of the future garden, creating a shady tunnel over the sidewalk. Watkins told me police have asked him to remove it, because “loiterers hang out under the tree, and the helicopters can’t see them.” Eventually, he said, he’ll oblige. He pointed to a row of chest-high trunks nearby, trees that were cut back when a pole camera went up across the street. Now, they’re basically stumps — not removed, exactly, but trimmed so severely that they are likely to die.

Requests to deforest are common in heavily policed areas, where shade is perceived as a magnet for drug dealing and prostitution. In the early 2000s, the L.A. Police Department began installing security cameras in high-crime areas of the city, and it asked city crews to cut back trees that obscured sightlines. Eventually, street cops submitted so many requests that the overwhelmed forestry department started recommending tree removal in places where “regular maintenance” was not feasible. Officially, the city has no policy about removing shade for surveillance purposes, but it happens: public housing courtyards, including Jordan Downs’s, are bare of trees, and when a new pole camera goes up in a public park, the mature canopy around it vanishes. On private property, the approach is more informal. “It’s not that the police have the authority to say, you can’t plant trees here,” explained Michael Pinto, a principal at NAC Architecture who specializes in community design-build projects. “It’s that they have convinced community leaders that, if you want to save your community, you can’t have too many trees, because it restricts [the police’s] ability to do their jobs.”

Surveillance camera at Nickerson Gardens public housing, Watts, Los Angeles. [Monica Nouwens for Places Journal]

Planning for Shade
Perhaps cities would place a higher value on street trees if the benefits of shade were more widely understood. Ariane Middel, a climate scientist at Arizona State University, studies how people stay
comfortable outdoors. To do that, she mounted a multi-directional radiometer on a garden cart and dragged it through campus to record temperatures in different areas, while interviewing students about how they felt. To her surprise, it wasn’t air temperature, humidity, or wind speed that had the greatest effect on personal comfort. It was shade. In another study, conducted on a playground, she found the difference in surface temperature between shaded and unshaded asphalt was about 40 degrees Fahrenheit — and the difference was even greater on jungle gyms. Shade stops skin burns.

Surface temperatures also contribute to the urban heat island effect. We know cities are hotter than rural areas because there is more going on: more lights, air conditioning systems, cars, and so forth, converting electrical and chemical energy to heat. But cities also have more impervious surfaces that soak in the sun’s radiation — not just asphalt schoolyards, but big parking lots, wide roads, and dark roofs. On a hot day, those surfaces can absorb up to 90 percent of solar radiation, rising to 160 degrees, and release it as convection heat through the day and night. Los Angeles officials have backed sustainable design initiatives like tax incentives that encourage homeowners to install green roofs, and a prototype of so-called “cool pavement” — which reflects the sun’s heat through high-albedo white coating — in the San Fernando Valley. But those strategies won’t make people more comfortable if there isn’t already sufficient shade or tree canopy. Cool pavements on unshaded streets can actually make people hotter by reflecting the sunlight right back at them.

David Eisenman, a public health professor at UCLA, described heat stress as basically the opposite of a panic attack. The skin’s pores close as the body works hard to conserve water. Organs pump blood to the surface, which cools the skin as it comes in contact with more intense heat. As your body goes into overdrive, your mind goes into hibernation; it’s a kind of physical and mental withdrawal. Heat stress can also lead to more serious problems, especially for the young, the elderly, those who work outdoors, and the poor and socially isolated. “People get exhausted. They get lethargic. They get confused,” Eisenman said. “That also makes people less able to reach for water. ... They don’t recognize their thirst.” Too much heat can eventually overwhelm the regulatory system and lead to organ failure and heart attack.
Eisenman has been working with arborists and climate scientists deputized by the city council to figure out how to cool down Los Angeles. During a heat wave in 2006, county hospitals took in 17,348 patients for heat exhaustion, cramps, and heat strokes, as well as related conditions like kidney failure and heart attacks. Vulnerable people who couldn’t afford air conditioning died, while those who cranked up the AC released more greenhouse gases and generated more waste heat, making things worse for everyone. It’s likely that in 30 years, the global climate will have changed so much that winter in Los Angeles will feel like spring. Parts of Los Angeles County furthest from the ocean, pressed up against the San Gabriel foothills, will quadruple their days of extreme heat, when temperatures rise above 95 degrees. Downtown Los Angeles will have 22 days of extreme heat annually. Santa Monica, by comparison, will have one. 48

Mayor Eric Garcetti has pledged to combat climate change by reducing the city’s temperature by three degrees by 2050. 49 But solutions will vary geographically. Neighborhoods with wide sidewalks and parkways will get the best street trees, while areas with compromised infrastructure may be targeted for green roofs and cool pavements, which can lower the heat island effect without actually increasing comfort for people on the street. Lauren Faber, the Chief Sustainability Officer coordinating the city’s climate change response, told me she recognized a role for shade in lowering the temperature of the city. But still I wondered if the city needed to set additional goals, focusing on the creation of shade itself. Real estate developers, who in a very practical sense drive the design of this city, have not been incentivized to experiment with more durably shady streetscapes, like sidewalk canopies or covered walkways on their side of the property line. And in the effort to cool down the overall temperature, nobody is really focused on shade disparities, and the need to provide shelter to those who need it most.

Shade is not in the DNA of modern Los Angeles. After a rezoning in the 1930s, high-density developments like rowhouses and tenements were effectively banned, since the prevailing wisdom held that Los Angeles shouldn’t feel like an older East Coast city — dark, cramped, and overcrowded. New housing was required to have front and side yards, and deep setbacks were the norm. For decades, no building could be taller than the 27-story City Hall, and even when height
limits were raised in 1957, density was encouraged only in small pockets of the city. Then came the parking minimums. Beloved prewar residential types like the bungalow court were endangered, as the shaded commons were converted to parking. Even today, the city requires two parking spaces per housing unit. 50

Voters expressed their fear of density again in 1986, when they approved a ballot measure to reduce the floor-area ratio — the amount of buildable space, relative to lot size — in new commercial developments. 51 What does that have to do with shade? Open areas beneath habitable space — like an arcade cut out of a building, or a patio beneath a balcony — can be counted as floor space in the density ratio. That makes it hard for architects to justify such spaces to their clients. “The name of the game is to maximize floor area,” said architect Simon Ha, who is advising city planners as they rewrite the zoning code to avoid such disincentives. 52 Even installing a shade sail in a public park creates new “floor area,” requiring the provision of more parking. 53

Since the 1970s, an individual right to sunshine has been practically enshrined in state law. Many construction projects fall under the California Environmental Quality Act, a law that ostensibly requires review of public works, but in practical application can be used to thwart the development of tall buildings. One section of the act — on aesthetics — requires a “shadow analysis” of projects over five stories tall. Buildings of that height cast hundred-foot shadows, and as a condition of approval, developers can be required to kick in hundreds of thousands of dollars to mitigate the neighborhood impact. 54 NIMBYs everywhere are quick to complain when their views are blocked and their swimming pools shaded, but in California environmentalists have gone further with the Solar Rights Act, which protects homeowners from shadows falling on their solar panels. The law even goes so far as to define circumstances in which they can trim their neighbors’ trees. In 2013, a CEQA exemption was carved out for transit- oriented infill projects, which are no longer subject to aesthetic review. That means taller buildings, and longer shadows, along transit corridors — perhaps a good thing for climate resilience, but also another vector for shade disparity.
So long as some Angelenos remain allergic to tall buildings, and so long as developers are penalized for creating shady, outdoor spaces, the path of least resistance to reshading Los Angeles lies in walkable, tree-lined boulevards in the flats. Villaraigosa’s Million Tree Initiative has been renamed “City Plants” and folded into the L.A. Department of Water and Power as part of a state mandate to lower demand for electricity. The program charter evokes the noble goal of spreading the tree canopy more evenly throughout the city, but it stops short of a guarantee. Although the agency coordinates some public planting, mostly it donates trees to private citizens, who are responsible for maintenance. Director Elizabeth Skrzat calls shade trees a “leafy, green utility,” but the city doesn’t care for them as it does other environmental infrastructure, like sewage or water pipes, or powerlines.

Much of the actual street tree planting is done by non-profit groups funded by public grants. At his office in the Los Angeles River Center, Thomas showed me how he uses a state-developed tool, Enviroscreen, to identify potential areas for tree planting. The software pulls together demographic data like income, education, and race, along with environmental data like soil and air quality. Thomas is funded to work in the deepest, darkest red areas, which seem, on his map, to radiate out from the center of the city, along former river paths — now the major freeways and lines of light rail transit — and filling in along the flats of the floodplains.

One state grant funded the planting of about 1,800 trees on and near Vermont Avenue in South Los Angeles. During four planting days, sanitation crews cut 700 tree wells along 80 blocks of concrete sidewalks, while Thomas and other arborists planted tree saplings and staked them. The grant also paid for three years of tree watering. Thomas’s major contribution was on the residential side streets. In weeklong spurts over six months, his crews planted about 350 shade trees in parkways.

[Image: Empty tree well that hasn’t been replanted since it’s close to a driveway, Central Avenue, South Los Angeles. [Monica Nouwens for Places Journal]
where residents agreed to water the trees to maturity. Since Hall’s time, the city has relaxed its policy about property owners taking responsibility for maintenance. But when arborists go to areas like South Los Angeles, they are still limited by urban design factors like the narrow width of sidewalks and the location of underground water mains and overhead powerlines. The city tends to work with a fourfoot tree well standard when making new cuts in concrete, which prevents the planting of trees with large canopies, like coast live oaks, camphors, and Chinese elm — which you’ll still see in the city’s historic preservation areas, at the considerable expense of the property owners. Instead, the city plants smaller species, like Chinese flame, African sumac, Brisbane box, and tabebuia.

Central Avenue, South Los Angeles. [Monica Nouwens for Places Journal]

“The grant programs now for urban forestry are crazy,” Thomas said. “It’s money that we’ve never seen before. And what’s good is that the state has mandated that funding go, almost all of it, [toward tree planting in] disadvantaged communities.” The disconnect, he explained, is that it’s hard to abate climate change with such puny trees. “Disadvantaged communities, part of the reason they’re disadvantaged is because their infrastructure is extremely compromised,” he said, getting worked up. “There’s a lot of infrastructure and limited space. So the state’s a little naive in thinking that someone can easily go into these areas and just plant these massive canopy trees, get all this GHG sequestration, boom boom boom. We’ll give you money, just do it,” he sighed. “They have no idea of the real challenges behind these kinds of projects.”

Those challenges have grown more complex as the city’s infrastructure ages, even as urban forestry programs have gotten smarter. In 2006, the City Council voted to stop planting palms as street trees, recognizing their effectiveness as a symbol and their uselessness for offsetting global warming. But the city also no longer actively encourages shade-bearing ficuses because their
roots cause too much damage. Nearly half of the city’s sidewalks — 4,400 miles — are so thoroughly destroyed that they violate federal and state disability laws. In 2015, the city settled a lawsuit by agreeing to spend $1.4 billion over 30 years on sidewalk repairs and street enhancements. ⁶⁰

Legacy infrastructure: large shade trees on narrow sidewalks, in East L.A. [Monica Nouwens for Places Journal]

Thomas worries that those repairs could threaten the urban forest as mature shade trees are cut down. “99 percent of the time,” he claimed, crews will junk the street trees when they lay down new concrete. But it also presents an opportunity. Imagine what Los Angeles could do if it tied street enhancement to a comprehensive program of shade creation: widening the sidewalks, undergrounding powerlines, cutting bigger tree wells, planting leafy, drought-tresistant trees, and making room for arcades, galleries, and bus shelters.

In 2028, the city will again host the Olympic Summer Games. Meanwhile, it is legally obligated to repair its sidewalks and is working to enact climate sustainability plans. The convergence of these three factors has forced Los Angeles to grapple with street design on a bigger scale than ever before. The funding is there to do something truly transformative, especially in areas of Olympic redevelopment. Claire Bowin, a veteran city planner now in the planning department’s urban design studio, says street trees are the main focus, since they help meet many agencies’ long-term goals, from creating bird habitat to capturing stormwater.

Sidewalk damage on Hewitt Street, Arts District, Downtown Los Angeles. [Monica Nouwens for Places Journal]
A new urban forest is theoretically possible a decade from now. But what about all the people who need shade today? Why not do something simpler and faster, like promoting sidewalk canopies or specialized street furniture? Could Los Angeles have its own take on Santa Monica’s blue spots?

“That’s kind of ... a new different beast that we haven’t really thought about,” Bowin said. She noted that street furniture projects can get expensive fast, but she took a moment to spin out the thread: “Ideally, the city would come up with a single design,” one that serves multiple uses. “It’s a water cooler, and it’s wayfinding, and it’s shade.” I found it fascinating to listen to a city planner brainstorm in real time. “We’d have to go through a lot of testing of the different materials,” she continued. Perhaps the planning department could identify vendors and make shade elements part of their standard kit for street design. Developers could be given some kind of incentive to create shade. Or maybe, Bowin said, “the city’s just going to put them in [ourselves], because we recognize the value to that, and we’re going to take on the liability?”

I ask when it could happen. “That idea?” she laughs. “We just made it up, just now.”

Blue Spot shelters in Santa Monica, and a man standing in the shade of a palm tree. The shelters were designed by Lorcan O’Herlihy. [Monica Nouwens for Places Journal]

**A $10,000 Idea**

It’s not actually that hard to come up with designs for creating urban shade. What’s hard is building the political support to fund programs and roll out designs at scale, given the complexity of ownership and regulations on city streets. What we need, first of all, is urbanists in and outside City Hall who conceptualize shade itself as a public good.

Down the road from Tony’s Barber Shop is a triangular wedge of land caught between three major roads and choked by fourteen lanes of asphalt. It faces a used auto dealership called Cars 911. For decades, the Glassell Park transit island is where riders waited — after going to the cleaners and shopping at bakeries on Cypress Avenue — to board the streetcar. Five bus lines converge here today. Some passengers are heading to historic bungalows in the foothills of Mount Washington, others to the cookie-cutter rowhouses on San Fernando Road, or the massive new state park with
its soccer fields and basketball courts. If you were to visit a few years ago, you’d find hardly any shade. Some passengers huddled beneath a single, dying pine tree. Others used umbrellas.

In 2004, a neighborhood resident, Helene Schpak, decided the transit island needed a bus shelter. She planned to request one from her City Council representative. Then she met Pinto, who was teaching a community design-build class at SCI-Arc. He had his students design a transit center for the site, and they came up with a steel frame supporting a row of white, triangular shade sails, with benches below. Riders had unobstructed views of both sides of the islands, and the sails were angled to block the sun when it was highest in the sky. The design shaded every rider waiting there — far more than the handful of people who could fit under the canopy of Decaux’s standard-issue shelters.

Shade shelter at Glassell Park Transit Pavillion, Northeast Los Angeles. [Monica Nouwens for Places Journal]

To convince the city to make the investment, Schpak canvassed the transit island, collecting 650 signatures under a pop-up tent. As she met with her council office, the public works department, and the bureau of engineering, they all stated additional site requirements. The small, lightweight design project became the tripwire to rebuild an entire parcel of land. It wasn’t just that the non-standard structure — with unusual bench widths, and so forth — would need its own maintenance contract. There would have to be new curb cuts to make the site wheelchair-accessible. A gas line had to be rerouted, and the maze of electrical wiring that connected all the stoplights had to be put into utility boxes above ground. Pedestrian walkways would be moved to make room for bicycle parking, and the surrounding grass and trees replaced by drought-tolerant shrubs and bricks. The budget ballooned to $190,000, then $237,500, up to $630,000, before the final construction cost was set at $352,470. “That’s a hell of a lot of money for something that we thought was simple,” Schpak said. “It started out as a $10,000 idea. And it went on from there.”

For years, the site was fenced off for crews to reconfigure the utilities. During that time, the city endured record-breaking heatwaves. Mercury broke a glass thermometer downtown. The new apartments opened on San Fernando Road. The barber on Figueroa lost his battle with the city and took down his shade canvas. Then, thirteen years after Schpak first started asking about a bus
shelter, she attended the opening of the Glassell Park transit island. It didn’t have the lightweight, Erector-set look of the project that Pinto’s students had designed. The canopies were affixed to poles that extended deep underground. Instead of five triangles, angled for maximum effect, there were three — gray, not white. But there was shade. Bodies returned to equilibrium. Schpak thanked Pinto, and her councilmember, and the dues-paying members of the neighborhood improvement association, who saw what needed to be done and never squinted as the city changed around them.

Drawing by Joyce Earley Lyndon and Maynard Lyndon, from Growing Shade, a brief study of "tree umbrellas" in Switzerland, published in the third issue of Places Journal in 1984. The drawing was presented last week at a discussion of shade equity in Los Angeles convened by Christopher Hawthorne, the city’s chief design officer and a professor of practice at Occidental College.

EDITORS’ NOTE

This is the first article in a series, "Writing the City," a collaboration between Places Journal and the Columbia Journalism School’s MA program in Arts and Culture. Funded by a seed grant from Elise Jaffe + Jeffrey Brown, the series is designed to give early-career journalists an opportunity to produce an ambitious story on a topic that might otherwise receive scant attention.

NOTES

1. The city’s current bus-shelter vendor, Outfront/JCDecaux, helpfully provides a map, “Bus Shelters Around LA” (accessed March 2019).
2. After the first bus-shelter contracts were awarded in 1981 and 1982, advertising executives said they “would put every single shelter in West Los Angeles” if they could. Two decades later, researchers found commercial viability was the determining factor in shelter placement. See Rich Connell and Tracy Wood, “Bus Shelters: Why Aren’t They Where They’re Needed the Most?,” Los Angeles Times, July 26, 1987; and Philip Law and Brian D. Taylor, “Shelter from the Storm: Optimizing Distribution of Bus Stop Shelters in Los Angeles,” Transportation Research Record 1753 (January 2001), 79-85, https://doi.org/10.3141/1753-10.
3. Under the agreement, the company then known as Viacom/JCDecaux was supposed to replace 900 of 1,215 existing transit shelters and install 1,285 new shelters, to bring the citywide total to 2,500. The Department of Public Works would recommend locations for 40 percent of the new shelters, while Councilmembers would recommend 25 percent and Decaux 35 percent. For more on the negotiations around the street furniture program, see Council File 00-1073-53, and for more on how the agreement broke down, see City Controller Wendy Gruel’s audit in 2012. In an interview, Francois Nion, a Decaux executive who runs the street furniture program, blamed the City Council for the failure to meet targets. “They wanted to approve what the constituents were willing to approve,” he said. “If we don’t get the permits, then the quality of services is adjusted, automatically.”
4. “There is no emotion, there is no politics,” involved in shelter placement, Nion said. “Either it fits or it doesn’t fit.”
5. Email correspondence with Paul Gomez, spokesperson for the Los Angeles Department of Public Works, June 2018. A prohibition on sidewalk projections, Section 56.08, was included in the city’s first municipal code of 1936. Initially, the code prohibited “tree, bush or vegetation” that would “interfere with or obstruct the free passage of
pedestrians” on sidewalks. A subsequent revision specified a nine-foot clerestory (1956), and over the years lawmakers added “rubbish, trash ... or other waste and refuse” (1963) and “any structure, building ... or obstacle of any nature” (1964). Los Angeles began regulating canopies and awnings through a permit system in 1944. According to Principal City Planner Shana Bonstin, sidewalk projections like overhangs, arcades, and porticos fell out of favor because “it became too complicated as to who is responsible” for maintenance and liable for accidents. Since 1990, permit applicants have been required to carry insurance.

6. Smith’s motion to amend the city code was approved unanimously. See Council File 07-0699. Today, his district accounts for under 2 percent of the city’s transit ridership, according to ridership data provided by Nion.

7. Urban planner James Rojas has coined the term “Latino urbanism” to describe enhancements like these.

8. After a community garden in his district was hit with a citation, Councilmember Herb Wesson — whose district has among the highest transit ridership in the city — intervened to get enforcement suspended for parkway vegetable gardens. See Council File 13-0478-51.


11. Christopher Hawthorne, the former L.A. Times architecture critic who is now Chief Design Officer for the Garcetti administration, emphasized this point in an October 2018 email exchange. In 2015, the city council approved a sweeping revision of the general plan to encourage pedestrian-friendly streetscapes. The Mobility Plan 2035 explicitly links shade, walking, and improved public health. See Los Angeles Department of City Planning, “Mobility Plan 2035: An Element of the General Plan,” September 7, 2016.


15. In an interview, Rojas described “knowing how to control shade” as a fundamental Latino value. “All these Midwesterners moved to L.A. and saw the sunshine as a prize. They don’t want to see shade. It’s dark and gloomy and it’s all different things.” Latinos, on the other hand, see shade as part of their lives: “How do we live in darker places?” The courtyard, in particular, has a rich history in Los Angeles. Architects see it as a reaction to the city’s urban form, a “desert covering vast, undifferentiated, private expanses.” In this context, placemaking “is achieved by the exclusion of the surrounding context and by the definition of a protected interior.” See Stefanos Polyzoides, Roger Sherwood, and James Tice, Courtyard Housing in Los Angeles: A Typological Analysis (Princeton University Press, 1992), 4. On the orientation of the oldest streets, see Jeremy Rosenberg, “Laws That Shaped L.A.: Why Los Angeles Isn’t a Beach Town,” KCET, January 9, 2012.

16. A 1925 catalog shows ready-cut bungalows advertised with elaborate landscaping — acacias, grevilleas, eucalyptuses, pepper trees, and even date palms — planted against sun-facing exteriors. See this Flickr collection.


23. This sentence was amended after publication to identify Mia Lehrer as an urbanist rather than a landscape architect.

24. This sentence was corrected after publication to indicate that the pergola is designed for the side of the park opposite the Biltmore hotel, not the side nearest to the hotel.


26. Jared Farmer, Trees in Paradise: A California History (Norton, 2013), 336, 362. Farmer quotes the essayist Grace Ellery Channing who, in 1899, observed street crews ripping out pepper trees and installing the palms for new roads. She wrote bitterly that “palms — about as useful as telegraph poles for the purpose — serve as shade trees.”

27. This section draws heavily on Farmer’s Trees in Paradise, 367-383, as well as Nathan Masters, “A Brief History of Palm Trees in Southern California,” KCEC, December 7, 2011.


29. Since 1961, the City of Los Angeles has required developers to narrow sidewalks and widen roads in anticipation of increased automobile traffic. See Michael Manville, “Automatic Street Widening: Evidence from a Highway Dedication Law,” The Journal of Transport and Land Use, 10(1), 375–393. [PDF]


32. Quoted in Mike Davis, Ecology of Fear: Los Angeles and the Imagination of Disaster (Henry Holt, 1998), 141. For photos of these neighborhoods on the cusp of development, see the website of the educational nonprofit Water and Power Associates.


34. This brief history of urban form in South Los Angeles relies on an interview with Henrik Minassians, professor at Cal State Northridge; Ruth Wallach, Los Angeles Residential Architecture: Modernism Meets Eclecticism (The History Press, 2015), 127-31; and contemporaneous news accounts like Los Angeles Times, “Inglewood Ave. to Be Widened,” April 21, 1957.

35. “10,000 Miles of Parks,” Los Angeles Times, June 22, 1941. The city has since ended that policy, but it still can be hard to get a building’s tenants organized around a tree planting petition. Elizabeth Skrzat, the executive director of City Plants, compared it to making recycling programs work at apartment complexes. Both require tenants to be organized internally, and the variety of apartment architecture complicates interactions with city services.


37. The LA Unified School District owns 3,200 parcels totaling 6,400 acres across the county. How to manage those extensive holdings is the topic of a special report by the LA Unified Advisory Task Force, “LA Unified Real Estate Report,” March 2018. [PDF]

38. Interview with Michelle Bagnato, arborist at TreePeople.


41. Gomez, the public works spokesman, confirmed that two tree wells are ineligible, while two more would have to be assessed in person. The 45-feet spacing guideline is among the largest in California cities, according to researchers at UC Berkeley. See Elizabeth MacDonald, Alethea Harper, Jeff Williams, and Jason A. Hayter, “Street Trees and Intersection Safety,” Institute of Urban and Regional Development, working paper, University of California, Berkeley, 2006. [PDF]


43. This description of police practices is based on interviews with two South L.A. police officers, John Biondo and Ron Harrell, and a former gang detective who was granted anonymity to speak candidly. With Henrik Minassians, I saw overgrown street trees that harbored prostitution in South Los Angeles, and a city council spokesperson acknowledged her office directed the trimming. Aaron Thomas told me police ask him not to plant trees in some public housing complexes because they obscure views. See also a memo written by William A. Robertson,
Director of Street Services, on the subject of trimming and removing trees near police cameras, February 14, 2007, Council File 06-2445; and Frank Stolze, “LPD to increase surveillance camera use at housing projects,” KPCC, June 24, 2010. 44. Jennifer K. Vanos, Ariane Middel, Grant R. McRkercher, et. al., “Hot Playgrounds and Children’s Health: A Multiscale Analysis of Surface Temperatures in Arizona, USA,” Landscape and Urban Planning 146 (2016), https://doi.org/10.1016/j.landurbplan.2015.10.007; Harvey Bryan, “Outdoor Design Criteria: For the Central Phoenix/East Valley Light Rail Transit System,” n.d.; Mohammad Taleghani, David Sailor, and George A. Ban-Weiss, “Micrometeorological Observations to Predict the Impacts of Heat Mitigation Strategies on Pedestrian Thermal Comfort in a Los Angeles Neighborhood,” Environmental Research Letters 11 (2016), http://doi.org/10.1088/1748-9326/11/2/024003. Similarly, Pinto, the landscape architect, told me that for one of his projects, he shaded or removed 2.5 acres of asphalt in a school courtyard, reducing the ambient temperature of a Glendale neighborhood by 10 degrees. 45. Deborah Netburn, “L.A.’s Mayor Wants to Lower the City’s Temperature. These Scientists Are Figuring Out How to Do It,” Los Angeles Times, February 9, 2017; Dana Bartholomew, “‘Cool Pavement’ to Cut Urban Street Heat Gets First California Tryout in Canoga Park,” Los Angeles Daily News, May 20, 2017. See Taleghani, et al., for more on how cool pavements could make pedestrians feel hotter. 46. The “exaltation … in the atmosphere” has been observed in Los Angeles since its beginning. For more on the “slacking” effects of sunshine, see McWilliams, “The Folklore of Climatology,” and David Ulin, “The Exaltation in the Atmosphere” has been observed in Los Angeles since its beginning. For more on the “slacking” effects of sunshine, see McWilliams, “The Folklore of Climatology,” and David Ulin, “The Exaltation of an Urban Heat Island,” Los Angeles Magazine, February 2017. 47. The Fourth National Climate Assessment states that “high temperatures in the summer are conclusively linked to an increased risk of a range of illnesses and death, particularly among older adults, pregnant women, and children.” See Kristie L. Ebi, John M. Balbus, and John M. Balbus, et. al., “Human Health,” Fourth National Climate Assessment, 2018; and Vanos, et. al. 48. Netburn, “L.A.’s Mayor Wants to Lower the City’s Temperature”; Motion to Create Committee on Cooling and Urban Heat Impacts, August 22, 2017, Council File 15-0198-51; Los Angeles Urban Cooling Collaborative, “Climate Resilience Through Urban Greening and Cooling in Los Angeles: Webinar on Modeling Results: Reducing Heat-Related Deaths in LA County,” March 28, 2018. 49. This is not as ambitious as it might seem. By comparison, the Mayor of Melbourne, Australia, has a goal to reduce the city’s average temperature by seven degrees Fahrenheit by 2030. See Motion to Create Committee on Cooling and Urban Heat Impacts. 50. This history relies on an interview with policy analyst Mark Vallianatos; as well as Andrew Whittemore, “How the Federal Government Zoned America: The Federal Housing Administration and Zoning,” Los Angeles Magazine, February 2017. 51. See Council File 10-0019. 52. Interview with Bonstin. For an example of these fees, which in this case include $350,000 for “traffic protection” and $50,000 for a homeowner-directed private security patrol, see Council File 02-2320. 53. This is not to say planting street trees is easy, or universally popular. In historically oppressed neighborhoods, many residents do not trust city officials and can perceive tree planting as unwelcome “white environmentalism.” See Brennli Mock, “Why Detroit Residents Pushed Back Against Tree-Planting,” City Lab, January 11, 2019. Similarly, Aaron Thomas told me that at a neighborhood council meeting in Boyle Heights, a Latino enclave on Los Angeles’s east side, a woman pleaded with him not plant in the neighborhood because it would accelerate gentrification. 54. Stephanie Pincetl, “Implementing Municipal Tree Planting: Los Angeles Million-Tree Initiative,” Environmental Management 45 (February 2010), 227-38, https://doi.org/10.1007/s00267-009-9412-7. 55. These former river paths were briefly considered as the site of a network of public parks in the style of Boston’s Emerald Necklace. See Greg Hise and William Deverell, Eden by Design: The 1930 Olmsted-Bartholomew Plan for the Los Angeles Basin (University of California, 2000); and Davis, Ecology of Fear, 59-72. 56. Interview with Melinda Bartlett, Bureau of Sanitation. 57. Councilmember Janice Hahn, who introduced the measure, represents the harbor neighborhood of Wilmington, which has an abundance of Olympic-era palm trees. She noted that McPherson’s survey had reported a five

61. According to L.A. Metro data from 2017, around 320 boardings happen at the island on an average weekday.

Cite:
https://doi.org/10.22269/190423

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In between Collapsed Yet Still Rigid Distinctions

AbdouMaliq Simone

Abstract The extent to which certain kinds of people are inundated with toxins, pollutants, bacteria, viruses, violence, and disaster is well documented. The various ways in which the extension of urbanization as a planetary phenomenon has refigured geographies of sustenance is also well established. This article focuses, instead, on exploring the interfacial oscillations among that which is experienced as habitable or uninhabitable, as a kind of regionalizing of relationships between life and nonlife. It looks at how possibilities of living disappear and reappear, often in the least expected situations and circumstances, and at how inhabitation itself becomes increasingly precarious through various devices and calculations deployed in order to guarantee it. Drawing upon decades of research and program development in urban Africa and Southeast Asia, the article explores some of ways in which the habitable and uninhabitable are redescribed in terms of each other and considers how this redescription could be used to formulate more judicious modalities of viable urban development, as urbanization itself seems to posit increased dangers to the viability of many lives.

Keywords urbanization, collective life, politics of habitation, Global South

Many African and Asian cities and urban regions are considered bastions of the uninhabitable. They are the homes of marginalized black and brown bodies, but they cannot really be homes because their environments are incompatible with what normally would be required for human sustenance. Because these cities are widely considered to be the responsibility of those who inhabit them, the fact that they appear as uninhabitable also renders their inhabitants not
fully human. There is a cruel irony in this, as some of the most spectacular architectural and engineering feats of urban built environments are being constructed next to apparent wastelands, further eroding long-honed, albeit problematic, sociability (Roy and Ong 2011; Marshall 2003; Fu and Murray 2014).

That large numbers of these inhabitants are extracted from Africa and Asia—once through slavery, and now through both forced and voluntary migrations—so that a global economy can be conceived and materialized elsewhere constitutes an inextricable dependency of the fully human on those considered not so. It also solidifies the conditions through which that dependency can be disavowed or produced as a relationship of fundamental, natural inequality. That many African and Asian urban regions remain inundated with an underclass is thus proof of the normality of an uneven distribution of space that either will not be overcome or is rectified only through an almost unfathomable deployment of effort and resources (DiMuzio 2008; Ghetner 2010; Gidwani and Reddy 2011; Heron 2011). This view also suggests that a definitive and unyielding image of urban efficacy and human thriving exists and should be the object of aspiration for those living in supposedly uninhabitable spaces (Legg 2007; Heller and Evans 2010; Roy 2009; Shepherd, Leitner, and Maringanti 2013).

Questions about what is inhabitable or not have long defined the nature and governance of urban life (Foucault 2009; Thacker 2009; Adams 2014). There is also a massive, varied literature that articulates the relationships among dispossession, the expropriation of resourcefulness, the constitution of property, the dissolution of collective solidarities, the circumscription of maneuverability, the imposition of law, and the autonomy of market, and, in doing so, accounts for the figuration of what counts as urban habitation (Amin 1974; Lubeck and Walton 1979; King 1989; Bhala and Lapeyre 1997; Glassman and Samatar 1997; Chakrabarty 2000; Hart 2002; Harvey 2003; Blomley 2004; Sparke 2007; Peck, Theodore, and Brenner 2009; McCann and Ward 2010; Glassman 2011; Chaudhury 2012; Rossi 2013). Without denying the ravages of long-term structural impoverishment to which many African and Asian cities are subjected, we can ask whether the so-called uninhabitable does not necessarily point to a depleted form of urban life but simply to a different form—one that constantly lives under specific threats and incompletion. But as long as our imaginations, policies, and governing practices adhere to a tightly drawn sense of what constitutes normal humanity, it is difficult to recognize such urban life as a generative difference (Huyssen 2008; Robinson 2013). As long as cities, or large swathes of territory within them, are seen as fundamentally uninhabitable—as incapable of generating new capacities and in dire need of rescue and remaking through the massive infusion of external resources or a renewed commitment to a vast repertoire of disciplinary tools—the critical impetus is lost from which to make these cities something else than they are now.

As a reading of Gilles Deleuze (1995) would indicate, these different modes of the habitable cannot be part of an overarching program of development for a particular social body or territory; they do not presume the existence of a living entity to which they contribute. Rather, maneuvers toward such equity of possibilities must disrupt the calculations that assume a particular kind of distribution of authority or capacity among preexistent identities. Instead, the focus might be on
the emergent figurations of social bodies constituted through the intersections of different ways of inhabiting the urban.

“It is because of the action of the field of individuation that such and such differential relations and such and such distinctive points (pre-individual fields) are actualised” (Deleuze 1995: 247). As Achille Mbembe (2013) indicates, inhabitants situated in the cross fires of trajectories of sense and subjugation take and do what they can to create fugitive, slippery spaces, always under the grip of some imposed redemptive maneuvers that never quite succeed.

Given the persistence of base subjugations operating under the auspices of a continuously inventive capitalism, which has promised to leave colonially imposed differences far behind (Chakrabarty 2012), how is it possible to upend the distinctions between the inhabitable and uninhabitable as clear demarcations of specific dispositions? How might they be seen as operations of subterfuge or critique—practices that take nothing for granted, that lend stability and possibilities of transformation to the precarious, or that undermine the pretensions of all that is considered secure? At the same time, we need to retain these distinctions as a way of stopping ourselves from thinking that, no matter what crises and conditions people face, somehow resilient adaptation is always possible.

Based on long-term work in urban Africa and, more recently, Jakarta, this article attempts to generate some strategic reflections on how to think about such an interstice of effaced and sustained distinctions between the habitable and uninhabitable. This is particularly done in the context of accelerated transformations and obduracies in mega-urban regions of what was considered to be the Global South. I want to explore some of the ways in which the habitable and uninhabitable are, and can be, redescribed in terms of each other.

The cities from which most of the article’s ethnographic details are drawn, though major metropolitan areas in their own right, have historically been at the fringes of where normative urban planning and policymaking has been constituted. While significant arguments have been made about the salience of the urban margins for generating “pilot projects” in urban development, later generalized to the metropoles of economic and political power (King 1989; Wright 2002), the persistent singularities of urban processes in cities like Kinshasa and Jakarta are not easily mobilized to disarm this normative. Nevertheless, they pose a swirling of details that continuously grate against, circumvent, or infect the materializing of particular instantiations of the urban and that open up the possibilities of many rhythmic modulations of the relationships between power, policy, and popular practices. This is what Valentina Napolitano (2015: 57) calls “the part of an urban re-articulation (that) has become the material trace of a knotting of histories and condensation of fears, violence, intimacies and forms of belonging.”

The cities invoked here have been subjected to imperial and colonial projects of varying traction, violence, and efficacy. Places like Kinshasa, Khartoum, and Jakarta were built with all kinds of complicities, seductions, and betrayals, and as such they exude ambiguous, troubling memories etched into the built environment. They nevertheless retain the details of what might have been, of projects only partially realized, of collectively self-constructed built environments that sometimes demonstrate inordinate capacities to create viable livelihoods out of dispersed fragments. But they also reveal
messy, unwieldy, and often violent natures that push and pull people and materials in many directions, throwing them off balance and into a lifetime of half-baked compensations.

In the extension of urbanization across a planetary trajectory, these details are seemingly subject to an unprecedented effacement, even as variously scaled urban regimes mobilize them as materials to enable the emplacement of investment and speculation (Brenner and Schmid 2015). Kinshasa and Jakarta, different as they are from each other (and as they are from everywhere else), may not be the epicenters from which a critique of the urban normative might be most effectively issued. Still, the uncertain interfaces of their relationships with the larger world, reflected in both the speed at which they are being remade and the endurance of long-honed capacities to build economies through collaborative social relations, make them critical sites in this project of redescription—states of existence that might be.

In an era where the normality of any standardized version of humanity is continuously upended in the constantly mutating assemblages of biological, technological, and digital materials, notions about what constitutes normal urban residence continue to be applied to the ways in which the value and efficacy of African and Asian urbanities are judged. A supposedly countervailing move, whereby the resilience and resourcefulness of those who have almost nothing is emphasized, ends up reiterating these same versions. This is because resilience is usually couched in a form of surprise, a kind of “yes, even the poor have a way of proving their humanity.” Surviving the uninhabitable then becomes testament to a human will and capacity that minimizes the impact of injustices past and present (Dawson 2009). It feeds into claims that if only the inhabitants of these cities would do what humans are truly capable of doing and apply their skills of survival to the urgencies at hand, then new cities would be truly possible (Amin 2013; MacKinnon and Derickson 2013).

Those that inhabit the supposedly uninhabitable are subject to seemingly endless lists of deprivation. Hundreds of research projects have demonstrated correlations between health, mortality, environmental conditions, economic poverty, spatial exclusion, racial identity, and political justice. But to what extent do these indices of deprivation and violence normalize as uninhabitable the places where many people attempt to make a life. Normative moral inclinations would seem to render intolerable conditions that shorten lives, waste potentials, and produce debilitating traumas, misery, and chronic illness. Such inclinations would seem to compel the alleviation of suffering and the empowerment of human capacity.

But we have to consider the extent to which these moral inclinations get in the way of seeing and understanding the collective memories, the exchanges and reciprocities, the breakthroughs and failures, and the material residues of countless efforts to endure through conditions that are perceived and experienced in many different ways by these residents. While survival entails what has to be done, endurance considers what “ought to be done” (Negarestani 2014). The two do not necessarily intersect or remain separate, and both are operative in the everyday lives of those who occupy the uninhabitable. There is the creation and relationship to a ground, a place, and an infrastructure of individual and collective existence, no matter how provisional, improvised, or run-down.
In cities where the machinery of decision-making, planning, resource allocation, and service provision hobbles along in bureaucratic ineptness, improvised deals, and massively skewed distributions, the majority of inhabitants still largely rule their own worlds. They do so to the extent that they continuously construct and update the practices, designs, and materials that are put to work in engineering spaces of inhabitation. Perhaps more importantly, many continue to reticulate the experiences, skills, perceptions, and networks of the people around them in order to materialize circuits through which needed goods, services, and information pass (Chattopadhyay 2006; Benjamin 2008; Bayat 2010; McFarlane 2011a; Nielsen 2011).

Everywhere and Nowhere Is Habitable

In many respects, the uninhabitable is an anachronistic concept—not simply in the fact that people have long built homes and economic activities on the surfaces of the most ruinous and dire conditions but also in the ways in which the uninhabitable, or what Austin Zeiderman (2013) calls “living dangerously,” is used as the medium through which certain segments of cities are able to compel recognition of their existence. Additionally, they secure services and opportunities that would be beyond their grasp if they did not pose themselves as a population at risk. Habiting the uninhabitable then becomes the means through which the poor may enter into various entanglements of provisioning and compliance, where they gain a foothold as normative citizens and where the severity of the risks they face reiterate, rather than challenge, the functionality of liberal urban governance. Additionally, as Sally Sargeson (2013: 1076) points out in her examination of the expropriation of rural land in China, urbanization acts through a violence that demeans rural existence and inflicts long-lasting harm: “Re-zoning land for urban construction and expropriating it thus become means of resolving the purported problems of collective ownership, of transforming rural land and housing from dead capital into fungible assets that can be sold, leased and mortgaged, and spurring cycles of building, refurbishment, demolition and rebuilding. The violence of property definition, exclusion, land use regulation, zoning and expropriation constitutes urban development.”

The uninhabitable is a tricky concept given the global drives to render everything habitable, no matter the quality. The impetus toward habitation appears across different scenarios and backgrounds. For example, while desert cities have existed for a long time, the massive conversion of desert climates into urban regions demonstrates a kind of perverse triumph of the built environment over physical terrain, albeit at enormous resource costs. This may be a long way from squatting on rubbish piles or covering squalid creeks with makeshift shanties, but it does point to a conviction that cities can refigure complex ecologies with complex adaptations and insulate themselves from adverse surroundings. That even the best-engineered cities succumb to volatile weather and floods is not yet a sufficient deterrent to this conviction.

That much of Asia has acted as fodder for the proof of developmental dreams—in the sense that backward economies, with determined and sometimes coercive governmental action and inward financial flows, could produce well-planned, thriving metropolises—and that much of Africa now seems poised to follow in these footsteps points to this sense of endlessly renewable habitation. But something else
may also be going on, for some cities seem to expand without clear economic logic.

Take Kinshasa, for example, which is the world’s poorest city of its size. Although the historic core of the city fronts a semicircled river that acts as a national boundary—limiting the trajectories of where the city’s physical growth can take place—the real boundaries of the city expand exponentially each year, so that one can still claim to be inside Kinshasa some 90 kilometers from that historic core. It is hard to precisely determine the demographics of the city. Depending on whom you talk to, its size ranges from 9 to 15 million, which is a lot of uncertainty, and even geographic information system analyses are hard-pressed to come up with reasonably accurate figures. Even allowing for the vast tracks of land near the center that are tied up as military encampments or the remnants of colonially demarcated buffer zones, much of the city hovers across tightly packed nodes dispersed across long distances.

So while many opportunities for systematic infilling may exist, the near universal perception in Kinshasa is that the city is moving elsewhere. As a result, many inhabitants hurry to stake their claims at ever-shifting peripheries, which still seem to be in the middle of nowhere. In order to maintain a staked claim, a household has to implant someone on site in order to protect it, as the relative newness and vacancy of these areas mean that households stay where they are for the moment. As this sense of expansion is materialized in all directions away from the river, households are also concerned about missing the “real action,” so they will also stake additional claims in completely different parts of the city’s periphery. While the actual acquisition of new property may not require large amounts of money, the fact that households have to support some kind of physical presence in these different locations, run back and forth between them along congested roads, and maintain household economies in the place where they have been all along—and where they have been barely making it—results in substantial expenditures of time and money.

As large numbers of residents are swept up in this anticipation, their efforts indeed urbanize the periphery, with markets, schools, churches, and outposts of administrative offices. The rendering of the bush into extensions of Kinshasa is, in part, driven by the “old standard” of driving up land values through speculation and the infusion of external finance, which jacks up property prices in older residential districts near the commercial core. Yet there is something almost evangelical in the determination of Kinois to stretch the city, as if these efforts offer some redemptive compensation for the difficulties most of them face just putting bread on the table.

As Filip De Boeck (De Boeck and Plissart 2004; De Boeck 2011, 2012) in his magisterial writings on the city points out, Kinshasa is a city of microinfrastructures and the power of the minimum, where the exigency is to make as much as possible out of articulating imagination and small things and to insert oneself into every conceivable interstice, using whatever is available as a support for commercial activity. It is important to find just the right location to capture someone’s fleeting inclination to buy something from you at a moment’s notice, to perform everyday life as if it were full of abundance, even though most of the population is living on less than US$1 a day.

As De Boeck indicates, Kinshasa is a city of the “now,” in that it emphasizes the need for individuals to be prepared to act in many different places and in many
different ways without warning, without preparation. This orientation reinforces the tentativeness of social life, because the ability to affirm a collective body requires a sense of delay, of memory, of rehearsing ways different backgrounds and capacities can work together. I talk to you, you talk to me, we talk to others, and in the process, we acquire memory and develop understanding based on the delays involved in this process—the circuits of call and response and call again. But in Kinshasa the imperatives to act without reference, the immediacy of the all or nothing, make the consolidation of social life difficult.

Kinshasa is a city that both frightens and surprises itself with its endurance. So expressions of confidence take shape through these investments in the city’s extension—to make habitable that which lies fallow. A bush is a city in waiting.

It does not seem to matter that these sentiments make daily life all the more difficult. Running around to manage an extended presence in the urban region leaves little time to tend to more localized relationships. In a city where many youth are deeply suspicious of the adults closest to them, where early death is usually explained as the malicious actions of immediate family, where the management of critical cultural conventions—usually the purview of elders—is seized upon by youth as an expression of the vacuum of any real authority, households would seem to make their current addresses more uninhabitable as the impulse for new habitation intensifies. So the relationship between the habitable and uninhabitable oscillates, diverges, and reconnects in ways that make the provision of “new land” and new opportunities something that extends and builds upon the solidity of the existent city but also, at the same time, seems to waste it.

In the ambiguity of this relationship, we are reminded of what Michael Taussig (1980, 1984, 1995) talks about as “devil pacts” in his ethnographies of the Columbian Pacific. The determination to convert land into platforms for the production or extraction of things whose final use is elsewhere upends intricate ecological systems, which have provided living zones for creatures of all kinds. It generates wealth that can only be wasted. What is excessive to the necessity to live—the cultivation of cash crops, the effluvial toxicity of mined streams—takes the form of exorbitant profit that can only be managed as a pact with the devil, as the willingness to undermine the very supports of life. The will to inhabit everything produces the uninhabitable through both the conceit that any part of the earth is available for habitation and the conceit that the act of inhabiting proves its own worth, one that needs no further justification. The immanent conclusion of this process is that there may be nowhere left to go, as these acts of inhabitation leave more extensive footprints—imprinted in every aspect of the earth and its atmosphere—undone only in unimaginable time scales (Morton 2013).

The extension of Kinshasa into its hinterlands prolongs a game that potentially runs out of space and time, as the impacts of urbanization “talk back” through the shrinkage of virtuous terrain. As such, there is much worried discussion in Africa and Asia about the massive demographic shifts portended by climate change, about future impossibilities for the habitation of coastal and semiarid cities. These are addressed through the acceleration of technological innovations that attempt to readapt populations to increasingly aquatic urban environments, by seeking ways to mitigate the impacts of extreme weather,
or by shifting developments to what is considered safer ground. What I suggest is not so much that the designs and technicities of adaptation are not useful but that we have to find ways of detaching them from the belief that they can prolong our normative orientations and will to habitation.

Equally troubling is the inversion of this position. Instead of acting as if all places and conditions are potentially habitable, incipient forms of urban governance act as if the ability to inhabit is not as important as the ability to “ride the uninhabitable.” It as if “to reside” means “to surf”: to ride the crests, the ebbs and swells, of greater or lesser turbulence (Braun 2014). To sustain place is less important than to speed up the diffusion of crisis, to speed up the dissociation of places from cumbersome histories, so that these places can be hedged against the other. Places become embodiments for the calculation of risks. They are emptied of specific content and repackaged as indices of investment, capable of turning damaged materials and lives into harvests of yet to be determined products or capacities. The emphasis here is on the ability to harness whatever takes place, whether habitable or not.

No Secrets about What Is Going On

Even when coupled as the mirror image of our will to habitation, notions of the uninhabitable would seem anachronistic in light of the evidence it is possible to amass about the facts of where and how people live. If a certain part of the definition of the uninhabitable entails the extent to which a particular place is closed off from access to a larger world or is, in turn, relatively impermeable to incursions from the outside, then, in this respect, no place is uninhabitable. Even in the most seemingly depleted cities—Maiduguri, Bangui, Juba, Homs, or Gaza—there are doors to walk through. It is not the doors, the ways in and out, that particular cities seem to lack but rather a notion of where these doors lead. Are they like doors in a large house, which lead progressively across spaces a person can feel as connected, as somehow linked to each other? Or do the doors open onto to some kind of “Alice in Wonderland” reality, where the urgency of getting out of a particular city usually leads to doors that open onto completely disorienting experiences, where it is nearly impossible to attain a foothold or a clear sense of what is going on? In a world where every inch of the earth’s surface can be surveyed, from which information can be drawn and specific persons or buildings targeted, little remains unknown.

In the past, what was considered known was a matter of what surveying eyes were interested in paying attention to. Vast interiors of supposedly uninhabited neighborhoods were not considered worth the effort that would have been required to engage with them. For long periods of time, important population centers in major cities were not even designated on maps because they were bastions of illegal occupation and poverty. It was not worth paying attention to the bidonvilles, periurban settlements, shantytowns, or even long-honed popular working and lower-middle-class districts because there was nothing going on there of any importance. Nothing was taking place, and as such, there was nothing to see.

Such occlusion sometimes could operate to the advantage of a particular part of the city. In the outer regions of Khartoum’s Omdurman district, just before the city met the desert, where I lived for three years, there was a densely compacted maze of mud structures that from the air looked like the crumbling remains
of some vast and abandoned way station. Yet, Souk Libya, as this place was known, was a pounding market where virtually everything was for sale, from the latest East Asian electronics to surface-to-air missiles to herds of sheep and camels. Brokers of at least fifteen different African nationalities controlled specific sectors of the market, and traders came from as far away as Nigeria, the Democratic Republic of Congo, and Tanzania, mediating deals across the Middle East. Everyone in Khartoum claimed to have known about the market, had gone there once or twice, but it still functioned as a public secret, a place beyond regulation and policing, because at its surface, it always exuded the sense that nothing happened there.

Now we live in an era where nothing is to be missed, where the prevailing assumption is that something is going on, no matter how a place looks, and that all places are prospects for making money. The higher the risks, the more potential for money to be made or lost. Part of the impetus of this interest is the recognition that the purportedly abandoned or backward parts of the world are fertile grounds for the implantation of terrorists. Even if this may be the case, the capacity of such “invaders” to demonstrate the viability of these places as platforms for making money may be more salient. The Sahara is a busy sea of transshipment of all kinds, and somehow the doors of the most seemingly marginal towns of Asia and Africa open directly onto Dubai and Guangzhou.

Of course, within specific towns and cities, there is great variance in the availability of particular doors, as many inhabitants are relegated to highly circumscribed spaces of operation; they may barely know anything outside their immediate vicinity, let alone anything about a larger world. No matter how much the world may come to them, through media, cellphones, Internet, information, and rumor, most of the doors available open to the same room. There are times when these doors are tightly controlled, as if, in a larger world of operations, it is important to keep prying eyes away in order to protect the little you have or to exert a semblance of control over a capacity to reach beyond it.

Just as Chungking Mansions—that one-square-block warren of “guest-houses,” small restaurants, and trading stalls in Hong Kong that has long served as a favorite metaphor for the opacities of “old school” international trade—is divided up into different turf, where exits, stairwells, and elevators are “secured” by various groups, much conflict in cities is also about “controlling the doors”: the entrances and exits. In Maiduguri, Nigeria, for example, the intensity of violence deployed by Boko Haram is largely about controlling where the doors will go. In its seemingly pathological fear of education and other public institutions, the group suggests that the extinction of the poor is through a door right around the corner and that the only thing they have to work with is an adamant and stark rendering of faith (Agbiboa 2014).

For many urban inhabitants, walking through such doors has left them feeling that their lives are situated in the middle of the doorway—that no matter how many thresholds they cross, no matter how much knowledge they may have about any given place in their city, they are somewhere in the middle between the habitable and uninhabitable. This is an ambivalence that all the information-saturated tagging of environments will not undo. No matter how available regression-analyzed correlations among real estate values, availability of amenities, public services, history of
property transactions, rates of growth, demographic profiles, capital investments, and local government budgetary allocations may be to any smartphone user inquiring about a specific location, a gnawing sense of uncertainty may remain (Stiegler 2013; Fisher 2014).

In Bangkok, for example, the city always tries to “retain face” despite all efforts to deface it. In other words, the city remains full of markers—the surfaces of shrines, historical monuments, sexual economies, and mass consumption—that seemingly provide an unyielding sense of history and orientation. This prolonging of a sense of distinctive doors that interconnect different spaces of life into virtuous contiguities entails the responsibility to forget. The Bangkok resident must forget that the need to retain the calmness of surfaces—this sense that one door leads to another, from king to monk to shopkeeper to businessmen to sex worker to tourist—has wreaked havoc on the city in terms of its infrastructure, natural resources, and built environment (King 2008). Within many of the cheap condominiums where many Bangkok residents now live, there is an incessant anxiety about the appearance of ghosts, spurring discussions about the yearning for the happiness of an earlier time, however entangled with poverty and messiness it may have been (John-son 2013). At the same time, there is an abiding fascination with the hypersexualized and disembodied digital landscapes that would seem to suggest the undoing of the cultural references through which that former happiness is expressed.

This ambivalence suggests a critical conundrum in working through the politics of habitation. For who is to determine what is habitable and what is not, and according to what criteria? How do we take the present distribution of habitation across many places normatively considered to be uninhabitable and decide where people can live or not, and under what circumstances? In the exigencies to raise money for needed infrastructure, to provide work for a more youthful urban population, to work out more functional balances between maximizing the value of physical assets and assuring that the city remains affordable for its residents, the standards used in constituting normative habitation become more homogeneous and constrained precisely during an era in which we are more aware then ever before of the sheer plurality of situations that people are inhabiting.

In providing a narrower series of formats for how people live, and for spatializing the distribution of these formats in ways that require many to live at great distances from “where the action is” (without having much action really going on, in the places they do live), the doors that residents navigate increasingly lead into an open-ended, generalized world. The features of this world may be easily recognizable but without much of a sense of differentiation, anchorage, or mediation. No matter how race-infused the sensibility of “us and them” might have been, doors now seem to open up onto a diffuse sense of “us and us,” where inhabitants have to figure themselves out in relationship to a largely undifferentiated world of individuals who are in almost exactly the same boat as they are. These are doors that would seem to leave little room for exchange, reciprocity, and collaboration (Berardi 2009).

For in the spaces of inhabitation where things and bodies did not seem properly spaced out or organized—and are now largely resented by many for their messiness, dysfunction, and the amount of time and effort required to make things work and for people to get along—there
was often a dynamic practice of social interchange. Different ways of doing things had to pass through each other, had to find ways to translate their differences, and sometimes made use of these differences as tools to assemble collaborations and deals between very different kinds of activities and backgrounds. Doors led to different experiences and spaces, and thus doors themselves meant something: as rites of passage, as infrastructures of mediation, or as tools for letting things in and out but in various exposures and intensities. Doors need not be open or closed all the way in order to allow different angles and perspectives (Smart and Lin 2007; Telles and Hirata 2007; Bayat 2010; Millar 2014; Vasudevan 2014).

How can we operate somewhere between the tightening standardization of habitation—with all its pretenses of producing and regulating new types of individuals—and making the uninhabitable a new norm, where value rests in what can be constantly converted, remade, or readapted? Such a middle is not so much a new regime, imaginary, or place; rather, it is a way of drawing lines of connection among the various instances and forms of habitation, in order to find ways of making them have something to do with each other beyond common abstractions (for example, the abstraction that slums are reservoirs of cheap labor, or that innovation is fodder for gentrification).

Why Doesn’t What Works Actually Work?
A current key objective of urban transformation is to construct high-density affordable neighborhoods that include green space, access to transportation, and opportunities for work and also have the ability to generate work through a diversity of residential and commercial composition. Many of the so-called popular, largely self-constructed districts mixing working and lower-middle-class inhabitants would seem to pose viable concretizations of this objective. For the past eight years, I have lived and worked in several intensely heterogeneous central city districts in Jakarta. These are districts replete with different residential histories, built environments, economic livelihoods, and social compositions. During this time, I have had hundreds of opportunities for both formal and informal conversations with residents from different walks of life.

These districts have never rested on their laurels, nor have they become calcified into a shaping of property that necessitates the defense of integrity or tradition. The capacity of such districts to accommodate, manage, and make the most of their heterogeneous composition is largely contingent upon continuous renovation and recalibration. It is hard work, because if you want to create room for adaptation and for economic activity and sociability to affect each other productively, then no single actor or activity should enjoy a disproportionate value or advantage.

Such districts may be at a disadvantage in terms of managing how energy, water, sanitation, waste removal, material inputs, and commodities are connected to each other in a reliable fashion. But residents remain attuned to each other through their very efforts to make, repair, and sustain the connections among these urban resources. Districts may not simply be crowded with people but also crowded with aspirations, tactical maneuvers, and conflicts. These push their way into district space and require significant expenditures of tolerance, local ingenuity, and mediation, as the strict delegation of responsibilities to specific individuals, groups, or institutions cannot always come up with the adaptations necessary in a
timely fashion. Because districts of such intensities may have to reproduce similar functions with a changing cast of characters, knowledge about how to run things is spread around. But, at times, it also leaves gaps in terms of deciding who has the authority to intervene in particular problems. In other words, disadvantages come with the advantages; it is not a clear story of win-win benefits. Nevertheless, there is much that can be worked with, in terms of what already exists.

If you walk through the central city districts of Serdang, Utan Panjang, Sumar Batu, Cempeka Baru, and Harapan Mulya in central Jakarta, you will see an enormous diversity of residential situations. As is true of any large city, the citizens have complaints and irritations. But these largely self-constructed areas provide both enough differences to allow the congealing of particular lifestyles and enough commonality to mitigate any sense that residents of different walks of life constitute a threat to each other.

The question becomes why such districts, embodying many of the characteristics that most urban policymakers and planners would want in so-called sustainable development, aren’t viewed as the resources they indeed may be. While the majority of edifices may be small, rather cramped pavilions, there are no structural or prohibitive financial considerations that would prevent vertical development of four to five stories, within the existent legal allowance. Could the infrastructure bear such a potential increase in population load? Here, again, Jakarta, through a past World Bank–coordinated neighborhood improvement project, demonstrated that significant increases in carrying capacity can take place in situ as long as conjunctions between primary and subsidiary systems are adjusted (Tunas and Peresthu 2010).

Undoubtedly the location of such districts near the heart of the city exerts pressures upon them, particularly as medium-scale enterprises, such as banks, automobile dealerships, restaurant chains, and supermarkets extend outward, driving up land prices and drawing commercial-based revenues into municipal coffers. Still, many districts have demonstrated an ability to roll with these punches; for example, local entrepreneurial networks can coalesce and upscale their own operations, and neighborhood residents can add on rooms to rent in order to cover increases in property taxes. These considerations suggest that barriers to local productions of centrally located districts are less about technical or fiscal impediments and more about a truncated idea of what exists across these districts and a limited view of what can be viable.

This is not a matter of looking closer in order to discover a kernel of truth and salvation. Keep in mind Joseph Conrad’s injunction that the closer we look at things, the less pretty they are. In fact, it is often hard to really tell what people are doing, why they are doing it, and where all of it is going to take them.

When I step out of my house in Jakarta and into a small lane and then turn the corner onto a busy street, I step into the midst of many things: I step into a seemingly interminable argument between two storekeepers over whose responsibility it is to make sure that the trash container doesn’t overflow; I greet two young men who voluntarily sweep the streets for several hours every morning in order to strike up quick conversations with people waiting for transportation to go to work; I notice the beginnings and endings of furtive couplings in the cheap by-the-hour hotels; I often join a convocation of customers at the small warungs (eating
places), where we compare notes and plot both sensible and outrageous conspiracies to increase our incomes; I sometimes join the lineup of devotees in front of the shabby office of a major local politician who moonlights as a spiritual advisor; I try to avoid the constant loading and unloading of trucks that, in the frenzy, frequently deliver goods to “wrong” destinations; I sometimes feel part of the constant milling about of people of all ages who seem to be waiting for real responsibilities but nevertheless feed the street with eyes and rumors; I am always surprised by the daily appearance of some new construction or alteration, of something going wrong and being left unfixed for only seconds or for decades; I am in the midst of battered or bored people who dispiritedly pursue the same routines and routes, and I am also in the midst of people who approach this street, where they have spent every day of their lives, as if it were the first time.

These multiple encounters and parallel, separated enactments, neither “good” nor “bad,” are the substrate of the popular district. They are its real politics, even as hierarchies of authority and institutions are also obviously in place. Varying distributions of capacities—to affect and be affected, to bring things into relationship, to navigate actual or potential relations—are political matters. These are matters about who gets to acquire particular emotional patterns, thresholds, and triggers, and they are connected to a complex virtual field of differential practice, what John Protevi (2009) calls bodies politic. What he means by body politic is the unfolding of a history of bodily experience, of specific modulations on ongoing processes of people and things encountering each other.

What we might think as the virtual is not some hidden potential that informs what a person’s life could mean or the potentials lying in wait in any event. Rather, the virtual is the way that any encounter spins off into all kinds of directions and inclinations, as that encounter has enfolded different kinds of desires and perceptions to begin with. The question is where does this spinning-off take someone, what will they make of it, what other encounters will be sought out, avoided, or accidentally impelled. This activation of the virtual—all of the encounters a person has inside and outside the house, at work, in the streets, in institutions—informs what a body is able to do at any particular time, where she or he does it, and what it is possible to perceive and pay attention to in a given environment, as each body acts on, moves through, other bodies.

This notion of bodies politic is important because it shows how the functioning of districts full of different kinds of people, backgrounds, and activities does not work by residents forging some sense of community—or that collaborations among them are primarily honed through a consensus of interests, division of labor, or proficient organizing techniques. Rather, things work out through an intensely politicized intermixing of different forces, capabilities, inclinations, styles, and opportunities that stretch and constrain what it is possible for residents of any given background or status to do. No matter what formal structures, stories, powers, or institutions come to bear on what takes place, no matter how they leave their mark, there is a constant process of encountering, pushing and pulling, wheeling and dealing, caring for and undermining. These encounters tend to keep most everyone “in play”—able to maneuver and pursue, if not all of the time, at least for a portion of most days.

The persistent repetition of, even hounding of urban residents with, the
supposedly proper images of middle-class attainment and overall well-being chips away at the convictions residents may retain about their abilities to construct viable living spaces for themselves. Time becomes an increasingly precious commodity, particularly as maximizing consumption and skill sets remain a critical indicator of self-worth. A younger generation of urban residents is more eager to escape the obligations of tending for parents and kin, let alone neighborhoods where the “rules” for belonging may become more stringent and politicized. A widening dispersal of interests and commitments are harder to piece together into complementary relationships and collaborations. The efforts at repairing and developing things that were once matters of voluntary association more and more seem to require a formalized, contractual deployment of labor.

There is a widespread sense that popular districts in Jakarta’s urban core are finished, overladen with anachronistic business practices, excessive demands on people’s time, and altogether too enmeshed in uncertainty to prove dynamic in the long run. Another consideration is the enduring frustration on the part of residents with the tedious bureaucracies, corruption, and wasted time entailed by the older formats of the urban core. At times there appears to be an almost universal vilification of how bad things are run, and these images are not innocent, since they are used to encourage resettlement in megacomplexes that exude the impression of efficiency and transparency, where everything is “run by the book.”

But these impressions are tricky, because neighborhoods increasingly vili- fied for being full of shakedowns, skewed deals, moneylending, compounding interest, favors, sorcery, over invoicing, resale, gambling, extortion, loaded gifts, kickbacks, pay-to-play, and hoarding then morph into statistical tendencies, branding, big data sets, probabilities, risk profiles, stochastic modeling, preemptive intervention, analytics-as-service, interoperable standards, clouds, and ubiquitous positioning. The ethical implications and efficacy of the latter are not necessarily more advanced or clearer than those of the former. As thick social fabrics are torn asunder or coaxed into more individualistic pursuits of consumption and well-being, there are no clear visions or practices for how residents, still operating in close proximity to each other, will deal with each other in the long run, especially in circumstances where urban economies are unable to provide work for an increasingly youthful population.

Displacing outmoded urban governments with purportedly more efficient and transparent municipal administrations may provide momentary more efficient and transparent municipal administrations may provide momentary optimism to a more educated young generation of urban residents. But these municipal endeavors to ensure more just environments for both the poor and the middle class fail to grapple with the degree to which the real economic underpinnings of cities are largely configured elsewhere. A vast substrate of deals, accommodations, and compensations are necessary in order to sustain the lawfulness and efficacy of urban policy (Swyngedouw 2009; Chatterjee 2011).

Part of the issue is that many cities of the “South,” no matter where they are, become subject to an increasing number of claims. The ability for anyone to definitively stake a claim necessitates widening interdependencies on relations and things that, on the surface, might not seem to have anything to do with a particular
piece of land, building, or urban resource (Ribera-Fumaz 2009; Goldman 2011; Raco, Imrie, and Lin 2011; Caldeira 2012; Gazdar and Mallah 2013). Dispossessions and repossessions then multiply (Banerjee-Guha 2010).

This proliferation of relationalities can be seen through the use of sophisticated number-crunching packages, where a larger volume of relationships is made for us, instead of us trying to figure how things are connected. This figuring-out of connections was one of the key skills and preoccupations of residents inhabiting popular districts. The figuring-out, in many ways, was a practice of inhabitation. Now, parametric designs, which bring together different data sets related to water, finance, energy, transportation, housing, economy, individual and group behavior, and so on, modulate the variable relationships among them and alter their properties as a result. Water, energy and sanitation, financing, transport, municipal finance, and economic development all have an impact on each other through recursive feedback loops (Parisi 2012).

The very act of trying to better control things, while opening up new vistas of knowledge, also produces unpredictable and unfixable relationships. In other words, we live in cities where things are inevitably linked and related, which gets rid of the will to actually make things relate—to coax, induce, seduce, incentivize. To move on, then, means to go nowhere, since one is locked into, indebted to, surrounded by all kinds of apparatuses—of recognition, security, legitimacy, correctness. Divisions exist between those whose interminable debts require them to stay in place, so that they aren’t having the rug constantly pulled out from under them, and between those who are able to operate without any rug at all, in almost any environment whatsoever. Here the uninhabitable becomes a place in which one can be located, whereas the habitable becomes a privilege of not needing a specific abode.

If the desire to figure out the relationships among things is diminished as a by-product of increasingly formatted and programmed environments, then the very incentive for substantiating relational knowledge is undermined. This is the knowledge about how to act and how to make use of varying kinds of relations. However messy and untenable certain heterogeneous urban environments may have been, they were a context for the skilling of residents in the conduct of relations. These relations may not have been consistently generous, tolerant, or wide-ranging. Nonetheless, they were “all over the place” and took inhabitants to many different “places,” even if physically they covered little ground. There was a mixture of sentiments and practices that coexisted, uneasily and sometimes destructively, but that nevertheless generated the capacities of residents to ply their potential resourcefulness (Moulaert and Nussbaumer 2005; McFarlane 2011b).

Part of the work of being in the city includes acquiring a range of literacies that have to be honed over time; part of the importance of everyday urban practices is that they constitute a repository for this urban learning, enabling knowledge about how to forge and conduct new relationships among people, places, and things. An important role for public policy, then, is to consider how institutions can pay attention to the logics and dynamics of the everyday in order to creatively animate a broader public awareness of the relationships between justice, redistribution, climate adaptation, and infrastructural change.
Recasting urban life is then at the core of such a pedagogic social-learning project. If digital and new media are introducing new parameters for subjectivity, how do we think about new collective practices, about focal and aggregation points, so that new cultural practices emerge? Rather than leaving the work of collective aggregation to consumption machines or so-called fundamentalist traditions, we need to explore new social contexts, procedures, modalities, and institutions of social learning as ways of substantiating new ways of being together.

**Conclusion**

I want to conclude this essay with a concrete example of how residents in one district of Jakarta appear to navigate the interstices of the habitable and uninhabitable that have been the “thicket” of consideration here. Kampung Rawa in central Jakarta, near the Senen rail station, was historically the port of call for many incoming migrants to the city. As the city’s densest district, it is crammed with a mix of long-term residents, mostly eking out a minimal income, and newcomers attracted to the prospect of acquiring and remaking cheap property. The residents in this district have block-by-block solidarities and have invented kinship relations among neighbors; they also have forged strong ties to the various tricks, scams, and petty parasitism that make up daily life. They are widely known for being able to maneuver their way through the city, switching back and forth among performances of religious devotion, gangland bravado, entrepreneurial acumen, and inventive social and political collaborations.

Yet the district remains heavily redlined by official institutions; youth have a hard time getting more than low-level jobs. The place is so crowded that most household members have to take turns sleeping, leaving some to roam the streets at all hours. At the same time, more renovations and physical adaptations are going on in Kampung Rawa than in almost any other part of the city, and on any given day the place can be celebrated and vilified by the same people. Whatever objective readings could be taken of the conditions here, the sense its residents make of the place goes in all kinds of directions. The words they use to identify themselves vary across a wide register, as do their assessments of the likely future. Is the place poor or not? Safe or not? Viable or not? Most residents can provide detailed and reasonable answers either way. But even if the sense they make collectively remains in the form of something in-between, most are prepared to act strategically, no matter which way the answer goes.

It is important to keep this politics of sense-making in mind as cities, particularly those in the so-called Global South, are inundated with new imaginations, designs, and plans to make them more sustainable, just, productive, and generative of financial value. Regardless of the contradictions among these aspirations, a great deal of attention, money, and projects are brought to bear in cities like Kinshasa and Jakarta. As such, there is the need to more explicitly understand the political institutional gridlock that characterizes most cities. While knowing the deleterious ecological footprint of urbanization, the systemic nature of the gridlock, and the degrees and types of uncertainty involved, there is general consensus that a radical restructuring of the material base of cities will be necessary, even though few seem to know how to bring this about or are willing to make substantial changes in their own behavior to do so.
Nevertheless, this need can be strategically engaged so as to produce new forms of sociality. This will entail piggybacking on and rewiring existing policy networks that cut across national divides, as well as forging interconnections among stylistically divergent activist and civic projects. But the intersection will take place not on abstract notions of cooperation or civic responsibility but on the resonances among details—the specificities of how localities access and provision resources and opportunities and how various kinds of articulation can be built among them.

While it is critical to continue to mobilize residents and municipal institutions to support residential and economic settings that have long provided affordable and effective contexts for the intersections of intensely heterogeneous backgrounds, built environments, and ways of life, it is also important to find ways of redescribing the mass production of new residential settings where more and more residents are resituated.

Here, what appears to be the warehousing of the poor or the aspirant middle class in cheaply built high-rise tower blocks may indeed mark the wearing away of long-honed relational skills and social economies. But it also may harbor the incipient formations of a process of translation, where certain details of past residential configurations are reworked in new forms. Many of my friends have willingly bought or rent small apartments in these complexes. I would ingenuously ask them: “How can you live in a place like this?” They often point out the possibilities of different forms of collective life, more provisional, perhaps ephemeral, but with a strong sense of possibility, and not predicated on “going it alone” but on working out continuously mutable forms of interchange and interventions, with a commitment to using the apparently untenable as a means of rediscovering what it means to “go against the grain.” If we only pay attention to the rollout of contemporary spatial products as exemplars of urban neoliberalism, we might miss opportunities to see something else taking place, vulnerable and provisional though it may be.

References


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IN 2017, THE WEATHER in California was the hottest in history. It was hotter than in 2016, which was also the hottest in history. The vineyard owners spoke nervously of how difficult it was to find people willing to pick grapes in this heat. The apple trees dropped all their apples. Over the summer the smoke from hundreds of wildfires burning throughout the state gave me a chronic cough, which turned into walking pneumonia. People began to talk about how illnesses are getting weirder these days. I decided to attend a climate change action meeting I had seen announced in the local newspaper.

It was an experimental prototype course founded on the ideas in George Marshall’s book Don’t Even Think About It: Why Our Brains Are Wired to Ignore Climate Change. After spending fifteen years studying climate change—denying microcultures, Marshall concluded that facts don’t change people’s minds; only stories do. We’re so motivated by wanting to belong that we’d rather risk the dangers of climate change than the more immediate symbolic death of estrangement from our peers. In order to address climate change in our communities, Marshall suggests, we must appeal to the same desires that religion does: for belonging, consolation, and redemption.

For this reason, the purpose of the group—or “fellowship,” as the organizers called it—was to borrow the most effective tools of religion to create a community of people who would work together when it was time to implement policy change, or even take to the streets. Their aim was to galvanize 3.5 percent of the local population—the number social scientists estimate is the tipping point for effecting social change.

You had to apply to the prototype course, so after the informational meeting I wrote the organizers the following email, thinking there’d be a lot of competition:

I attended your Information Session last night at the Sonoma County Land Trust. I marked the sheet stating that I would like to take the course you are offering but I just want to reiterate how much. I grew up with a dad who would regale us with climate change statistics over the dinner table. If my brother said he was going to a Giants game, my dad would say that he better enjoy it now because there weren’t going to be any Giants games in the future. Hanging on the wall was a color-coded map he created of what property values would be worth when ocean levels rose in the Bay Area. He terrorized all my friends by describing how the atmosphere would start to smell like rotten eggs as soon as the oceans warmed and started pluming carbon. In effect, I assumed that by 2020, life on Earth wouldn’t exist anymore. I teach environmental studies and am looking for ways that I can bring hope to my students but also help motivate them (as well as
myself). I found your session to be inspiring, especially in its emphasis on fellowship and taking concrete action, and I felt a newfound joy that I hadn’t felt in a while. I feel ready to take on the commitment that this course asks for.

THE ORGANIZERS TRIED many methods for cultivating a feeling of fellowship. They’d start the session by banging a gong, or by reciting a poem by William Stafford or the former mayor. They encouraged us to discuss our vulnerabilities. But the most effective method was to scare the crap out of us with mini-lectures about the realities of climate change, which bonded us in common terror.

We were presented, at the beginning, with a self-proclaimed “humorless, brain-numbing deep dive into climate science.” They told us it wasn’t supposed to happen this quickly. Climate scientists had predicted that by 2017 we would be at 380 parts per million (ppm) of carbon dioxide in the atmosphere, but we were already past 410 ppm.

The man who presented this information was, like my father, a local architect. Scrunching up his face he said, “I don’t want to depress you, but I want to tell it to you straight.” He told us that when he designs a house he has to deal with very strict building codes, which are intended to prevent worst-case scenarios. By contrast, the Paris Agreement—whose purpose is to limit the temperature increase over the second half of the century to 1.5 to 2 degrees Celsius above preindustrial levels—doesn’t address worst-case scenarios. “Would you put a loved one on an airplane if the airplane had a 50 percent chance of making it across the Atlantic?” he asked.

The most effective glue for bonding, our organizers said, was collaboration: we needed a goal we could all work toward. Our goal was to phase out the internal combustion engine in California by 2030. They gave us questionnaires so we could spend the next week testing the public’s receptivity to this idea. Here are some of the responses we got:
What happens if the power goes out?

Where do the cars on the road go? Do we get a free car? What happens to the oil companies? Would you be punished for having a gas car?

Do I have to get rid of my brand-new car? How did we get into this mess? What can we do to ensure our children can understand so they know what is going on by the time they get through high school?

Why not just get everyone to stop eating meat instead? Agriculture creates as many greenhouse gases as automobiles. Haven’t you seen Cowspiracy?

There are so many other issues. Why electric cars? We need to change our habits!

Our schools should feature human relationships and our relationship to the Earth. The 4 Rs: Reading, ’Riting, Rithmetic, Relationships.

Could I go to Nevada to buy a car?

Isn’t solar production toxic?

What will I do with my beloved van that carries all my stuff day after day?

Would there be violent, emotional reactions to such a “radical” move? How do we deal with that reaction?

I like it. Get there!

Proud of you, Bill, for being involved. It's inspiring.

I’m not driving an electric car! I’m allergic to electricity and SMART meter rays!

2030 may be too late to avoid some of the most catastrophic climate & social issues.

We have such a gas + car culture. Why do we let high schoolers drive to school? We need to change the consciousness. Only HS kids who work should have a car.
I asked my friend who works as a photographer for the Red Cross for her take on the electric-car issue. She said it was a good idea and invited me to help her install smoke alarms on houseboats in Sausalito.

“You should come,” she said. “Get to know the houseboat community.”

It’s true that I was looking for community. I’d recently sent my friend an email about Russian House #1, a restaurant on the Sonoma coast where all the waiters have PhDs and the owners post a daily philosophical question diners are encouraged to discuss with one another. But I was also looking for a house to live in. I started wondering if a houseboat could be the solution to my housing dilemma.

I scanned Craigslist and called my boyfriend, Bongjun.

“Guess what? There’s a way to live in the South Bay without paying a million dollars!” I said. “It’s possible to live there for only a hundred thousand dollars. But actually, I researched it and it’s not possible.”

“What is it?” he asked.

“A houseboat. Three bedrooms for a hundred thousand.”

“I saw a houseboat on Zillow last week,” he said. “It was the kind of boat you discover the New World in. In the picture, the seller was hanging off the mast in a Renaissance costume.”

“But these ones are actual houses. You get to know your neighbors.”

“I don’t want to live in a boat. I’d rather live in a bus.”

“But you’re always talking about how you love water, how you need to live near a river. We could go out in a kayak at night. Row to a restaurant.”

“I don’t like soggy socks.”

“The water doesn’t come into the boat.”

“But I would have soggy socks in my subconscious.”

Anyway, it didn’t matter. It turned out that residents of Docktown, the houseboat community in Redwood City, were being evicted. All the houseboats without
school-age children were required to vacate by February. That’s why they were so cheap. But now I was back to negotiating with another person about a place to live in the midst of a housing crisis. “Maybe we could buy the houseboat and put it on some land,” I said. “Then we’ll be all set for when the oceans rise.”

In California, the only people who own houses are people who bought them in the 1970s, work for tech companies, or were on the receiving end of a miracle. In Oakland, the blocks of homeless tarp housing continue to expand. In the grocery store you overhear people talking about the housing crisis. “It’s called BYOH,” the bagger says to the checker. “We buy a piece of land together and you Bring Your Own House.”

In his book, George Marshall writes that people like to point to the Chinese pictogram weǐjiē, claiming that the character for “crisis” (wēi) is always paired with the character for “opportunity” (jī). But it turns out that jī doesn’t actually mean “opportunity” at all. It means “a moment,” “an airplane,” and, sometimes, “organic chemistry.” I started to wonder if there is a Chinese character that links “trying to solve climate change” with “trying to solve California’s housing crisis.”

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**THE DAY TRUMP WAS ELECTED**, the first thing my mom said was, “Is today the day we can start smoking marijuana?” One of the consequences of California’s legalization of marijuana is that industrial agriculture is appropriating the weed business. There are a number of reasonably cheap former pot farms for sale in the Santa Cruz Mountains.

Bongjun went to look at one to see if it was an appropriate place to build a sustainable community. Part of the road had been washed away by last winter’s flood, so he had to park at the bottom of the hill. “We’d have to get four-wheel drive to get up there,” he said. “You would really like the house, though. It has a grow room.”

“But I’m not interested in growing marijuana.”

“Oh, is that what grow room means?” he said. “I thought it was a place where Californians go to meditate, and, you know, grow.”
I once read a story called “An Account of My Hut,” by Kamo no Chōmei, a 12th-century Japanese hermit. Chōmei describes how after witnessing a fire, an earthquake, and a typhoon in Kyoto, he leaves society and goes to live in a hut.

Seven hundred years later, Basil Bunting, the Northumberland poet, wrote his own rendition of Chōmei’s story:

Oh! There’s nothing to complain about.
Buddha says: ‘None of the world is good.’
I am fond of my hut . . .

But even if I wanted to renounce the world, I wouldn’t be able to afford a hut in California.

A few months ago, Bongjun and I found a house in Oakland. The real estate agent said we were competing against twenty-eight other bids. She suggested that we write a love letter to accompany our offer.

“A love letter?” my former roommate from Florida said over the phone. “And everyone makes fun of people from Florida? They’re all, ‘That guy put his head in an alligator’s mouth because he smelled licorice in there, but actually the licorice was on his face!’ But that’s nothing compared to having to write a love letter to a house!”

“Well, it’s to the owner of the house,” I told him. “I have to write something like, ‘I will only use biodegradable detergents. I will only plant native plants in the garden. I will keep the bird feeder well stocked . . .’”

“Those people need to cut the cord,” he said. “It’s a house for god’s sake.”
We made an offer well over the asking price and tossed in our love letter, but got outbid by somebody who offered $400,000 over the asking price.

Another day we found a former sheet-metal factory that we thought we could turn into a community performance space. It didn’t have a sewage system, and it’s possible that the previous owner had died from the black mold that encroached on all the surfaces. The factory needed a new roof, and if it burned down it couldn’t be rebuilt because it was constructed in the 1940s, before the road got wider. We still got outbid by $150,000.

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**MY FRIEND FROM THE RED CROSS** called to invite me to a pop-up house concert in Oakland called Songs of Resilience, a musical journey of sound healing, but I didn’t feel like going. “Is it in a community house?” I asked. “Those people are going to look at me with that condescending look of pity that means they think I haven’t set my willful intentions, that I haven’t made that list of everything I want. But I made the list. It’s just not working out.”

“One of the problems is that Bongjun doesn’t like to drive on curvy roads,” I told my friend. “But the only cheap land available is at the end of a curvy road. There was one affordable place off Highway 17. It was more like an outhouse. The real estate agent was like, ‘Oh, that one? Well, it’s hard to make the turnoff. I might miss the turnoff.’ Instead, he drove us to a house way above what we could pay.”

“It sounds like you’re not enjoying this process,” my Red Cross friend said. “Looking for a house together should be a journey of joy.”

For a moment I believed her and felt a slow sinking feeling. Then I remembered that she’s always insisting that I need to be more open-minded about the tech world, because Silicon Valley offers many opportunities for storytellers.

“Like what?” I asked once.
“Like Fitbit. You track the Fitbit family users. After they exercise, some guys go to the sports bar; their girlfriends go to the frozen yogurt shop. Which user consumes more calories?”

“That’s a story?”

BONGJUN AND I FOUND a piece of land on top of a mountain, but it didn’t have a single tree. “Why do you need a tree?” Bongjun asked. “There are plenty of neighbors’ trees to look at.” When I thought about it more, I realized that it wasn’t really the top of a mountain so much as the side of a cliff. Maybe we could have put a yurt there.

The next time I talked to my friend from Florida I asked whether he thought I was doing something wrong because I wasn’t on a journey of joy.

“Journey of joy? Ah hahahaha!”

I told him about the treeless mountaintop and the yurt. When he asked what a yurt was, I texted him a picture of the Lotus Belle yurt I’d found online. “In California the only option is to live in a smurf house?” he asked. “A helicopter is going to be flying overhead and the pilot will look down and see this little puffball on the side of the cliff. ‘What’s that?’ the pilot’s gonna say. ‘A giant Q-tip? No! It’s a Journey of Joy!’”

ON OUR NEXT JOURNEY OF JOY, Bongjun and I visited a piece of land that turned out to be the receptacle for all the neighborhood runoff water. Black plastic
MEANWHILE, OUR CLIMATE CHANGE group provided a metastudy about the 97 percent scientific consensus on climate change. Because scientists never say that something is 100 percent true, and because scientists, by nature, are often poor at communicating on an emotional level and tend to resist alarmist scenarios, the climate-change deniers have been able to point to that 1 to 3 percent of doubt. (Ninety-seven percent is also the proportion of scientists who support the theory of plate tectonics.)

We also learned that 61 percent of Americans say climate change is important to them, but they rarely or never discuss it with people they know. Our homework was to become climate-change evangelists for a month. To prepare, we discussed how to raise the topic with a stranger. “Sure is hot these days,” or “How often do you take the train? Trying to save on fossil fuels?” or “Do you ever remember it being ninety-seven degrees in October?”

I decided, as an experiment in humiliation, to discuss climate change everywhere I went. The following are methods I do not recommend.

1. Bumping into someone’s shopping cart at Safeway. “Oh, sorry, I was just so distracted thinking about climate change.” (Note to self: Try using the phrase “climate disruption,” rather than “climate change.” Or better yet, “global greenhouse gas chamber,” the expression that Wallace Smith Broecker, the man who coined the term “global warming,” wished he had come up with earlier.)

2. After complaining to my boss about the measly salary I make as an adjunct professor: “I apologize for expressing myself in such a heated manner about how impossible it is to live on this salary. I was just really distressed thinking about climate disruption.”

3. During Hurricane Harvey, I was having dinner with my neighbor, whose car has bumper stickers like MY OTHER CAR IS A BROOM and NEVER FEAR, THE
Godess is here! So it was unsurprising to hear her say, “This hurricane is Earth Mama expressing her anger at the patriarchy!” “Actually,” I said, “I’m not sure if the hurricane has anything to do with the Earth getting angry. It might have more to do with greenhouse gases. I’m not saying that climate change is causing the hurricane. It acts more like a hormone, or an adverb, an intensification of the qualities already present. I’m afraid things are only going to get worse.” She looked upset. “Wait, what’s the matter?” I asked.

“You’re triggering my PTSD!”

4. I went to my friend’s Blade Runner party, which was filled with fortysomething guys who kept reciting all the lines and knew all the trivia answers. During the pee break, one guy started talking about how we’d all be wearing Google Glass in ten years. “If the Earth doesn’t burn up,” I added.

“Right!” someone interjected. I thought we might be on our way to a useful discussion.

“This party just turned into a real downer,” someone else said, so we went back to the movie.

Oh, no, I thought. I’m turning into my dad. He often told stories about how the heartbeat of the ocean might stop, which would affect the wind and freeze parts of the Midwest and Europe. For this reason I think of discussing climate change as a relaxing family activity. My father’s second wife, on the other hand, got so tired of hearing about global warming that she considered getting a STOP GLOBAL DOOMING bumper sticker for her car. When my brother announced that his wife was pregnant, my dad told him he wouldn’t need a college fund since there wouldn’t be any college in the future. My brother, who was tenderly grilling ribs, threw down his barbecue fork and said, “For once I want to talk about life, and not always be focused on the end!” After that, climate change became a forbidden topic on holidays. Now I was rediscovering what I’d understood as a kid: people don’t respond well to threats, to cajoling, to end-of-the-world scenarios, to dystopian futures, to hopelessness.

But as I watched the news about Hurricane Harvey, I was astonished that not a single anchor mentioned climate change. Instead they blamed the flooding on Houston’s pavement. According to George Marshall, those who don’t believe in climate change are less likely to believe in it after a climate disaster. Every single member of our group was confounded by this. “That makes no sense!” we said to one another.

If a person believes that weather fluctuates regardless of carbon dioxide in the atmosphere, or that catastrophes represent some kind of punishment from God,
confirmation bias will lead him to view the latest climate disaster as proof. And after a climate disaster, people feel a heightened sense of community; they don’t want to get into a politicized discussion with the neighbor who just saved their dog. Furthermore, Marshall writes, climate disasters operate according to the same psychological logic as lightning strikes. People who have been struck by lightning tend to believe they are statistically immune to it happening again, even as the actual odds remain the same. And if your house floods due to a changing climate, it is more likely it will flood again. If your house burns down, it is more likely it will burn again.

I was already mentally and emotionally enfeebled from watching so much hurricane disaster news, but I still couldn’t stop watching the hypnotic swirl of Irma. The way the news was reporting it, I thought for sure that this hurricane was going to be the end of America. I called up my friend in Florida. “I’m worried about you and that hurricane,” I told him.

“Oh, really? I haven’t been watching the news.” A few hours later he texted, “Oh, shit!” Later we exchanged emails. “Did I mention we are binge-watching our way through this hurricane with Dexter?” he wrote. “We didn’t stock up on food so we are eating scrambled eggs and chicken potpies. But do you know what? I honestly get those guys who are shooting into the hurricane. I swear to god. It’s not about shooting the hurricane. It’s about blowing off steam. . . . I’d go outside and fire off a gun if I had one. . . . It’s not my go-to move, but there is something about blowing a big ol’ hole in something from a distance. I used to be a pretty good target shooter. OMG. A new food update from my fam. With a side of no concern for safety.”
THE NIGHT THE FIRES STARTED in Northern California, Bongjun and I had an argument. Afterward, he took out the garbage. “Come here,” he said when he opened the door. “Check out how hot it is outside.” A little while later, the wind started to sound like airplane engines.

The following morning, my mom and my aunt both told me that they’d thought we were being attacked by North Korea.

THIS IS HOW Kamo no Chômei describes the fire that broke out in Kyoto: It was, I believe, the twenty-eighth day of the fourth month of 1177, on a night when the wind blew fiercely without a moment of calm, that a fire broke out toward nine o’clock in the southeast of the capital and spread northwest. It finally reached the gates and buildings of the palace, and within the space of a single night all was reduced to ashes. The fire originated in a little hut where a sick man lodged.

The fire fanned out as the shifting wind spread it, first in one direction and then another. Houses far away from the conflagration were enveloped in the smoke, while the area nearby was a sea of flames. The ashes were blown up into the sky, which turned into a sheet of crimson from the reflected glare of the fire, and the flames, relentlessly whipped by the wind, seemed to fly over two or three streets at a time. Those who were caught in the midst could not believe it was actually happening: some collapsed, suffocated by the smoke, others surrounded by flames died on the spot. Still others barely managed to escape with their lives, but could not rescue any of their property: all their treasures turned into ashes. How much had been wasted on them!

Sixteen mansions belonging to the nobility were burnt, not to speak of innumerable other houses. In all, about a third of the capital was destroyed. Several thousand men and women lost their lives, as well as countless horses and oxen. Of all the follies of human endeavor, none is more
pointless than expending treasures and spirit to build houses in so
dangerous a place as the capital.

And this is Basil Bunting’s rendition:

On the twenty-seventh May eleven hundred
and seventy-seven, eight p.m., fire broke out
at the corner of Tomi and Higuchi streets.
In a night

palace, ministries, university, parliament
were destroyed. As the wind veered
flames spread out in the shape of an open fan.

Tongues torn by gusts stretched and leapt.
In the sky clouds of cinders lit red with the blaze.

Some choked, some burned, some barely escaped.

Sixteen great officials lost houses and
very many poor. A third of the city burned;
several thousands died; and of beasts,

limitless numbers.

Men are fools to invest in real estate.

Neither writer mentions the paper that falls from the sky.

ON THE EVENING OF the eighth of October, in the seventeenth year of this
century, severe gusts of dry winds blew across desiccated grasses and diseased
trees caused by years of excessive heat and drought. A great flood that year had
fattened grasses into combustible fuel. The wind knocked down power lines that lit
the trees on fire. The firestorm destroyed a thousand homes in a single
neighborhood. Neighbors pounded on neighbors’ doors, honking horns, trying to
rescue one another. It took hours to leave town. Most people reported that drivers
were calm, though a few resorted to the sidewalk, the median, and the opposite
side of the road. One woman managed to stuff her pony in the back seat of her
Honda Accord. Another woman had to choose between saving her car or her horse.
She jumped on her horse in her pajamas and rode away from the flames. The fires burned for over a week, killed forty-four people, and destroyed more than ten thousand structures and 380 square miles of land. It was the most destructive fire in US history to date.

**DURING THE FIRES** I took walks, and I tried to read the paper falling from the sky. I wanted to collect the scattered notes, but they disintegrated when I picked them up, leaving the smell of poison on the tips of my fingers. The paper pieces lay curled like chocolate shavings. They were all the size of my palm. I was looking for stories, but I could only find information. Bible pages (sections from Genesis); cell phone bills; pieces of romance novels (so many of those); perfectly preserved letters so meticulously burned around the edges they looked the way letters do when you burn them in fourth grade to make them look romantic; gold-embossed stationery with someone’s name written over and over in tiny letters at forty-five-degree angles; musical scores; Swedish vacation package-tour brochures; pieces of phone books (people still have phone books); a kid’s homework (he did poorly); journal pages (so many pages of people talking to themselves); as well as tar paper and bits of insulation burned thin as paper. I walked and walked and tried not to breathe. Why was the sky directly above me blue, while everywhere else it was gunmetal gray flickering with particulate matter? Everyone spoke of particulate matter. In the hardware store all you needed to say was “Where are they?” and they’d point you to the pile of N95 masks. Someone passed me on the trail. I imagined he was judging me for not wearing a mask, but I couldn’t read his expression because he was wearing one. I looked at the dun, shoulder-high grass; that explosive fuel, the color of pale grasshoppers, was all that stood between an out-of-control fire and me. The news never reported where the active fire was. We only knew that it was completely uncontained and that all effort was focused on rescuing people, evacuating the hospital, getting elderly people out of their homes. All we could do was hope the winds wouldn’t change. I walked into the grasses to get away, to get away from the panic on people’s faces. There was no digesting this fire. There was no beginning, middle, end. I couldn’t stop thinking about Sugarloaf Ridge State Park, which was now decimated. I hadn’t walked on Sugarloaf Ridge in years, but whenever I used the words *poison*
oak, or gallop, or fog my mind flashed femtosecond images of the park. Now it was ash. My old high school had burned down, as well as everything along the roads to get there.

BEFORE THE FIRES I’d been teaching a class on ecology. We were learning about systems theory and the interdependency of ecosystems, how trees communicate and send messages and medicines to other parts of the forest, how trees draw up water to share with other plants. We watched the Stevie Wonder video about his journey to the secret life of plants. We read a book about how to enter the imaginations of plants. We read stories of how bees know the location of every flower in a sixty-mile vicinity. We learned how butterflies make tinctures of nectar-soaked pollen grains and how elephants concoct forest booze and get drunk. We learned how a chimpanzee will fold a leaf like an accordion and swallow it so that it scraps away the worms in his digestive tract.

We learned how insects can digest the compounds in eucalyptus and create poop that inhibits the growth of encroaching plants, like mustard. This is probably one reason why the eucalyptus has been so successful as an invasive species here. But why, in the 1850s, when the government planted eucalyptus throughout California at maniacal speed because its fast-growing wood was essential for railroad ties and fence posts, did these trees, unlike the old-growth groves in Australia, twist when they dried and become so hard they were no longer suitable for building? And now the volatile oils in their leaves turned out to be extremely combustible. In seasonably dry climates, native oaks are fire resistant, but with the introduction of eucalyptus we introduced an extreme fire hazard. I stared at the eucalyptus twisting in the heat.
**THE WEEKEND BEFORE** the fires I attended a grief workshop sponsored by the climate change group. They told us grief processed on one’s own turns to despair, but grief processed communally becomes medicine. Now that we knew the reality of climate change, we would grieve the Earth. That way grief wouldn’t hold us back when it was time to mobilize. To prepare us, they drew two circles on the board. YOUR COMFORT ZONE was written inside one circle. In the second circle, some distance from the first, they wrote, WHERE THE MAGIC HAPPENS.

The day before the workshop I had gone to the ocean to prepare but realized I wasn’t yet ready to grieve the Earth. When I looked at the sea and the tangled seaweed on top, all I could think of was the word *holdfast*, the name for the dangly part of seaweed that clings to rock. Our climate group had read a poem about *holdfast*, and we had been encouraged to use it to steady ourselves when things got rough. Instead of reciting poems about the sea and cliffs and black rock as I used to while walking this beach, I now thought about how the oceans have been absorbing more than half of the CO₂ in the atmosphere, along with 90 percent of the excess heat. I thought of pH balances and dying plankton, and of how the last time the oceans were this acidic, 96 percent of ocean life went extinct.

At the grief workshop we drummed and journaled. The facilitator said that because we are continuously bombarded by bad news, we live in a state of chronic secondary trauma. It starts as soon as we are born with our cave-child DNA, expecting to see forty pairs of eyes looking toward us, asking us what we dreamed that night, if we want to help collect firewood, if we’ll be at the ceremony tonight with the elders. Our psyches were never prepared to deal with the isolation of American culture, nor the sadness of the tragedies we see every day, nor the reality of our dying ecosystems. For hundreds of thousands of years grief rituals recalibrated the fields of trauma. These days there is no communal cup of sorrow; there is only psychotherapy, which colludes with the privatization of property, the privatization of consciousness, and the privatization of grief—with “own your sorrow.” These days, the great fear we have about grief is that we have to face it alone. And so people avoid it and it settles like sediment over our psyches. There is personal grief, but since we are all connected, there is also the sorrow we feel for the world right now. And that cannot be processed alone. We cannot think our way through this mess. Nor can we moralize our way through it. Our workshop leader suggested that the thing that will save us may be our own broken hearts, for true action can only come through these deeper feelings.
THE NIGHT AFTER the workshop, I got into an argument with Bongjun. I was sitting on the floor because all the other flat surfaces were covered by lab equipment and mechanical parts. There were boxes of electronics, wires, sensors, laser parts, and, in the kitchen, an old dentist’s light he’d accidentally bought on eBay. On shelves were laser-diode-current supplies, an oscilloscope probe, a function generator, a piezoelectric transducer driver, a microscope, boxes of lab snacks (just the boxes, not the snacks), a laser temperature controller, and, his favorite item, Marvin, the perpetually depressed robot from *The Hitchhiker's Guide to the Galaxy*.

“What is this?” I asked, pushing aside some sort of mechanical part.

“It’s a transmission gear piece. They were getting rid of it at my work.”

“You should get out of the Silicon Valley rat race and dedicate yourself to transitioning to a green economy,” I heard myself saying. “You’re a scientist. You can help develop technologies. This article says we have to treat climate change like we are fighting World War II. For example, we have to start movements where everyone paints their roofs white to try to dissipate the heat before it reaches a 2 degree Celsius rise. We have to cut carbon emissions now,” I said. “Here’s an article about what we can do to stay below a 2 degree rise. There are solutions. If you were to really internalize that we are the first generation to see the effects of climate change and the last generation to be able to do anything about it, would you change your life?” Even while I spoke I could hear myself sounding like a maniac. I kept reminding myself that people don’t respond well to threats, to cajoling, to end-of-the-world scenarios. But I couldn’t help it. I was in a bad mood because it was so hot outside.

Many years ago I lived in Korea. During the summers it would get so hot by eight in the morning that I’d have to stop at 7-Eleven on my way to the subway to buy honeydew-melon popsicles, or cold cans of pine-bud sodas, the drink invented by Korea’s forest service. On the radio station inside the 7-Eleven, the announcers would warn everyone to be careful and avoid arguments in their work environments because the “uncomfort” index was high. Studies have shown that people’s tempers flare in high heat.
“Yes, it’s the right thing to do,” Bongjun finally said calmly, in response to my grief workshop–induced rage. “But if it were really that bad, as bad as you say, don’t you think Google would be doing something about it?”

ON THE FOURTH NIGHT of the fires, the humidity plummeted again, and anxiety peaked. A dry wind was expected to blow almost as strongly as on the night the fires started.

I packed a suitcase full of clothes and looked around my room. Should I pack the vase I bought in Turkey? How about the old Soviet tourist books about Tbilisi? How was it possible to choose between items of sentimental value? Better to leave it all.

“At least we have the public pool across the street,” my mom said. We’d heard about the couple who took refuge in their neighbor’s pool while their own house burned. They stayed in the water for six hours, covering their faces with wet shirts whenever they had to come up to breathe. “How long does it take for a house to burn?” the woman had wondered underwater.

My sister-in-law called and said, “Remember how when your brother and I first got married and your dad was always talking about global warming? Turns out he was right!” My dad called: “I’ve been needing Ambien to sleep. I’ll forgo that tonight.”

THE NEXT DAY, having survived the night and craving fresh air, I drove to the ocean. I was searching for clean air, but smoke covered the soot-colored sea all the way to the horizon. I could have felt guilty for driving a car with an internal
combustion engine, but guilt goes on hold during fires. I sped on my way home, because the rule of law no longer applies during fires. This is the wildness that descends. This is the triggered reptilian brain. During the fires we craved sugar and fat and ordered take-out pizza and didn’t mention that we usually never order pizza. During the fires my neighbor, the goddess, forgot she was gluten intolerant. During the fires all I could think of was the word *holdfast*.

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**WE MADE A PLAN.** It seemed perfectly reasonable at the time. If the wind blew the fire this way we’d get in our cars and head to the ocean. If the fire kept following us, we would drive *into* the ocean.

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**MY FRIEND WHO HOSTED** the *Blade Runner* party texted me: “I bought a fog maker for my upcoming Halloween party. But now with all the smoke outside I don’t need it anymore.”

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**A STUDENT OF MINE** complained that he still had to work at the bank during the fires, since his branch was the only one open in the region. In one day customers deposited $600,000 in cash—a record—which they must have been keeping under their mattresses. My student said that all day his nerves were on
edge because people kept walking into the bank wearing N95 masks. The firemen told us that the masks don’t actually help much.

**A FRIEND WHO WAS EVACUATED** said he grabbed his two dogs and two banjos and hustled into his car. Driving away he realized he had forgotten to pack any clothes. During fires you hear, over and over, “I lost everything, but at least I have my life.” A couple of people, after losing everything, knocked on the door of a man whose house was for sale. They said, “We’ve lost everything. Can we buy your house and everything in it?” He left everything he owned to them, including his toaster and bath towels.

**MY FRIEND FROM THE RED CROSS** described the evacuation center in Napa where she worked. There was face painting, acupuncture, aromatherapy, medicinal teas, massages, a whole Sikh temple feeding five hundred people with blessed food. “And Dreamers,” she said, crying over the phone. “You know the Dreamers? Red Cross doesn’t take donations, but there were so many donations we didn’t know what to do with them. And then this woman, this random woman off the street, came in and said she would organize it all. She took it all out to the racquetball courts, arranged care packages of shoes—different sizes—and food, put it in backpacks. And for three days cars would pull in, ten at a time, and these Dreamers, behind the scenes, afraid for their lives, distributed all these packages.”
THE SONGS ON THE LOCAL radio stations were especially upbeat during the fires. They interspersed Tom Petty’s “I Won’t Back Down” with quotes from locals who had lost their houses. “Fires are burning in eight California counties,” the news announcer said with the Tom Petty beat in the background. A woman’s voice: “I came out to get my dog and looked down the ridge and saw a glow and I looked at the wind and I told my parents that they might want to pack up something just in case, and my mom said that the fire was already at the bottom of the hill . . . No I won’t back down, no I won’t back down. You can stand me up at the gates of hell but I won’t back down . . .” Another woman: “I just want to thank all of you first responders, I love you all from the bottom of my heart. I thank you all for being there. For being away from your families, to help everyone else out there . . . Hey baby, there ain’t no easy way out. Hey . . . we are Sonoma County strong . . .”

I cried when the song came on, though I’d already heard it five times. I cried while driving, and when I saw the banners on every highway overpass: THANKS, FIRST RESPONDERS. THANK YOU, FIREFIGHTERS. Or the signs in front of the cafés: FIREFIGHTERS EAT FOR FREE. Even as the fire raged on.

ALL THE MEXICAN RESTAURANTS were closed except one. I went in to get a burrito and found it full of evacuees. “Sure is busy here,” people kept saying. One man said to the cashier, “It’ll have to be bulldozed. Totally demolished. How was yours?”

“We’re OK.”
**MY FAMILY DECIDED** to go for a picnic. When we called the Point Reyes ranger station to check the weather and the recording said “Smoke,” we stayed home instead. But still had a picnic. Outside. In the smoke.

Over the beet salad, I brought up the need to join together to find climate change solutions to a young relative who works in tech. He said, “Evolutionary theory says that diverse species never collaborate. People only want to take care of their families.”

“But humans have never encountered the reality of climate change,” I said. “Maybe this will rearrange our biology.”

He shrugged. “Why worry? Technology will take care of everything. If the Earth goes, we’ll just live in spaceships. We’ll have 3D printers to print our food. We’ll be eating lab meat. One cow will feed us all. We’ll just rearrange atoms to create water or oxygen. Elon Musk.”

“But I don’t want to live in a spaceship.”

He looked genuinely surprised. In his line of work, he’d never met anyone who didn’t want to live in a spaceship.

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**WHEN I TOLD MY AUNT** that in my class we were trying to read the minds of plants, she said, “Can you teach me how to read the mind of a plant?”

“I haven’t really figured it out yet, but according to the book, you first have to believe that you can do it.”

Bongjun said, “The only way you’ll be able to read the mind of a plant is if you slow your metabolism way down. Humans can’t slow their metabolisms to the rhythm of a plant. Plant thoughts are too slow for humans to understand.”

But I’d been practicing the long, slow view. Nature’s metabolism works much more sluggishly than ours; the cumulative effects of CO₂ are slow but steady, like a tortoise, or a bionic woman in slow motion. I tried to listen. I took a rock and used it as a clock. I started thinking in geologic time. Started thinking one thousand years into the future, *after* the great extinction. Started thinking about the time
after the age of heat and darkness when that other version of humanity would need solar and wind technology.

**IN 2004, MICHAEL CRICHTON,** the author of *Jurassic Park,* wrote *State of Fear,* one of the few novels about climate change. Crichton’s book is about a group of “eco-terrorists” from the Environmental Liberation Front who set out to trigger natural disasters in order to foment mass panic about climate change and install a “green” dictatorship. It includes a dense technical appendix to “prove” climate change is a myth. George W. Bush spent an hour with Crichton in the Oval Office and then presented the novel as “scientific” evidence to the US Senate that climate change was a hoax.

In his book *The Great Derangement,* the novelist Amitav Ghosh writes that not too long ago, everyone who lived in the Sundarbans, the dense jungle along the Bay of Bengal, had a family member who had been killed by a tiger. Those who escaped would describe the weird, uncanny look of mutual recognition when they met the tiger’s gaze: an expression of preternatural wildness and intimate communication with the nonhuman. Ghosh says that now, in the age of anthropogenic climate change, we will confront that wildness again, this time in the eye of the hurricane, the tongue of a flame. Stories will become more alien, less human, more strange. The stranger the stories, the more we will recognize them and be recognized in them. They will speak, in his words, of the “interconnectedness of the transformations that are now under way.”

**AFTER THE FIRES** we watched Josh Fox’s documentary *How to Let Go of the World and Love All the Things Climate Can’t Change.* We realized that indigenous movements are the most active in facing climate change. And every one of them
knows how to dance. We realized that if we want to save the planet, we have to learn how to dance.

Bongjun finally read the peer-reviewed articles by climate scientists. He spent a long time studying the graphs, in the same way he once studied the medley of eight prescription medicines his mother had accidentally mixed together, and finally announced about the square-shaped ones, “Actually, these are chewing gum.”

“It’s scary,” he said, pointing at the West Coast on the map. “The West Coast will burn up. Korea, and the rest of Asia, will go through a famine. The only problem with solar is storage capacity. I could try to get a job in a national lab experimenting with hydrogen fusion. But I don’t know if they’ve made much progress on that since I was in the seventh grade.”

It was still hot: ninety-five degrees in late October. We wondered if winter would ever come again. You can’t get into a pumpkin-carving mood when it’s so hot. On Halloween a few kids came looking for candy, but it seemed like everyone else went to the movies. The parking lot at the theater was full.

I had a dream that I had to evacuate, and the only thing I grabbed was the leftover bag of Halloween candy. I handed out Kit Kats to people as we ran from the fire.

After the fires people posted the most random item they grabbed when they evacuated.

daughter’s piggy bank with $2.35 in coins in it
Grandmother’s Christmas cactus
a wetsuit
an avocado
the cat-scratcher tree
a Hermione wand
the cookie cutters
tarot cards
all the beer
kids’ pinewood derby trophies
the sewing machine
dog’s ashes
the spice rack
Norton Anthology
son’s Darth Vader alarm clock
husband’s Hawaiian shirt collection
jury duty notice for the next day
the cat-litter box and all the cat litter
combat-ready lightsabers
a toothbrush (even though the man who grabbed this one was evacuating to a dentist’s office)
a jar of Miracle Whip (because they were evacuating to a mayo-heavy household)

BONGJUN AND I FINALLY found a hut in the Santa Cruz Mountains. It was part of a co-op with twenty other little houses. Maybe this was it! Maybe this was our sustainable community. The day we were set to drive down there, the whole region caught on fire. It burned for a while. “I can’t take much more of this,” I thought.

THE FIRES DIDN’T DISCRIMINATE between the houses of the rich and the poor. Everyone’s pearls melted, no matter how large. Nor did they discriminate between the houses of the “realists” and the “idealists.” After the fires, the realists wanted to rebuild as fast as possible with the same footprint. The original developers of Santa Rosa’s Coffey Park, which was destroyed by the fires, offered to use updated versions of their old floor plans in rebuilding efforts. Homeowners were upset to learn that they were now required to rebuild in adherence with the 2016 California Green Building Standards Code. They argued that they shouldn’t have to.
Before the fires, the builders who showed up to city council meetings were the same people every time—they all seemed to be on a first-name basis. But after the fires, something changed. People began presenting ideas to install rain-catchment
and gray-water systems, community gardens, and bike paths. They wanted to revamp the land-use laws, change the zoning for tiny houses, use fire-resistant straw-bale construction and concrete and foam. The city council was inundated with people wanting to rebuild with green roofs and walls, to rebuild in a way that would promote bees and carbon-capturing methods, even permaculture methods and composting plants. City officials looked a little frightened as they listened to a large group of people talk about a town in Kansas that rebuilt with renewable energy after getting hit by a tornado. More than seven hundred people showed up for a breakfast sponsored by Daily Acts, an organization that builds community by working with neighborhoods to turn lawns into drought-tolerant gardens. A farmer who had lost his farm and all of his bees spoke at the podium: “Why can’t Sonoma County always be able to feed its poor?” My neighbors started talking about “agrihoods,” a new trend in which affluent, slow-foodie millennials move to neighborhoods surrounding a farm, instead of to the golf-course communities of their parents’ generation. My dad even wrote an op-ed about it.

AFTER THE FIRES, I started reading a book by Alejandro Jodorowsky, the Chilean French filmmaker/poet/therapist who maintains an unusual psychotherapy practice. If someone feels poor in spirit, or even in material wealth, he’ll prescribe that they glue coins to the bottoms of their shoes so that they feel like they are always walking on money. He describes how Chile, being “a poetic country,” graciously accepted his poetic acts. He and a friend once decided to walk in a straight line across the city, disregarding any obstacles they encountered. Sometimes this would mean having to walk through people’s houses. This is how he describes it:

Having rung the bell of a house and having explained to the lady of the house that we were poets in action and that our mission required us to cross her house in a straight line—she understood perfectly and had us leave through the back door. For us, this crossing of the city in a straight line was a grand experience, the way we managed to avoid all the obstacles. Little by little, we went about inventing more extreme acts. . . . Another day, we put a large quantity of coins in a bag full of holes and traveled to the center of the city. . . .
Also, we dedicated ourselves to very innocent acts that were no less powerful, like putting a beautiful shell in the hand of the conductor when he came to take our bus tickets. The man stood there stupefied for a long time without saying anything.

He goes on to say, 
Life is like that, you understand? Totally unpredictable. You think things will happen this way or that way and, in reality, while standing on the corner talking to a friend, you can be run over by a truck; you can run into an old lover and go to a hotel to make love; or the roof can fall on your head while you work. The telephone can ring to announce the best or the worst of news. Our acts as young poets were performed to prove this, to swim against my parents’ rigid world. . . .

My father practiced Psychomagic without knowing it: He was convinced that the more merchandise he had, the more he would sell. He had to give shoppers the image of superabundance. . . .

What is generally called “reality” is just a part, an aspect of a much greater order.
From Urban Resilience to Abolitionist Climate Justice in Washington, DC

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Abstract: What would abolitionism mean for climate justice? “Resilience” is proposed by experts as a solution to climate change vulnerability. But this prescription tends to focus on adaptation to future external threats, subtly validating embedded processes of racial capitalism that have historically dehumanised and endangered residents and their environments in the first place. This article focuses on majority Black areas said to be vulnerable to extreme weather events and targeted for expert-driven resilience enhancements in America’s capital city, Washington, DC. Drawing on key insights from Black radical, feminist, and antiracist humanist thought, we reimagine resilience through an abolitionist framework. Using archival analysis, oral histories, a neighbourhood-level survey, and interviews conducted between 2015 and 2018, we argue that abolitionist climate justice entails a centring of DC’s historical environmental and housing-related racisms, the intersectional drivers of precarity and trauma experienced by residents beyond those narrowly associated with “climate”; and an ethics of care and healing practiced by those deemed most at risk to climate change.

Keywords: abolition ecologies, antiracist humanism, intersectional feminism, ethics of care, urban political ecology, climate justice

Introduction
Public discourse in the US has recently acknowledged the unequal raced and classed geographies of extreme weather events. In the aftermath of the 2017 hurricanes that tore through the Caribbean islands, Florida, and Texas, for instance, the media recognised the rootedness of disasters in histories of colonialism, racialisation, and real estate capitalism (e.g. Buncombe 2017; Hobson and Bassi 2017; Misra 2017; Tharoor 2017). Yet, when the dust had settled, “resilience” once again defined the post-disaster landscape. In the wake of Hurricane Harvey, for example, conservative and liberal commentators alike lauded Houston’s social, physical, and spiritual resilience, identifying different avenues for channelling billions of dollars to rebuild the region (Solis 2017; Williamson 2017), while ignoring the longstanding exposure to oil refinery toxicity disproportionately borne by
Black and Latinx residents. With its pro-market visions of “building back better” and technological emphasis on green infrastructure, resilience thinking finds wide appeal among architects, planners, non-profits, journalists, and academics. Such visions privilege design solutions and externally imposed ideas for community cohesion, while eliding the structural inequalities that make particular groups vulnerable to climate threats in the first place. Moreover, resilience prescriptions tend to ignore the rooted practices of care and healing from historical trauma that residents already practice.

We put forth a framework of abolitionist climate justice based on Black radical, feminist, and antiracist readings of the environment and of political practice. We aim to contribute to a growing body of humanistic literature that seeks to decolonise climate change praxis. For indigenous scholar Kyle Powys Whyte (forthcoming), climate change praxis cannot be divorced from harm done unto indigenous bodies and their environments through settler colonialism yoked to industrial capitalism. Whyte writes against alarmist and posthumanist Anthropocene narratives wherein all humans are presumed to be responsible for intensifying environmental harm. He shows instead how climate change has historically unfolded through the dehumanisation of indigenous peoples and their lands—not to mention an erasure of this process in public memory. We situate our story of Washington, DC in a longer history of settler colonialism, racial slavery, and federally backed segregation in the region, arguing that contemporary precarity in DC’s northeast cannot be separated from the historical dehumanisation of the city’s residents and their landscapes. Following the call of this special issue, we argue that abolitionist climate justice entails the centring of (1) DC’s historical racisms, (2) intersectional drivers of trauma experienced and understood by residents beyond those narrowly associated with climate, and (3) an ethics of care and healing practiced by those deemed most at risk to climate change.

We explicitly recognise the valence of abolitionism both in the long civil rights history of Washington, DC and within Black radical thought. As we show here, descendants of 19th century Black abolitionists in Washington, DC continue to centre notions of abolition and freedom in their community activism. A city whose grandeur was built on slave labour, DC was a centre for abolitionism in the years leading up to the American Civil War (Asch and Musgrove 2017). In the 20th century, abolitionism provided the trope through which African American scholars and activists fought for myriad not-as-yet won freedoms. W.E.B. Du Bois (2014) outlined an abolition democracy, involving the institutionalisation of anti-racism in political and policy spheres. Angela Davis (2005) adapted the term to speak to modern mass incarceration, calling for the abolition of the prison industrial complex wrought in and through racial capitalism. Drawing on her long-standing political-economic analysis of carceral geographies, Ruth Wilson Gilmore (2017:228) has recently defined abolition broadly as “unfinished liberation ... [from] processes of hierarchy, dispossession, and exclusion that congeal in and as group-differentiated vulnerability to premature death”; in short, what Cedric Robinson (2000:xxxi) imagined as an “overthrow of the whole race-based structure”. Nik Heynen’s (2016:842) call for “abolition ecologies” brings this much-needed optic to the fields of urban political ecology and environmental justice,
arguing that we “work through intellectual silos” to imagine “nature free from white supremacist logics”.

In this article, we ask how abolitionism might translate to environmental and climate justice. Conversely, we ask how actually existing climate justice praxis might inform abolitionist thought. While “climate justice” has been a rallying call for frontline, indigenous, and people of colour activists in the US, it lacks definitional specificity. More troublingly, it tends to be coopted in politically blunt ways by international environmental organisations. We focus on Washington, DC’s northeastern Ward 7, part of the broader Anacostia River watershed (Figure 1a and 1b). A low-lying area subject to mid-Atlantic weather extremes, this is where expert-driven climate resilience is being operationalised in city plans. It is also an area with a culture of activism, in which housing, employment, health, and environmental inequalities have long been tackled by below-the-radar practices, trauma counselling, and an ethics of care focused on the wellbeing of seniors and children. As such, we frame abolitionist climate justice not only through Black radical thought, but also through feminist and humanist scholarship. Taken together, these traditions insist that we understand oppression as intersectional and that we read the imperative to rehumanise as core to radical politics.

Methodologically, research for this article was carried out between 2015 and 2018. It involved a neighbourhood survey (n = 193) on climate change vulnerability implemented in 2016 in the Kenilworth, Parkside, and Paradise neighbourhoods of Ward 7 in northeast DC; archival analysis on the history of Ward 7 and the wider Anacostia region; and oral histories and interviews drawn from city-level climate experts and Ward 7 residents, leaders, and activists. We start by explaining how what we refer to as “mainstream resilience thinking” has become official policy in Washington, DC. We then move the theoretical gaze from resilience to climate justice, drawing on activist vocabularies and critical-theoretical frames. Next we detail our empirical work by focusing the two subsequent sections on, first, a history of environmental racism in DC’s northeast, and second, on an ethics of care that seeks to undo historical trauma, while also launching structural critiques of racism. We conclude with broader implications for our framework of abolitionist climate justice beyond the DC case.

Mainstreaming Resilience in Washington, DC

Stop calling me resilient. I’m not resilient. Because every time you say, “Oh, they’re resilient”, you can do something else to me. I am not resilient. (Tracie Washington, quoted in Woods 2017)

In the aftermath of Hurricane Katrina which struck New Orleans in 2005, Louisiana-based lawyer Tracie Washington famously objected to being called “resilient” by outside observers, going so far as to launch a poster campaign with the quote above. As she and fellow activists saw it, resilience language normalised the onslaught of external climate and economic threats, assuming the endless capacity of affected groups simply to cope. As Kaika (2017) argues, also referencing Washington’s quote, resilience language fails to account for what creates the need
Figure 1: Maps of the Anacostia watershed (a) and study area (b) [Colour figure can be viewed at wileyonlinelibrary.com]
to be resilient *in the first place*. Within the natural sciences, resilience connotes the ability of social systems to weather adversity; to bounce back from unforeseen disruptions or shocks; and, per its original formulation by ecologist C.S. Holling (1973), to adapt to a new normal following disruption. As a “scientific and policy fad” (Tierney 2015:1329), the surge in resilience thinking stems from the damage witnessed from hurricanes and earthquakes in the last decade, even while the concept is being stretched beyond natural disasters to include financial crises, unemployment, and terrorism, among other shocks (Brand and Jax 2007; Fainstein 2015).

Resilience became an official policy strategy in Washington DC in 2016 when the city became part of the competitive 100 Resilient Cities program and launched its Climate Ready DC Plan. The 2016 Climate Ready Plan involves enhancing resilience to future threats, specifically focusing on the spheres of infrastructure, design, and housing. Technical assistance and financial support largely came from the Rockefeller Foundation, while the city’s Resilience Strategy is coordinated by the Resilient DC office, housed within the Office of the City Administrator. The initiative broadly seeks to assess current resilience among stakeholders, identify partnerships, and ultimately to address both sudden shocks and longer-term stresses.

While such future-gazing planning recognises the need to assess existing vulnerabilities—and indeed acknowledges racial and economic inequality—such acknowledgement is belied by the actual trajectory of such efforts. Relatively little is done to assess the rooted experiences, knowledges of, and approaches to sudden and slower-moving stressors among frontline communities. Everyday threats, such as gentrification or food insecurity, that do not fall under the categories of environment or climate per se tend to be ignored. The rationale behind such resilience efforts is pitched in terms of the gross economic costs of infrastructure and building damage, more than the psychological and material trauma of displacement. Illustrative here is a 2008 report on the challenges of flooding along the Anacostia and Potomac rivers (NCPC 2008). Instead of focusing on existing realities that we examine closely below—including, crucially, the intersections between housing and food insecurity—climate adaptation is positioned within the domain of technical prescriptions such as improvements to levees and federal floodplain maps (NCPC 2008). Smart growth policies such as revising zoning ordinances, protecting vulnerable areas from new developments, improving storm water management, adapting transportation systems, mitigating urban heat islands, and street design standards are all also discussed as strategies for fostering greater resilience in the face of climate change (EPA 2013; Hoverter 2012; MWCOG 2013).

Such thinking and practice raise two ontological questions: resilient to what? And who is to benefit from resilience? On the first question, resilience discourse tends to focus on “climate proofing” the future, rather than ongoing and historical causes of harm. If the afterlives of historical oppression are erased, and/or if the “here and now” of precarity is poorly understood or wilfully watered down, then resilience thinking necessarily conjures more of the status quo—with only superficial changes as recommended options. On the second question, since
2005 the history of disaster recovery efforts in the United States indicates that the main beneficiaries are private contractors, consultants, architects, designers, and financial and corporate executives who profit from federal resilience-related contracts. Meanwhile, affected residents are forced to act as entrepreneurs to receive funds, while city agencies rubber-stamp community “participation” as part of their sustainable city planning (Adams 2012; Derickson 2014; Gotham 2012; Tierney 2015). In other words, resilience discourse is articulated with neoliberal, market-based fashions influencing planning and architecture. Leitner and colleagues (2018) refer to this assemblage as a “global resilience complex”. Perhaps most problematic, resilience may heighten underlying racialised fears.Ansfield’s (2015) research, for example, suggests that in post-Katrina New Orleans, historically honed tropes of “contamination” and “uninhabitability” were marshalled via top-down resilience planning into renewed state violence against Black lives, including heightened policing and evictions.

We do not yet know the full ramifications of DC’s resilience strategy. At the same time, the suspicion that some Black elected representatives harbour towards it evinces the disconnect between expert-driven visions and the lived experiences and situated knowledges of the city’s residents. For instance, in a publicly posted video recorded during an unexpected DC snowstorm, councilmember Trayon White (Ward 8) blamed resilience as part of a charged conspiracy theory about climate manipulation: “And DC keep talking about: ‘we a resilient city.’ And that’s a model based off the Rothschilds controlling the climate to create natural disasters they can pay for to own the cities, man. Be careful” (Jamison and Strauss 2018). The councilmember has reputation as a defender of the city’s low-income Black populations. He soon apologised for the anti-Semitic and off-the-cuff nature of his remarks, though he made no further commentary about the conspiracy theory. What was amply clear was the councilmember’s scepticism and negativity towards expert-driven resilience. Though this example may represent a fringe view, it should be noted that mainstream resilience is hardly politically neutral in DC, nor separable from the class and racial tensions that have long characterised this and many other American cities.

From Resilience Thinking to Abolitionist Climate Justice

Some scholars suggest that grounded ways of knowing and articulating resilience may help to address these disconnects and render resilience thinking more relevant and meaningful (DeVerteuil and Golubchikov 2016). Others attempt to redeem resilience by focusing on how those who suffer from climate change engage it within an everyday politics (Taylor and Schafran 2016; Wapner 2016). A proposed framework of “resourcefulness”, alternatively, might offer a counter-systemic approach to framing resilience, one that is also pragmatic and rooted in self-determination (MacKinnon and Derickson 2012). We are sympathetic to this academic debate over whether to keep or not to keep resilience. For instance, frontline activists continue to use the word “resilience” to signal a variety of goals. Thus it is neither practical nor desirable for radical scholars to do away with this
term. However, we find that resilience has left little room for scholars to engage language that is broadly legible to activists, and that can be vested with place-specific ways of knowing and feeling, namely climate justice. Crucially, use of “climate justice” demands attention to history and, counterintuitively, to intersectional processes that are not solely associated with climate or the environment. Climate justice’s semantics opens up possibilities not always afforded by resilience.

Unlike resilience, the uptake of climate justice has mainly been among grassroots activists, including Black, Brown, and indigenous groups who draw upon earlier frameworks that understand the environment more capaсiously as encompassing labour rights, land rights, housing, toxics, health, and other social justice concerns. Here, climate change is seen as inextricable from broader social, political, and economic processes (Bond 2012; Moellendorf 2012; Schlosberg and Collins 2014). For example, at the 2015 Conference of Parties to the United Nations (COP-21) held in Paris, a delegation representing historically Black colleges and universities co-organised by veteran environmental justice scholar Robert Bullard made explicit connections between Black Lives Matter and climate justice. As one activist present, Sarra Takola, put it:

When you think about a cop shooting you, it’s an immediate death ... But climate change—with [related] pollution that’s mostly in our backyard—is still killing us. Respiratory diseases, asthma, and various cancers are slower killers, but connecting them to Black Lives Matter is really important. (Quoted in Floyd 2016)

At the People’s Climate March in 2017 in Washington, DC, a banner hanging in a neighbourhood protesting evictions in DC read: “Housing Justice is Climate Justice” (Lockwood 2017). The connection between housing and climate justice is a key one also being explored by scholars. As Cohen’s (2018) work has shown, a policy commitment to affordable housing can yield important carbon benefits, and as Rice et al., (2019) have argued, unless urban climate planning explicitly addresses housing equity issues, it can risk reinforcing gentrification trends (Rice et al. 2019; Cohen 2018). At the event, youth from Soil Generation, a Philadelphia-based collectivity of Black farmers, used street theatre to draw connections between police brutality and climate change, summarising the move simply as “we’re not just here for climate justice”. Bullard himself had earlier called for environmentalism to be “broadened to incorporate organisations and groups that may not necessarily have ‘environment’ in their name” (Floyd 2016, emphasis added), a sentiment strongly echoed by our own research in Washington, DC.

How can radical scholarship contribute to thinking and praxis surrounding climate justice, especially the notion that climate justice is “not just about climate”, and calls for confronting racism and environmental harm together? Articulated with the abolitionism found in Black radical thought, we identify three key insights drawn from feminist and humanist scholarship.

First, feminist scholars have long insisted that oppression and struggle must be understood as intersectional—not only in the sense of overlapping identities (e.g. race, class, gender, age, faith, ability, sexuality, etc.), but also in the sense of materialities and lived experiences (e.g. Collins and Bilge 2016; Crenshaw et al. 2012; hooks 2015; Taylor 2017). The notion that climate vulnerability is historical,
intersectional, and multidimensional has also been recognised in the interdis-
ciplinary and critical social science literature (Hardy et al. 2017; Malin and Ryder
2018; Thomas et al. 2018). As a case in point, in northeast and southeast Wash-
ington, DC, gun violence, police brutality, and substance abuse compound with
income and food insecurity to impede the ability of youth to physically and psy-
chologically weather all manner of crises, including eviction (more frequently) or
extreme weather events (less frequently). Similarly, a lack of public transit and
grocery stores is felt especially acutely during inclement weather in areas with a
large aging demographic, as is the case in northeast. It is thus incumbent on
scholars who seek to understand climate change to look to a host of intersecting
“not-the-usual-suspect” materialities and identities that mark the lived experience
of climate change (Kaijser and Kronsell 2014).

Second, from feminist scholarship, we know that political struggle must be
rooted in the experience of home, neighbourhood, and workplace (Combahee
River Collective 1977; Taylor 2017). Feminist geography has long insisted that the
intimate and personal matter for geopolitics (Mountz and Hyndman 2006; Pratt
and Rosner 2012), and, specifically, that environmental justice struggles reflect
embodied harms (Doshi 2017; Truelove 2011). As an extension of this argument,
feminists contend that political agency does not always come in loud acts of pro-
test, defiance, or mass movement (Weheliye 2014), but rather can be articulated
through a subtle ethics of care rooted in nodes of domestic, youth, or elder care
(Lawson 2007; Williams 2017). These may be illegible to outside experts, but ulti-
mately go a long way in healing wounded cities (Till 2012). Thus, as we have
found in northeast DC, narratives and practices of trauma healing and care are
neither loud, nor do they necessarily register as environmental. Yet we contend
that they are invaluable for moving us towards abolitionist climate justice.

Third, and finally, the conjoining of Black Lives Matter with environmental acti-
ivism suggests that antiracist humanism is paramount to contemporary environ-
mental justice movements. What is at stake here is reclaiming what it means to
be human. Black humanist scholars such as Sylvia Wynter have critiqued the uni-
versalising assumptions of liberal humanism and liberal environmentalism, ques-
tioning how “Eurocentric Man” came to stand in for the figure of the human,
while non-white others have been rendered primitive or even sub-human through
processes of colonial exploitation, capitalism, and patriarchy (McKittrick 2015;
Wynter 2003). Like Whyte, Wynter argues that historical dehumanisation via colo-
nialism and capitalism can be seen as concomitant with ecological harm. Along
these lines, Austin Zeiderman (2019:172) has recently argued that a “re-engagement
with humanism is necessary for confronting the unequal distribution of precari-
ity in the Anthropocene”. Working through his research on Afro Colombians
and racialised dispossession along the coast, Zeiderman draws on Paul Gilroy’s
(2018:14) argument that a “reparative humanism”—a humanism that speaks to
and redresses the experience of antiblackness—can build a more refined political
ecology against the flattening ontologies given by the Anthropocene frame. As
we discuss below, this rehumanising imperative undergirds narratives of healing
from historical trauma and an ethics of care in Washington DC’s Ward 7.
In sum, narratives from the frontlines deploying climate justice as a frame help bolster scholarly engagement with the term because of atypical connections made between the environment and social and political life. Conversely, scholarly insights into intersectionality, an ethics of care, and a rehumanising politics help frame and bolster the intellectual underpinnings of climate justice. We turn next to a history east of the Anacostia River.

Environmental Racisms East of the Anacostia River

all that change-the-world cheek rubbed raw by power in the end,
all that politics, when you see it from this side of the river,
polluting the air like the smoke that used to rise from Kenilworth,
all the city’s trash burned in the city’s marshes, beside the river.
That dump is a park now, but still the stench of war boils up
from downtown buildings, roiling clouds of wasted lives and cash.
(Joe Lapp 2006b, ‘The war from this side of the Anacostia River’)

Two rivers run south through the District of Columbia emptying into the Chesapeake Bay: the Potomac, located to the west and bordering wealthy white neighbourhoods, and its smaller tributary, the Anacostia, which borders the far northeast and southeast neighbourhoods of Ward 7 and 8 respectively (Figure 1). The latter two wards are where a majority (> 90%) Black population is concentrated in flood-prone flats (Asch and Musgrove 2017:5). Not surprisingly, these areas underscore the city’s stark racial geography. Ward 7 experiences nearly double the rate of poverty compared to the District average (US Census Bureau 2017), making it a piece of the “Third World” within the “First” (Bratman 2011). This is an area associated with “trash”, “dump”, and “stench”, as Joe Lapp, an anti-Vietnam War activist and a long-time resident of Kenilworth, penned in his poem ‘The war from this side of the Anacostia River’, referencing the ward’s legacy as host to an open-burning incineration facility.

From this side of the Anacostia—among the marshes bobbing with discarded plastic bottles—we get a sense of the city’s settler colonial history. It is here that the Nacotchtank tribe of the Piscataway Nation, native peoples of the region, once farmed, fished, and traded. This land, seized and divided by European settlers in the 1600s, was cultivated for tobacco for over two centuries on plantations laboured on by African slaves. Ultimately, this landscape gave way to military and industrial projects, toxic waste, 20th century housing segregation, and 21st century gentrification. From this side of the Anacostia, America’s capital can more properly be seen as sedimented with settler colonialism, racial slavery, militarism, and racial segregation. It can also be understood to continue as an internal colony with respect to the rest of the nation, given its lack of democratic representation in Congress, and the political and economic disenfranchisement of its African American residents (Bratman 2011; Williams 2001).

In this article, we understand environmental racism as the result of a “diversity of racisms” (Pulido 2000:13), both past and present. To understand the production of the Anacostia region’s historical political ecology, we focus on three racial
projects: (1) plantation slavery and the ruination of the Anacostia watershed (late 1600s–late 1800s), (2) post-war segregation (1940s–1960s), and (3) the establishment and inadequate closure of the notorious Kenilworth open-burning dump, a site declared highly toxic by the US Surgeon General (1960s–1980s). While the discussion here is necessarily brief, the goal is to highlight pivotal junctures that have contributed to socio-ecological precarity in far-east DC.

By the late 1600s, European settlers had established tobacco farms all along the Anacostia rivershed, relying on its deep channel to transport harvests to the ocean and back to England, and deploying chattel slavery to turn a profit (Smithsonian 2012; Wennersten 2008). Over the next 150 years, tobacco rose and fell as the area’s primary economic driver. Bladensburg Port in Maryland at the head of the Anacostia gained prominence in the 1740s as a regional trading centre, with tobacco grading, sorting, and shipping as its main activities. However, a century of plantation capitalism later, massive soil erosion and siltation had set in. The Anacostia’s silted up shores gradually collapsed and cascaded into its waters, filling in the deep shipping channel. Tobacco plantations left marginal, unfertile soils in flat and rocky lands, which came to be settled by freed slaves with the end of the American Civil War. It also left a watershed denuded of forests, vulnerable to flooding. In this way, DC was not unlike the US’s southern Gulf Coast, where the roots of flood disaster were set in motion two centuries before Katrina. The earliest recorded flood near Bladensburg occurred in 1889; nearly 40 years later, another severe flood destroyed 100 homes “occupied by colored people” (Biddle 1953:319–320). Today, areas surrounding the Anacostia River are predicted to be at risk of flooding and storm surges (DC Department of Energy and Environment 2018).¹

With plantation capitalism resulting in erosion and flooding, by the early 1900s, the federal government had relegated the Anacostia River as a repository for the city’s sewage, animal waste, and effluents generated by naval stations, industries, and the Benning Road power plant (today, a decommissioned power plant). Simultaneously, the federal government upgraded the Potomac River (which had also been polluted at the turn of the 20th century) as a source of DC’s drinking water through purification, dam, and aqueduct projects. The racial and spatial politics of the region played out in the diametrically opposing imaginaries of the two rivers, separating west from east DC. Compounding the west–east colour line, slum removal from downtown areas, highway building, residential redlining, and restrictive covenants all played significant roles into the early 1940s (Green 1976). So blatant were removal efforts displacing Blacks to eastern parts of the city that a group of Black civic associations called for the abolishment of the Alley Dwelling Authority in the 1940s, issuing complaints to the Real Estate Licensing Board over the restrictive racial covenants and mortgage redlining practices which perpetuated real estate prejudice.

During and after World War II, however, government agencies redoubled their efforts at segregation, pushing highway building and city beautification in the post-World War II period. The building of the Kenilworth Avenue Freeway and Anacostia Freeway, for instance, resulted in eminent domain-based seizure and destruction of over 30 homes, along with a church, a nightclub, and a community centre, despite local opposition (Lapp 2006a). The Anacostia Freeway also had the
result of fragmenting the community: as Angelé Doyne, long-time resident of Ward 7 and community organiser, reflected on this history: “so many things were done to us ... the freeway was intentionally built to separate the community”. The Redevelopment Land Authority demolished entire Black downtown neighbourhoods, including businesses, churches, and well maintained homes in the name of city beautification (Thursz 1966). While highway and neighbourhood demolitions were resisted in white neighbourhoods, poor Black neighbourhoods were not able to resist them as successfully. The net result was that more than a quarter of displaced Black families were corralled into crowded and substandard housing conditions east of the Anacostia, setting in motion conditions that we see today.

As working class white families left for the suburbs—lured by mortgages, ordinances, and covenants that Blacks were excluded from—the Ward 7 neighbourhoods of Kenilworth, Eastland Gardens, and River Terrace turned into predominantly Black communities. Later, a tide of Black middle class out-migration from far-east DC also occurred, with higher income Black families moving out of established neighbourhoods in Kenilworth into Prince George’s County, further east in Maryland (Lategola 1996:9). Formerly white and Black middle class housing in Kenilworth began catering to younger, poorer Black tenants with larger families, eventually becoming Section 8 housing in the contemporary moment (ibid.). Once nicknamed “Chocolate City”, the historically Black majority in the District later experienced an 11% loss of the African American population between 2000 and 2011, largely from gentrification-related dynamics (Morello and Keating 2011).

While these details give a sense of acute spatial segregation, the city’s environmental history is incomplete without the story of the notorious Kenilworth trash incinerator, which illustrates the pervasive racism borne by the communities that are the focus of this paper. With the Anacostia River being condemned as contaminated and silt-laden, the Army Corps of Engineers began a massive reclamation project to dredge and fill in portions of the Anacostia riverbed in the mid-20th century. It finished this project—the Kenilworth Park, a section of the Anacostia Park—just in time for another major problem that was besetting the District: municipal solid waste. City commissioners reported in 1942 that trash was “overwhelming the city’s limited incinerator capacity” and that Maryland and Virginia counties would no longer accept DC’s waste (Board of Commissioners 1940:102). Eventually, they settled on Section G of Anacostia Park, behind the then newly constructed Black middle class residential complex, Mayfair Mansions, built by famed Howard University architect Albert Cassell. The decision to locate the dump here was rooted in the long-time association of the Anacostia with waste, regardless of the presence of Black middle class families in the area.

Kenilworth dump, overseen by the National Park Service, become emblematic of America’s urban waste and pollution problems: “an ugly, enormous, burning pile of solid waste, befouling the air of our nation’s capital with great plumes of smoke” noted the Surgeon-General (Stewart 1967:iii). By the 1960s, 250,000 tons of waste was burned on site annually. In July 1967, US Surgeon-General William H. Stewart held a conference on solid waste management, recognising explicitly the mercury and dioxins released into the air by burning at Kenilworth, and set a
deadline for the site to be converted to a capped sanitary landfill (ibid.). Less than a year later, a seven-year-old boy playing near the dump fell by accident. He was engulfed in the flames and died (Wennersten 2008:183). His death sparked outrage and renewed action from the community, including mothers lying down in the road to halt the dump trucks from adding to the burning pile (Lapp 2006a:18; Wennersten 2008:184). Kenilworth dump was converted to a sanitary landfill in 1968. In 1970, the landfill was finally capped and reclaimed as “Kenilworth Park” (NPS cIP 2013:6).

But concerns persist about contamination from the landfill, with soils measuring high in polychlorinated biphenyls, methane, hydrocarbons, and other carcinogens as a result of decades of trash burning. By 2013, toxicity testing showed that the growing mound of illegal debris atop the Kenilworth Landfill had toxicity levels up to 100 times greater than Environmental Protection Agency (EPA)-recommended threshold levels, which had already been identified as inadequate in the late 1990s. A series of missteps by the National Park Service (NPS) resulted in downplaying the harm, the failure to conduct environmental assessments, and lax regulation on illegal dumping, which continued at the site. The NPS recommended the installation of another 24-inch cap to reinforce the site in 2012 (NPS 2012), but high costs stalled the cap for five years. Only in 2017 did DC Mayor Muriel Bowser’s budget propose monies toward clean-up efforts. The dump remains an eyesore and a source of anxiety for Kenilworth’s residents, who must also deal with flooding at the nearby Neval Thomas elementary school, and a decommissioned power plant. Many residents, including Advisory Neighbourhood Commissioner (a locally elected leader), Justin Lini, expressed frustrations about the slow pace of clean-up at the dump site and ongoing illegal dumping in the neighbourhood, and that seeping toxins were likely washing into the neighbourhood during extreme rain events. To Lini, flooding wrought by climate change would make this landscape of toxicity more hazardous for residents living in the vicinity. Environmental justice studies since the early 2000s have shown longstanding inequality in terms of exposure to both point and non-point pollutants in the US more generally and for DC’s Black residents (McDonald 2000).

Today, these legacies compound with gentrification ramping up east of the river. In June 2015, a block from the Paradise at Parkside apartments, where most of the neighbourhood’s lowest-income populations live, we noticed a sign which pronounced proudly that “Luxury Townhouses from the mid-300s” ($300,000) are “coming soon”. Nearby, similar townhouses were built only a few years earlier. The writing on the wall is clear—change is coming, and it will involve new, wealthier people moving in, while DC remains in a persistent affordable housing crisis that hurts its low-income residents. Mainstream resilience does little to recognise and address these longstanding challenges and more recent gentrification. Environmental gentrification (Checker 2011) produced by resilience thinking can itself be a source of displacement for residents. Environmental gentrification in southwest DC involves redevelopment of new areas boasting “green” interventions and pedestrian malls, bike lanes, organic food, and recreation that promises to bring a “world class lifestyle”. Despite important tenant-protection checks (Galagher 2016) and limited equity housing cooperatives (Huron 2018), research
shows the steady displacement of lower income Black population from west to east of the river and further (Giambrone 2016). Psychological stressors accompany gentrification. As a long-time anti-gentrification activist in Ward 8 described it: “there’s so much opulent development around you that it starts to close in on you”.

**Experiencing, Knowing, and Tackling Intersectional Precarity: An Ethics of Care**

Our empirical research sought, first, to understand how climate change was recognised and experienced by residents in the Ward 7 communities of Mayfair Mansions, Kenilworth-Parkside, Eastland Gardens, and Paradise-at-Parkside depicted in Figure 1. Second, it sought to catalogue whether and how grassroots avenues can be tapped for enhancing climate and environmental justice. We selected these areas because they are located within zones forecast to be submerged by rising sea levels, especially at levels of five feet or more, and experience social vulnerability according to governmental reports. Our research aimed to ground such metrics in lived experiences. We conducted a survey of residents (n=193), and compensated participants with a $25 gift card to Safeway, the only grocery store in the area. We also interviewed and collected oral histories of neighbourhood leaders (interestingly, often referred to as “indigenous” leaders in the local context) and housing rights activists, and attended community meetings and events in Ward 7.

As researchers interested in climate justice, we asked questions related to recent memories of extreme weather events in our survey, hoping to gain insight into how residents coped during these events. Our survey yielded some useful demographic information: among respondents, 60% earned less than $45,000 a year in combined household income, 70% were renters, and 80% were African American. This is representative of 2017 census demographics, namely that Ward 7 has a median household income of $40,000 and is 92% African American (US Census Bureau 2017).

However, the most significant finding of our survey was indirect and unanticipated: the Safeway cards we offered as incentive were a major draw precisely because of the lack of food access in the area. As Ashanté Reese’s (2018) ethnography of Black food geographies in Ward 7’s Deanwood neighbourhood shows, many older residents remember a time of food self-reliance and the flourishing of community gardens, but today are navigating a paucity of grocery stores, and a lack of validation for their gardening efforts in the face of looming gentrification and displacement. One of our survey questions showed that the inability to get to a grocery store was the most serious impact of the last weather emergency. One anonymous survey respondent stated the inter-relatedness of the food access issue with other mobility-related challenges:

Areas east of the river are at a disadvantage during severe weather events because of the lack of grocery/drug stores, restaurants (not fast food), and shops within walking distance. We have to really prepare in advance otherwise we suffer as we wait out the
The quote highlights the challenges residents face due to the geography and layout of the area. Being constrained by the river, the area has only one main access road. Delving deeper into food insecurity, a non-profit receiving federal grants, discovered in a survey of Ward 7 that half of households surveyed answered “Very often” or “Often” to the question: “How often in the past month did you ever feel worried that you would run out of food before you have money to purchase more food?”

Related questions such as “Do you skip meals or go without eating?” revealed realities of pervasive hunger. Residents at Paradise-at-Parkside and Mayfair Mansions—both of which house a sizable low-income population—also consistently highlighted hunger as a serious challenge, particularly for children and seniors. Ultimately, our survey showed that residents face ongoing and intersectional struggles. Sudden weather events themselves are not as central as the interlinked and ongoing issues of violence, transportation access, poverty, and food insecurity (though these challenges are made worse by such events).

It was thus necessary to conduct oral histories and interviews to reveal a range of intersectional challenges that were not adequately captured by our survey. As Parisa Norouzi, Executive Director of Empower DC (an anti-eviction grassroots organisation), put it to us, helping to sharpen a self-critique of our survey:

> When I think of vulnerability, it’s day to day surviving, the struggle for transportation, to get around, food to eat, jobs, shelter, and, you know, the life struggles. People are just trying to manage and deal with the environment around them. There is really no conversation around the intersectionality of issues. The crisis experienced is the day-to-day of existence, just living.

A similar explanation around the “intersectionality of issues” came up in an interview with Angelé Doyne, Community Partnerships Manager for the East River Family Strengthening Collaborative and a member of the Anacostia Park and Community Collaborative’s programs on climate change and inclusion. Angelé recounts her experience speaking with residents:

> We were working on campaigning, like grassroots, on the ground, knocking on doors-type stuff, and letting people know, hey, this is going on, but what’s your immediate need, what’s your immediate concern, what’s happening with you? And ... it was: “I just got to eat today.” “Oh, my friend’s son was shot yesterday.” Things like that happen everyday. So those are the pressing issues that people aren’t connecting to global warming and sea-level rise as affecting their daily lives. But it does. And when flood season comes here soon, we have to be prepared for that.

Among other issues, several informants also spoke about the threat of gentrification and displacement in Ward 7. Gentrification is multi causal: part of the reason is rooted in inter-generational differences. For instance, Ms Hazel Beatty, an elderly Black woman who has resided in Ward 7 since the early 1950s, said: “The children and grandchildren of the Black Baby Boomers ... don’t want their homes”. She explained how the younger generation does a minimum to make
the properties habitable, and then rents them to Section 8 tenants who lack the means to refurbish these homes, leading to further decline in property value—thus catalysing profit-driven gentrification. Part of the reason, however, is rooted in aggressive redevelopment in Ward 7 over the last few years, particularly in the Parkside neighbourhood of Ward 7. Corporate real estate firm CityInterests has been steadily redeveloping the neighbourhood via large condominium complexes. In response to its latest project of 400 units near Interstate 295, ANC Commissioner Justin Lini was quoted as saying: “Many people are worried that new development is not for them, but for someone else” (Rushton 2017). One resident we spoke to elaborated on this complaint:

The developer is saying “we’re remodelling your place and we’re turning it into one or two bedrooms”. When we have families of like six people, how is a family supposed to fit into one or two bedrooms? ... The developers are saying there’s an affordable housing space right behind there. My friend just got a place and she’s paying $1,800 a month. That’s not affordable.

The decision to replace multifamily housing with single-family housing is a racially coded practice. Such practices have a long history in the US. Residents “know” these practices as deeply exclusionary, but such situated knowledge does not feature in city plans.

At a number of points in our conversations with residents, we heard not just about the necessity of connecting ongoing challenges such as gentrification, hunger, and housing with climate harm—much like the activists at the People’s Climate March were doing—but also about healing from historical trauma. As Angelé put it to us: “There is a huge disconnect between climate change and the realities people are facing. People are experiencing a lot of trauma. They are just trying to figure out how to survive”. This sentiment is at the centre of long-time resident and organiser Bruce Purnell’s work, which we see as emblematic of an abolitionist and feminist ethics of care. Purnell traces his family ancestry to abolitionism, Civil Rights activism, and the Underground Railroad, a 19th century network of secret routes, homes, and stops that helped slaves escape to their freedom:

My ancestors were stationmasters for the Underground Railroad. They had homes where they transported people from slavery north to Canada. It was a diverse group of people that believed in freedom. They put everything on the line. One of my great grandparents knew Frederick Douglass and the abolitionist John Brown. They were great friends. John Brown was a white man who chose to hang to make a point. Of course, they said he was crazy. But to know that means there is hope for everybody.

A psychologist by training, Bruce is founder and executive director of the Love More Movement, which aims to help people “heal from the wounds of the past and build communities that actualise the dreams of their ancestors”. His work centres the trauma of slavery, segregation, incarceration, the War on Drugs, policing, and, as he sums it, “this era which they call the New Jim Crow”. Bruce’s reference to policing echoed another Ward 7 organiser in his sixties, Charles Eaves, who spoke about being “indoctrinated in the in the era of Stokely Carmichael” (a
Black Panther leader), but for the younger generation, the “only Black history they have is Trayvon Martin”. Dedicated to addressing the “root causes” of trauma associated with new and old racial geographies, Bruce and fellow radical psychologists are prone to using the term “post-traumatic slavery syndrome”. At the same time, Bruce insists on hope, love, healing, and interracial solidarity as key tenets for moving forward: “I don’t think anybody is healed from these things, but we’re healing. It’s a process … we’re still moving towards liberation and freedom.”

Weekly, Bruce and the Love More Movement bring together Ward 7’s seniors under the program “Seniors Offering Unconditional Love” (SOUL) to sing Black freedom songs and share personal struggles. Over food, seniors attending these meetings connect with each other and proudly recognise Black history, while also speaking candidly about contemporary challenges relating to economic and food security. These practices are radical in that they valorise histories of Black freedom. But they are also about quiet acts of compassion, care, and understanding. They represent an abolitionist, feminist, and humanist ethics of care and healing that climate experts call “social cohesion” and that even critical social scientists have identified as necessary to weathering climate emergencies (Klinenberg 2002). Crucially, these practices fall outside of the realm of the “environment” and “climate” narrowly construed but are vital for building climate justice in that they foster networks of solidarity. As one resident reflected on such practices:

There are a lot of social connections that exist. People offer each other all sorts of in-kind support in times of crisis; they look after each other’s kids, share rides, check in on each other. Now, how do we strengthen those bonds?—that’s what we need to focus on. Instead, there’s the city’s response, which is almost always to bring in outside people and groups in to help.

Another example comes from Ms Tina Beeks, manager of the Paradise-at-Parkside (an affordable housing unit) Community Center for 23 years. Ms Beeks described a key aspect of her work as channelling food donations from churches, food banks, and government programs, or even “hot dogs from [her] own kitchen”, for children and elders:

I focus on the children because they will be the ones who suffer. Sometimes kids beg for money to buy ice cream from the truck. I try to share the little that I have. But I also have to focus on my seniors who need a liaison for house maintenance and food delivery.

Her use of the word “my” throughout the interview is telling, revealing an abiding sense of kinship with Paradise-at-Parkside residents, especially since there is widespread belief that “the needs and concerns related to seniors are mostly overlooked or neglected”. Ms Beeks laughed that many community residents see her as “momma”—as a social glue and source of stability and strength that keeps Paradise functioning. Building managers like Ms Beeks and the community centres that they run provide connective hubs of information-sharing, convening, and casual encounter. As she recounted to us, this commitment originates in her own challenges as a single mother struggling for housing and employment three
decades ago without a solid financial history. A home-owner in Ward 7 similarly describes community centres as a site of cohesion, and also describes neighbours’ care as a form of local “eyes on the street”: “Also, when I bought my house, I didn’t realise that every block has their own neighbourhood police. We hold each other accountable. I travel a lot and the neighbours are always like, ‘this happened and that happened’. We look out for each other”.

We observed performances of care, healing, and solidarity on a broader scale at an event organised by the East River Family Strengthening Collaborative in March 2018. Titled “Ward 7 Women of Excellence”, the event honoured younger and older women who directly contributed to the wellbeing of Ward 7’s residents, including by helping seniors “age in place”. The event drew over 300 attendees, the vast majority of whom were African American women. It featured artist Tammarah Addison’s spoken word poem “Pioneer” on her 2017 digital album Unbossed Unapologetic. The poem invokes anti-slavery narratives and freedom songs, particularly those of Harriet Tubman and Sojourner Truth: “We women have the natural power to do what needs to be done. We don’t need no cape, steel cover, or lasso. See, we’re second to none. Know your past”. Repeating Sojourner Truth’s powerful refrain “Ain’t I a Woman?” three times in a row, the poem summons “leaders before us to light the way” and calls on “superwomen” and “mothers of Black boys” to practice self-care because “we need you”.

We see these practices and cultural registers as fundamentally rehumanising. They are cognisant of deep histories of oppression and struggle. If as Gilmore (2017:227) puts it, “abolition geography starts from the homely premise that freedom is a place”, then these rehumanising registers are also homely practices of Black place-making outside of normalised and official cartographies of power (McKittrick 2011). They demonstrate Williams’ (2017) notion of “care-full” justice for healing wounded cities.

**Conclusion**

In her memoir *In the Wake: On Blackness and Being*, Christina Sharpe (2016:105) uses the metaphors of weather and climate to discuss the “impossible possibilities” for abolishing antiblackness. To Sharpe, “antiblackness is pervasive as climate” (Sharpe 2016:106). But also contained within the changing climate are “new ecologies ... political movements that seek to protect the environment”. To Sharpe, these new ecologies and movements, including maroon geographies and hidden scripts deployed at the margins, are necessarily unconventional and difficult-to-read from the outside, yet comprise the everyday work of antiracism, abolitionism, and environmental stewardship. While Sharpe is not concerned with the phenomenon of climate change per se, her literary use of climate and weather resonates with the aims of this special issue on abolition ecologies and with our own research. Indeed, the abolitionist approach deployed here recognises that environmental racisms are pervasive, interconnected, and produce effects that are compounding and unpredictable. So too, the search for freedom in this context comes from unexpected places. Just as codes on the Underground Railroad were embedded in songs and stories for slaves to communicate secretly among
themselves, we see relationships built on ethics, solidarity, and healing are not necessarily legible to the mainstream. It is in these relationships, however, where the social fabric necessary to respond to stressors is nurtured.

Beyond the Washington, DC case, this article yields four broad implications for climate justice. First, history is always present. Our study connected the dots between settler colonialism, plantation slavery, housing segregation, urban renewal, and disproportionate toxicity in the Anacostia region with myriad sources of present-day climate precarity. Indeed, there is no other way to understand contemporary climate change—either in its cause or manifestations—than to conduct such deep historical analysis. Rather than assign blame for vulnerability on individual bodies and deficient behaviours via indicators like “poverty”, “obesity”, and “lack of education”, as expert climate plans tend to do, it is necessary to shift the gaze to the historical and multi-causal production of harms.

Second, climate justice is not just about climate. The simplicity and power of this conclusion cannot be overstated. Just as national conversations in the US have started to link climate change mitigation with labour rights and job creation, so too do conversations about climate vulnerability need to be linked with other social, political, and economic arenas. More than is possible with a resilience frame, we find that the term climate justice opens up room for locating climate as one among many—and not necessarily overriding—intersectional drivers that impede the ability of people to lead healthful and dignified lives. While we initially went into our research with a climate vulnerability survey, we quickly learned the limitations of such a single-issue approach. As Gabriela Valdivia (2018) has recently noted, such an approach is common in international development and environmental policies. Yet, people do not live their lives according to single issues. Rarely do those deemed at risk to climate change in official maps and studies “see” or “know” the impacts of extreme weather events on their lives and homes in isolated ways. Qualitative and archival avenues taught us that overlapping arenas of food insecurity, lack of transit, and threats to housing are understood as some of the greatest challenges in Ward 7, in addition to the insidious workings of carceral geographies in which Black residents are disproportionately policed and punished. As such, our approach to abolitionist climate justice valorises situated knowledges, fundamentally challenging the embrace of what mainstream commentators have lauded as “liberal environmentalism” (Bernstein 2002). We take issue with liberal environmentalism. Similar to the single-issue approach, liberal environmentalism tends to isolate “climate” as a discrete scientific stressor that can be distinguished from other arenas—as if somehow an extreme weather event’s effects are not fundamentally based on histories of racial inequality and difference perpetuated by the very elites who promote liberalism for some and not all in the first place (Bonds 2019; Ranganathan 2016).

Third, foregrounding an ethics of care also foregrounds an ethics of research. While recognising the very real risk of outside cooptation, there may nevertheless be room to support such ethics of care through intentional and strategic acts. Neighbourhood leaders are cautious about outside researchers; it was not easy for us, as outside academic researchers from a private university in DC’s wealthiest ward, to gain access to Ward 7’s residents, and for good reason. Offering
information and data that we had gathered first, rather than conducting research as a one-way street, helped to build trust, as did offering compensation for survey participation and profiling the abolitionist work of activists via public writing.

Fourth, and finally, environmental justice goals should be, more broadly, about freedom and liberation. The search for the “the environment as freedom” (Ranganathan 2017) must begin with acknowledging practices that rehumanise marginalised groups and that have already taken root in wounded places. We have tried to show here how abolitionist climate justice seeks to rehumanise environmental concerns. Relatedly, if outside actors are serious about addressing the disproportionate effects of all manner of environmental harms on poorer minorities, then reimagining the environment more capacious as where people live, work, and play is imperative. A broader understanding of the environment and climate through abolitionist praxis can be leveraged to extend financial and infrastructural support for non-traditionally “environmental” (and, often, by extension, non-white) organisations. This impulse may ultimately be of greater import to environmental and social wellbeing than narrow conservation or greening efforts.

Acknowledgements
We are indebted to the organisers, leaders, residents, and practitioners in Washington, DC interviewed for this research. Special thanks go to Justin Lini for a history of the Kenilworth-Parkside neighbourhoods, and introductions to Ward 7 community members. Our gratitude is also due to Derek Hyra at the Metropolitan Policy Center at American University for financial support, and to Megan Ybarra, Nik Heynen, and Katherine McKittrick for providing opportunities to present and publish this manuscript. We also sincerely thank Tracy Watson, Marissa Lorusso, and Isobel Araujo for conducting archival and qualitative research; Erin Matson for conducting historical research and producing GIS maps; and Abby Schwarz and Nathan Erwin for research and editorial support. Thanks also go to Austin Zeiderman, Kasia Paprocki, and Gabriela Valdivia for invitations to present the draft manuscript at various venues. Finally, our sincere thanks go to Antipode Handling Editor Kiran Asher, Editorial Manager Andy Kent, and anonymous peer reviewers. All shortcomings remain our own.

Endnotes
1 See http://dcfloodrisk.org/ for flood risk indicators and storm surge predictions for the District.
2 The authors are grateful to Ashanté Reese for pointing this out at the “Anti-Blackness in the American Metropolis” conference in Baltimore in November 2018.

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Confronting the urban climate emergency
Critical urban studies in the age of a green new deal

Daniel Aldana Cohen

Nothing will shape urban life in this century more than carbon—efforts to abolish it, and the consequences of its pollution. Critical urban studies must put the climate emergency at the very core of the discipline. This paper suggests four methodological injunctions to this end: (1) a field-wide development of carbon literacy along the lines of how all critical urbanists understand capital and inequalities; (2) research that links technical low-carbon urban projects to urban spaces’ core political conflicts; (3) both a recuperation of historical cases of democratizing, massive built environment intervention, and an engagement with the cutting-edge technologies of green urbanism, each in service of producing egalitarian visions of climate-friendly urban spaces; finally, (4) I argue that critical urbanists must join the fight, forging new alliances within and beyond universities to prevent eco-apartheid, and articulate a no-carbon, radically democratic alternative.
Introduction

Will anything shape urban life in the twenty-first century more than carbon—the efforts to abolish it, and the consequences of its pollution?

The only way to prevent global warming from increasing in intensity in perpetuity is cut carbon emissions to zero, ideally by 2050 or shortly thereafter (Masson-Delmotte et al. 2018). Decarbonizing will leave precious little of urban life, anywhere, untouched. And in most cases, decarbonizing will involve not just changes to street lamps and the greening of municipal buildings’ rooftops. It will involve changes to housing, transit, and land use; it will involve new systems for managing waste and new systems for circulating less centralized energy. This means, by extension, that the line between climate politics in particular, and virtually any other major urban contestation, has dissolved (Cohen 2017). And all this is urgent! The guardrail 2C target is more forgiving in terms of timelines than the safer 1.5C target; even with the 2C target in mind, leading climate scientists have said that the 2020s must be the decade of ‘Herculean’ efforts to transform the economy (Rockström et al. 2017).

That’s the causal end. The consequences will also be (unevenly) ubiquitous—and they could be apocalyptic. By one estimate, across the world, roughly 300 million people now live on land that would be underwater, by 2100, under a global average of 4 degrees Celsius warming—but not under 2 degrees Celsius warming (Strauss, Kulp, and Levermann 2015). Another 232 million live on land that would be flooded even at 2 degrees Celsius (Strauss, Kulp, and Levermann 2015). Never mind storm surges, occasional flooding, gradual land erosion, and other maladies associated with rising seas. The biggest numbers are in South and South-East Asia, but coastal cities the world over are vulnerable. They are nearly all also vulnerable to heat waves and stronger storms, and in many cases drier droughts. And all of this has already begun: with adaptation even more obviously than decarbonization, the politics of climate safety and of pre-existing struggles over housing, transit, infrastructure, and so on, are one.

And cause and consequence are merging: what use are solar panels covering bungalows that are destroyed by sea level rise or wildfires? Increasingly, in both imaginaries and concrete projects, we will see a fusion under the two ostensibly contrary priorities of decarbonization and adaptation (Wachsmuth and Angelo 2018).

Each urban space will be touched by the effort to decarbonize, each urban space will be impacted by warming, and the slower we decarbonize, the more severe those impacts will be. One can debate the definition of ‘the urban’. But whether one is speaking only of big, jurisdictionally delimited municipalities or a ‘planetary’ fabric of differentiated urban space: carbon’s primacy obtains either way.

The climate emergency is here. And it is as grave for social science as it is for organized life. For neither is prepared for the all-encompassing changes that are now inevitable—changes whose severity is still up for grabs. For decades, a tiny subset of society, and a comparably tiny sub-set of social science, has self-identified as being principally concerned with the environment; even fewer have focused on climate change as such. Now that the climate emergency is shredding the already untenable divisions between social and ecological inquiry.
(Mies 1986; Moore 2015), there is a plethora of new scholarly paradigms for a more encompassing framework. In this essay, I will not attempt to review the tradition of urban climate studies, or the competing paradigms for socio-ecological analysis (in and beyond urban studies).

I simply propose four methodological injunctions that I hope could prove useful across theoretical frameworks and particular traditions—not floating above, but cutting through. The first two are basic and general: (1) embrace carbon absolutism, and (2) link the political, the technocratic, and the carbon; my third injunction, with an eye to the politics of the 2020s, is idiosyncratic: (3) Take back the future and the past (of creative built environment changes). And my conclusion and final injunction: (4) Join the fight.

Embrace carbon absolutism

A handful of greenhouse gases (GHGs), most importantly carbon dioxide, are what cause climate disruption. For short, I’ll speak of carbon. The amount of carbon emitted will profoundly influence the extent of climate breakdown; and the form that decarbonization takes will transform urban spaces in various contextually specific ways. Carbon, then, is not akin to a particular sector or concern that, while connected to everything else, has its own internally consistent subject matter—like transportation, sport, or the arts. Until carbon emissions have been practically zeroed out, carbon will be more like money (or capital), or inequalities. These are pervasive phenomena that can be focused on primarily, or that must be kept in consideration at all times. Any critical account of urban transportation involves some understanding of capital and cost, and some sense of how it reproduces or softens inequalities. In practice, this is only possible because in the critical social sciences, analyses of capital and inequalities are ubiquitous. We are all basically literate in these phenomena, even if they are not our primary concern. We should all, I would argue, get to the same place with regard to carbon (Berners-Lee 2011; Ervine 2018).

This is not to say that we must all master the rudiments of climate science. Rather, understanding the causal relationship between human activity and climate change requires social scientific analysis of carbon emissions: the who, when, what, where, how? The natural science of climate change is mostly settled. (Probably the biggest remaining gap for urbanists is projecting small-scale regional change.) By contrast, both the social science of emissions accounting, and the carbon literacy of most of us social scientists, are still developing. Carbon emissions accounting is how we estimate the links between, say, driving a car or cooking a hamburger and the amount of carbon in the atmosphere. This involves statistics and—more difficult—assigning causal responsibility (Bergmann 2013; Jamieson 2014) Is the farmer who raised the cow responsible for the burger’s emissions? The restaurant that served it? The urbanist who devoured it? The agricultural system? The supermarket system? The restaurant system?

Because answers to these questions come down to abstracted quantification, I see carbon in the contemporary world as fundamentally analogous to capital (or money, or value). We all need to refine our carbon intuition so that we can
roughly understand what kinds of phenomena raise or lower carbon emissions in urban spaces.

Yet the two most common ways we have of thinking about carbon are limited: the individual carbon footprint, and the carbon footprint of some polity or place, like London. The standard carbon footprint of individuals doesn't comport with a theory of change—or even a theory of individual behavior—that critical urbanists would find compelling. Meanwhile, the carbon footprints of places is a deeply flawed instrument (Wachsmuth, Cohen, and Angelo 2016).

The carbon footprint of places—including cities—is almost always reported territorially, which means, one estimates how many emissions are physically produced in a place, then one adds the emissions from waste leaving the city, and of the electricity wired into the city (Yetano Roche et al. 2014). What this means is that affluent cities' normal carbon footprints—what I call their 'snowglobe' footprints—conveniently exempt all the polluting material work that enables their urban prosperity. A handful of wealthy cities have done both a snowglobe and a consumption-based footprint—ie, including an estimate of all the emissions involved in making and moving the goods ultimately consumed in the city (plus air travel of city residents). Typically the consumption count is two to four times higher than the snowglobe count (e.g. British Standards Institution 2014; Stanton, Bueno, and Munitz 2011; Stockholm Environment Institute - U.S. 2012). This gives a much more cynical picture of density in affluent places: far from a bullet-proof low-carbon technology, affluent density turns out to be a lovely form of environmental privilege—rub elbows with fascinating neighborhoods, while the factories that churn out your smart phones belch smoke in another land. Even the technocratic C40 low-carbon policy network has acknowledged that consumption accounting undermines the easy image of affluent, dense cities being low-carbon by default (C40 2018). Density anchored in affordable housing tends to have much lower carbon footprints than density anchored in luxury condominiums (Heinonen et al. 2013; Rice et al. 2019).

This more nuanced picture of density is just an example of the many upshots of a more nuanced analysis of carbon flows. It is the essential starting point because in a world of global trade flows and sprawling food and energy systems, it is hopeless to understand carbon and cities without a planetary perspective, without seeing cities as nodes in a world of flows. Most work required to decarbonize urban life will occur beyond city limits, in their 'operational landscapes' (Brenner and Katsikis 2016); the virtue of the 'planetary urbanization' and 'world ecology' frameworks is that they reflect this fact (Brenner 2014; Patel and Moore 2017).

And all that work—both within and outside cities—immediately involves complications far beyond the simple question of swapping tofu for beef, or wind turbines for coal power plants. In practice, the decarbonization of activities like space heating buildings, moving people in buses, producing steel and concrete, growing vegetables, and so on, involve innumerable technical complexities. But we cannot afford to lapse into a technocratic approach.

Link the technocratic, the political, and the carbon

How can we politicize urban carbon in our research? Should we simply describe (and/or critique) powerful, technocratic actors who are pursuing low-carbon
strategies that reproduce inequalities? Wait for urban movements from below to take up low-carbon urban politics and simply follow where they lead? Or can following the carbon in diverse ways expand our accounts of urban climate politics?

Urban political ecology (UPE) has taught a generation of urbanists to think about the environment, social inequalities, complex infrastructures, and urbanization processes in complex new ways. These studies have helpfully deconstructed rigid distinctions between experts and the rest, exposing the hollowness of ostensibly ‘post-political’ solutionism (Swyngedouw 2011). The principal topic of UPE research has been water. Water’s infrastructures are complex; they breach jurisdictional and spatial containers. But water is also concrete, relatively easy to apprehend, and watersheds are largely regional. It is easy to identify a range of protagonists pursuing contrary projects concerning water. The upshot is that UPE has taught us to see beyond the ridiculous notion that there is a contest between environmental and social priorities. In fact, there is a contest between different socio-natural projects. This framework cannot, however, straightforwardly inform analyses of urban carbon politics.

As I argued above, a satisfying analysis of carbon flows requires a dialectic of abstraction and concreteness, a multiplicity of accounting perspectives, and a planetary geographic frame. If mustering a grassroots movement to contest water governance, waste systems, or air toxins has been challenging (Sze 2007), it has been even rarer for grassroots movements of working people to organize around urban carbon emissions (at least until the last two or three years). Another possible reason that there has been so little work on carbon politics in the UPE tradition (for a signal exception, see Rice 2014) is that water and other urban-regional resources are not analogous to carbon. Take Hajer and Dassen’s (2014) sprawling effort to account for all major urban materials in a UPE framework of regional metabolism: carbon is absent. This all-encompassing political ecology of the urban is missing the principal cause of the era’s predominant urban environmental crises!

To center carbon in critical urban studies, we should also draw on the literatures on green gentrification (Anguelovski et al. 2018; Checker 2011; Dooling 2009; Gould and Lewis 2017). These studies essentially track how land markets and housing prices respond to local environmental improvement, typically causing the displacement of poor and working-class residents in the wake of greening.

Accounts of green gentrification typically combine research streams on environmental injustice (Agyeman et al. 2016; Bullard 2000) and a broader literature on battles over the urban ‘production of space’ (Lefebvre 1991), urban land markets and ‘growth machines’ (Harvey 1989; Logan and Molotch 1987), and ‘collective consumption’ amenities (Castells 1983). To be sure, green gentrification accounts are also limited by understanding greening in terms conventional environmental amenities and harms. But because the political economy current of this tradition concerns the intersections of housing, transit, and land use, and because those are such important drivers of urban carbon emissions, we can read carbon politics into battles over gentrification—both when the key actors talk about carbon, and when they do not. In my own research, I have argued that housing movements can be low-carbon protagonists if they defend affordable densification, in opposition to a luxury, low-carbon densification scheme, even if those housing movements do not speak about carbon; all urban actors...
are climate actors, whether or not they speak in those terms (Cohen 2017). I also found that with time, these same movements have increasingly adopted climate rhetoric, as discourse and research compatible with their visions proliferates (Cohen 2017, 2016). Echoing UPE, this is not a question of elite urban carbon hawks versus purely social concerns, but rival political visions of low-carbon urbanism.

And beyond the politics of low-carbon density, we can find intense contests around the intersections of political economy and carbon around all manner of low-carbon urban built environment dimensions (Feng and Hubacek 2016; Knuth 2019, 2016; Silver 2017; While, Jonas, and Gibbs 2010). Carbon is increasingly entangled in esoteric technical domains; a neighborhood micro-grid, district heating systems, smart meters linking heat pumps to utility sub-stations, and so on. The socio-technical systems literature shines in illuminating these complexities (Bulkeley et al. 2011), although it does not always succeed in showing their subtle connections to agonistic politics, from revolting social movements to bitter left-right political battles. Our job is not to invent or project protagonists who perfectly share our values and desires. But it is to explore enough social groups, and to situate socio-technical systems broadly enough, that we see where the most intense political fault lines are developing, and make sure we understand multiple sides of the conflict.

And just as elite urban projects have entailed a wide range of explicit and implicit carbon politics, so too have campaigns from below, civil society, and progressive politicians. Efforts to source more food for school lunches from organic farms in São Paulo, to stop airport (runway) construction in London and Mexico City, to increase metropolitan-scale public transit in Paris, all connect carbon and a diversity of political constituencies in different ways. In Washington, DC, organizers have linked climate politics with the framework of prison abolition (Ranganathan and Bratman 2019).

Put another way, while the multi-level climate governance literature (echoing the fast policy transfer literature) has helpfully highlighted the inter-city travel of climate policy ideas (Acuto 2013; Bulkeley and Betsill 2013), I am proposing a combination of sophisticated carbon accounting with relational and intersectional approaches to the multiplicity of local actors and political economies (Desmond 2014; Pulido 2016; Ranganathan 2016); this would focus our attention on carbon politics’ entanglement with social struggles where many core actors are not primarily oriented toward carbon. By that rationale, following the carbon across localities would yield a different economic geography than accounts of low-carbon policy city networks; we would instead focus more on political economic geographies of supply chains, mineral extraction, farming, energy infrastructures, and so on, which connect city and hinterland (de LT Oliveira, McKay, and Plank 2017; Klinger 2017; Riofrancos 2019).

All this work should maximize our analytic leverage when we confront the increasing rise of self-conscious climate movements and demonstrations in cities. They may not always call themselves urban movements, but how else could we think of Extinction Rebellion, a climate justice movement whose principal tactic has been interrupting urban flows of people and capital (Madden 2019).

Following the carbon into the viscera of social life should also enrich our understanding of adaptation politics. For one thing, as I argued above, getting
to zero carbon means that even poor urban spaces that bear effectively no responsibility for climate change will eventually be touched by decarbonization: low-income precarious homes will get electricity somehow, move around somehow, and so on. For another, insofar as adaptation projects do not in any sense engage the politics of decarbonization, this is something that a critical social science should critique and explain. Finally, the underlying dynamics whereby carbon is entwined with colonialism and racial capitalism also of course obtain in adaptation politics (Goh 2019b, 2019a; Koslov 2016, 2019), and in contests over UPE mainstays like water and its infrastructures (Doshi 2019; Millington 2018), which involve the exact same housing, transit, land use politics as fights over carbon and densification (Cohen 2016). A finer emphasis on carbon might help bridge ostensibly separate stories about decarbonization and adaptation.

Ultimately, we can only view carbon-oriented politics as irrevocably technocratic and esoteric if we believe that the traditional vehicles of insurgent and progressive politics—community groups, labor unions, housing movements, and so on—are incapable of thinking about carbon with as much nuance and precision as when they think about capital, racial and colonial violence, and interest group realpolitik.

Take back the future and the past (of creative built environment changes)

As bad as climate breakdown is now, and as big as climate protests, new green technologies, and pledged climate policies have become, the really big stuff is still ahead. Urban climate politics are always about the future. This is not unprecedented. The birth of urban industry, anti-colonial revolt, movements of women, radicalized communities, migrants, and others have focused on the future, and thought of it. But perhaps the climate emergency is distinctive in just how apocalyptic some of its most plausible scenarios are—they take the old genre of ‘dead cities’ (Davis 2002) and substantiate them with the world’s best science. At the same time, we confront eco-modernist utopias, dazzling green technological dreamworlds. How can critical urban studies take a more measured and critical approach to these imaginaries? And which histories should we return too?

We must reckon with the fact that fear of (all-too plausible) climate dystopias has become a political force. It is not just carbon emissions accounting that is increasingly shaping policies to change the built environment, but also the interpretations of climate models: projections of water scarcity, storm violence, sea level rise, and their damages. In Bangladesh, such ‘anticipatory ruination’ has come to justify an elite-driven ‘adaptation regime’ of economic development, which involves a dubious embrace of shrimp-farming in the Sundarbans, along with encouraging migration of young people from rice-growing villages into big cities to work in factories or urban services (Paprocki 2019). Why stay behind on shrinking land that is ostensibly doomed? In the United States, we have analogous struggles, only this time it is insurers whose cold mathematical models seem to map precisely how much insurance costs should rise for vulnerable properties, in effect redistributing populations and financial hardship
through climate projection (Elliott 2019). And at a different level, idyllic visions of ‘eco-city’ and ‘smart city’ futures are used to sell developments and projects—some of them vast—that often amount to little more than green-washed enclaves for the rich, superficial branding, or the harvesting of individuals data for tech firms’ profit.

Critical urban scholars have rightly critiqued these visions. The more challenging task is debunking with a reconstructive move. As I suggested above, this means teasing out alignments between prospective low-carbon efforts and really existing social actors and political forces. Here I push us to identify real or potential social and political alignments at the technological cutting edge of a democratic green urban future. This requires disentangling and investigating built environment interventions both in terms of modest systems and grand plans.

In terms of systems, we can think of emerging technologies that should be fought over, and over which we need a multi-sided understanding. Rooftop and community solar arrays, electric rickshaws, high-efficiency air-conditioning units, electric buses, home energy retrofits, low-carbon leisure amenities, neighborhood cooling centers, porous sidewalks, white and green roofs, restored mangroves and marshlands, ‘agrivoltaic’ systems (where solar panels shade pollinator plants and vegetables)—all these, and countless other potential interventions, can be found in urban climate plans, and in visions for the future that emphasize either luxury enclaves or democratic urban spaces (e.g. see Lennon 2017; Mulvaney 2019; Rao and Ummel 2017).

As scholarship on the practices proliferates, we might interrogate the conditions under which these new technologies and systems could be scaled up and managed democratically in urban spaces. We might borrow insights from relational political sociology, of the kind practiced by Gianpaolo Baiocchi (Baiocchi 2005; Baiocchi, Heller, and Silva 2011) in his studies of participatory budgeting politics in Brazil and elsewhere. This work complicates the hard conceptual divide between ‘civil society’ or ‘social movement’, and state. From this perspective, states and movements are always overlapping and co-constitutive. Participatory budgeting really has put neighborhoods in charge of a giant piece of a city’s budget. On the other hand, compared to Porto Alegre’s achievements, participatory budgeting in North America, over tiny pots of city councillor’s discretionary funds, is just a waste of everyone’s time (Baiocchi and Ganiuza 2017).

It is this context-specific challenge of scaling, enabled by public investment, that we need to think with. We might mix our carbon imagination with historical analogy. Part of our task is to compare emerging urban climate politics with what they might become, spaces of (climate) hope: projects where large scale transformations of the built environment at once slash carbon emissions, increase adaptive capacity, and abolish inequalities. This isn’t the norm of rigorous social science. Then again, rigorous social science with a temporally restricted framework is in constant danger of naturalizing the prevailing power relations (Unger 2002). Breaking with the Thatcherite ‘There is No Alternative’ dogma means taking climate justice as an organizing principle of urbanization seriously as an emerging possibility.

One way to ground possible near-term climate just futures would be re-examining major urban efforts to strategically leverage particular built
environment interventions to achieve multiple goals at once. To see a pretty
democratic and successful example, we could revisit Red Vienna’s successful
program of social housing construction (Blau 1999), whose legacy is a dense,
affordable, relatively low-carbon urban fabric. (We might also explore the different
Singaporean public housing model or the massive construction of council
housing in London after World War 2 as models of energy-efficient urban plan-
ing via social housing construction.) More broadly, we might revisit both de-
velopmentalist and anti-colonial urban visions that aimed to overthrow colonial
legacies and improve people’s lives dramatically in short periods of time. For
more contemporary examples, we could critically examine the recent São Paulo
master plan, which aimed to strategically densify city corridors with a dizzying
array of legal and financial mechanisms, while greatly expanding public housing
provision; the plan was largely written by an architect and urbanist (Fernando
de Mello Franco) and a historian of housing turned Workers Party city council-
or (Nabil Bonduki). We could also look at the more narrow efforts, with mixed
results, to implement bus rapid transit as a strategic, multi-benefit intervention,
from Bogotá to Cape Town. We could examine the inept but expensive recent
neoliberal green resilience infrastructure projects in the United States—but use
an analysis of landscape interventions during the New Deal to suggest better
approaches to contemporary challenges (Fleming 2019). As we assemble these
analyses, we might consider combining them into broader packages.

Conclusion: join the fight

What changed for climate politics in 2019, at least in the North Atlantic, was the
sudden idea that we could confront the climate emergency with a policy frame-
work at the scale of the problem: with a Green New Deal (Aronoff et al. 2019;
Klein 2019; Pettifor 2019). The European Union has even made its minimalist
homage in the form of a (much more limited) ‘Green Deal’, while the British
Labour Party ran on a Green Industrial Revolution that polled well—but not
enough, evidently, to prevent the party’s brutal defeat. The new Spanish coali-
tion government of Socialists and Podemos, whose electoral platforms includ-
ed a Green New Deal, declared a climate emergency in January 2020. At the
time of writing, in the United States, all the leading presidential contenders are
campaigning on some version of a Green New Deal—most prominently, Bernie
Sanders. And there are echoes of this vision of transformative green investment
elsewhere. In Brazil, the venerable United Nations economics group, ECLAC, is
proposing a ‘Big Green Push’ of environmental investment, with a focus on in-
frastucture. One way of reading the Green New Deal idea is that it is a leftwing
counterpart to the argument, increasingly made in elite global circles, that the
world requires a massive new round of investments in infrastructure and the
built environment—what Marxist critics have called a green ‘spatial fix’.

This grand vision has everything to do with urban spaces. The first Green
New Deal legislation introduced in the U.S., by Ocasio-Cortez and Sanders, was
a Green New Deal for Public Housing. Cities like New York and Los Angeles
are proposing their own Green New Deal legislation. And even policies not
explicitly framed in urban terms—from food to energy—implicate urban spaces
in subtle and obvious ways. We cannot know whether the specific Green New Deal phrase will survive politically for another year—or ten—but it does seem that at last, the idea of transformative green investment, largely driven by the public sector, has finally become one of the principal possible futures for urban climate politics.

With the likely return in the 2020s of a more ‘mixed economy’ model of economic and climate governance (from both left and right), we must find ways of becoming practically involved that don’t require surrendering our critical insights—and after all, the postwar heyday of global mixed economy models planted the seeds of neoliberalism and prevented more radical pathways (Offner 2019). So we must highlight contradictions—and delve into them.

In addition, then, to critiquing and combatting the rise of eco-apartheid and green capitalism, I would argue that critical urban studies might explore ways to deepen its public engagements, finding ways to support, inform, and of course improve Green New Deal-style urban climate policy projects. In this light, we might revisit the stories of urbanists who have thrown themselves into this kind of politics. I think of Catherine Bauer, the urban reformer who first traveled Europe in the early 1930s to see the latest trends in social housing, then helped found the Labor Housing Congress in Philadelphia, to lobby the New Deal government around a progressive vision of ‘modern housing’ (Radford 1996). I think of a whole generation of Brazilian urbanists—Nabil Bonduki, Raquel Rolnik, Erminia Maricato—who traveled back and forth between progressive governmental work with the Workers’ Party, and the University of São Paulo. And I note that these practical orientations imply closer links between urban scholars, social movements, political parties, and states. And they imply more overlap between urban scholars in social science and urbanists in the design professions.

Overall, I have hoped to argue in this short essay that a more sophisticated grasp of carbon flows, a better understanding of how esoteric climate policies intersect with agonistic politics, and a deeper familiarity with cutting edge green technologies and their likely futures, should equip us to join this decade’s existential fight for a decent urban future.

Disclosure statement
No potential conflict of interest was reported by the author(s).

Notes
1 I owe the idea of investigating London’s example to David Madden.
2 The phrase is not new; Pettifor gives a detailed genealogy of its first appearances, and how it came to prominence again in 2018.

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