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PENN: CURRENT RESEARCH ON SUSTAINABLE URBAN DEVELOPMENT

# Climate Justice and the Right to the City

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## INTRODUCTION

The two great challenges facing cities worldwide in the decades to come are inequality and climate change. Yet the two challenges, and the two sets of political infrastructures that prioritize them, largely operate in isolation from each other. Often, it is argued or assumed that actions to redress social and environmental challenges are in tension; they must be balanced. In this paper, drawing on case studies of low-carbon policy and water scarcity in São Paulo, I argue that the opposite is true. I outline the case that, for both infrastructural and political reasons, the best strategy to slash carbon emissions and adapt to the inevitable climate-linked disasters we cannot prevent is for public authorities working with community-based groups and movements to take immediate action to reduce urban inequalities, housing inequality in particular. In short, the best way to prevent ecological breakdown is to democratically pursue climate policies that reduce social inequality. Shorter: effective urban climate politics converge with the already-thriving “right to the city” agenda.

The “right to the city” concept originally dates to the late 1960s urban scholarship of French sociologist Henri Lefebvre, who understood this as referring to city-dwellers’ entitlement to shape and enjoy classic urban amenities like connectivity, culture, public services, economic security, and decent housing. More recently, geographers and sociologists have helped to specify a double-meaning lurking in the term when it is mobilized by social movements—a demand on the one hand for greater access to urban public goods, and on the other, for greater democratic influence in shaping the provision, quality, and governance of those goods (Weinstein and Ren 2009). While “the right to the city” is enshrined in some legal frameworks, like Brazil’s federal “Statute of the City”, it has never in practice gained a force of law analogous to more traditional, individualist rights that liberal legal frameworks have usually privileged (like the right to free speech). The “right to the city” has thus tended to be understood as a contested social right, focused on urban rather than national politics (cf Harvey 2008; Lefebvre 1996). But for reasons I will elaborate below, I want to argue that the idea turns out to embody an implicit climate politics that warrants far greater attention.

I am not the first to suggest that there is overlap between social and ecological objectives in cities, although I take my insistence to be uncommonly strong. At least in normative terms, the orienting principles that United Nations agencies have been developing for cities also imply interconnection. The UN’s Sustainable Development Goal 11.1 reads, “By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums.” (United Nations, n.d.). And objective 11.3 records the attractive (if vague) aspiration that, “By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries.” (United Nations, n.d.) Here, environment, housing, and citizen protagonism are all aggregated into a single agenda.

Meanwhile, the UN’s New Urban Agenda, agreed at the Habitat III conference in 2016, commits the world’s governments to recognizing the existence of a “right to the city” concept—albeit in reluctant, clenched-jaw fashion: “We note the efforts of some national and local governments to enshrine this vision, referred to as ‘right to the city’, in their legislation, political declarations and charters” (United Nations 2017: 5). Even this passive-aggressive phrasing was only possible thanks to the determined lobbying of civil society groups, especially the International Alliance of Inhabitants. The New Urban Agenda also makes repeated references to the virtues of intelligent densification, public transit access, and affordable housing—all keystone demands of “right to the city” campaigns.

Based on the UN documents, one can optimistically believe that there is now a kind of basic, baseline agreement at the world’s highest governmental levels that ongoing urbanization must reflect the needs and dreams of all city-dwellers, and that this urbanization must do so in sustainable fashion. Inequality and ecological crisis, the two great challenges for 21st century cities, are minimally combined at the UN level. The social and political question then runs, How do we achieve these objectives at once? How do we actually put into practice a climate-friendly right to the city? From the standpoint of a political sociologist, I seek to



answer these questions by examining cities' concrete, prosaic politics, with their hectic elections, vibrant social mobilizations, economic conflicts, and undulating public opinion. And I situate these in the context of global markets in urban goods and services that are presently exacerbating inequalities.

I argue that for practical reasons, a compelling strategy for building broad support around lasting urban sustainability interventions is to pursue environmental politics that directly reduce housing inequalities through policies that counteract many real estate market forces, which price attractive and well-located housing in cities beyond the reach of poor, working-class, and even middle-class residents (cf Rolnik 2016); that market tendency makes it very difficult to implement ambitious, place-based environmental policies without accelerating social displacement. To construct such policies, politicians and other civil society leaders will have to find ways to combine the priorities of environmental and housing-oriented movements. As discussed at greater length below, the underlying technical reason for this is that decarbonizing urban life involves changes to core threads of the urban fabric—housing, transit, and land use; these are some of the most contested dimensions of urban life, however, and so changes to them can never be socially or politically neutral.

Thus, to grasp the contested politics of this domain, I use a case study method that is especially attentive to political detail, reviewing lessons from my own research in São Paulo, where I have investigated both the fortunes of low-carbon policy and the politics around a historic drought—two cases where the politics of inequality and climate change were intertwined (Cohen 2016b; Cohen 2017). To paraphrase the opening of Leo Tolstoy's *Anna Karenina*, each happy city is alike (i.e., a set of coordinates on a UN road map); but each unhappy city (i.e., actually existing city) is unhappy in its own way. An understanding of São Paulo's case cannot stand in for investigating others, but may offer general principles that will have to be tested in other cases.

Below, I first outline the global spread of density-oriented low-carbon urban policy projects, as well as the increasing prevalence of urban climate threats, which are mostly experienced in some form through water. I show how these efforts and challenges exemplify some key concerns that animate the UN Habitat and SDG process. Second, I consider São Paulo's experience with low-carbon policies and struggles over housing, transit, and land use. Third, I analyze São Paulo's experience of a historic drought that nearly saw the city plunged into violent chaos. I conclude by reflecting on the lessons that my findings suggest for a broader effort to tackle inequality and environmental challenges in 21st century cities at the same time.

## CLIMATE CHANGE, 21ST CENTURY URBANIZATION, AND THE RIGHT TO THE CITY

Most human beings now live in cities. The proportion will grow for decades. Since cities are where most people live, it is in cities where the impacts of climate change will hit hardest. In the long term, relentless sea level rise, increased extreme heat days, and stronger storms will pose enormous challenges to many coastal cities. Indeed, besides the singular threat of increasing heat, climate-linked weather extremes will mainly be experienced in terms of water: too much, in the case of storms and floods and sea level rise, and too little in the case of localized drought crises and exacerbated long-term water stress.

As the fall 2017 Atlantic hurricane season reminds us, storms like Hurricane Katrina—which devastated New Orleans in the United States—and Typhoon Haiyan—which devastated settlements on the Philippine islands of Samar and Leyte—climate-linked weather disasters are passing from exception to norm. While worsening, sea level rise exacerbates hurricanes' threats by systematically elevating and spreading storm surges. Even without storms, sea level rise could be catastrophic.

Perhaps no other metric illustrates the enormity of the climate challenge. Researchers have compiled forecasts of sea level rise to compare the difference in 20 especially vulnerable large cities between flooding caused by sea level rise under a 2C warming scenario and that caused by a 4C warming scenario, for the year 2100. In



those 20 cities alone, over 90 million people already live on land that would be flooded under a 4C scenario, compared to 2C warming (cf Strauss, Kulp, and Levermann 2015; see Tables 1 and 2). The adaptation measures necessary to cope with displacements caused by 4C warming are impossible to contemplate. It follows that the most effective form of adaptation is mitigation—namely, curbing greenhouse gas (GHG) emissions.

Cities no longer have the luxury of working to slash their GHG emissions before the impacts of climate change arrive. Those impacts are already here. In this paper, I therefore consider, in turn, both the question of carbon and the issue of climate impact on cities—in this case, water stress. Water stress is exacerbated (but not caused exclusively) by climate change. By 2050, the World Bank (2016) estimates that 1.9 billion city-dwellers will live in water-stressed cities, characterized by seasonal water shortages, up from 500 million in 2000. Even before all the world’s coastal cities grapple daily with too much water, cities are increasingly struggling with too little. I argue that the question we should ask of climate disasters is not, How can cities prepare for the full range of climate impacts? Because the short answer is, they cannot. Instead, we must ask, How do cities’ adaptation-oriented responses to climate threats also contribute to attacking climate change’s root causes (mitigation efforts), by accelerating the effort to slash greenhouse gas emissions? The element of this question that I find especially crucial is, What kinds of political coalitions form in the wake of climate-linked extreme weather, and how do they understand climate action?

**Table 3a.** Top 20 urban agglomerations most affected by locked-in sea level rise from 4 °C warming, by total population, with comparisons to 2 °C warming

Urban Agglomeration	Country	2010 population below median locked-in sea level rise from different warming amounts (millions)		
		4 °C	2 °C	Difference
Shanghai	China	22.4	11.6	10.8
Tianjin	China	12.4	5.0	7.4
Dhaka	Bangladesh	12.3	2.0	10.3
Calcutta	India	12.0	5.6	6.4
Mumbai	India	10.8	5.8	5.0
Hong Kong	China	10.1	6.8	3.2
Jakarta	Indonesia	9.5	5.0	4.6
Taizhou	China	8.9	6.1	2.8
Khulna	Bangladesh	7.6	2.6	5.0
Hanoi	Viet Nam	7.6	3.6	4.0
Tokyo	Japan	7.5	4.2	3.3
Shantou	China	7.4	3.0	4.3
Haora	India	7.0	1.9	5.2
Chittagong	Bangladesh	7.0	3.8	3.2
Ho Chi Minh City	Viet Nam	6.9	4.4	2.4
Nantong	China	6.5	4.7	1.8
Wuxi	China	6.3	2.1	4.2
Osaka	Japan	6.2	4.2	2.0
Barisal	Bangladesh	6.0	2.6	3.4
Surabaya	Indonesia	5.5	2.7	2.8

Table 1: Effects of sea level rise. Source: Strauss, Kulp and Levermann 2015: 14.

**Table 3b.** Top 20 urban agglomerations most affected by locked-in sea level rise from 4 °C warming, by percent of population, with comparisons to 2 °C warming

Urban Agglomeration	Country	2010 population below median locked-in sea level rise from different warming amounts (percent)		
		4 °C	2 °C	Difference
Shanghai	China	76%	39%	37%
Hanoi	Viet Nam	60%	28%	32%
Haora	India	60%	16%	44%
Khulna	Bangladesh	58%	20%	38%
Shantou	China	54%	22%	32%
Calcutta	India	51%	24%	27%
Mumbai	India	50%	27%	23%
Hong Kong	China	46%	31%	15%
Dhaka	Bangladesh	38%	6%	32%
Osaka	Japan	38%	26%	12%
Tokyo	Japan	30%	16%	13%
Tianjin	China	29%	12%	17%
Rio de Janeiro	Brazil	24%	13%	11%
New York	United States	23%	13%	10%
Jakarta	Indonesia	22%	12%	11%
Surabaya	Indonesia	22%	11%	11%
Shenzhen	China	20%	9%	11%
Buenos Aires	Argentina	19%	8%	10%
Cuttack	India	18%	7%	11%
Quezon City	Philippines	18%	9%	9%

Only urban agglomerations with total 2010 populations in this analysis exceeding 10 million are included. Total populations estimated from LandScan data totaled within urban area boundaries from Natural Earth.

Table 2: Further effects of sea level rise. Source: Strauss, Kulp, and Levermann: 15



Roughly three-quarters of greenhouse gas emissions are emitted in urban areas. Of course, not all (nor indeed most) of these emissions are subject to municipal policy. The rough proportion of emissions that city-level actors can tackle depends on economic and jurisdictional context. Still, cities are able to slash significant portions of the emissions associated with in-city activity even with only modest support from other levels of government; and, in a second order of influence, cities that manage to reduce emissions while increasing quality of life in a way that captures public attention can also deepen coalitions and bolster broad political support in favor of emissions-reduction policies at regional and national levels. Indeed, this is precisely what the low-carbon urban agenda has been since the 1992 Rio Earth Summit: make some progress locally, build political support for more progress at higher levels (Bulkeley and Betsill 2003; Bulkeley and Betsill 2013; see also Burke-White and Barron, this collection). In the 2000s, large cities took up this project with vigor through the founding and expansion of the C40 Large Cities Climate Leadership Group, first under London mayor Ken Livingstone, and then New York City mayor Michael Bloomberg (Acuto 2013). Thousands of cities worldwide, including most of the world's largest, richest, and most influential cities, have joined climate policy networks that put GHG emissions reductions front and center.

These cities can draw on broad support from academics, institutes, international organizations, and corporations (Glaeser 2011; Gore and Robinson 2009; Kousky and Schneider 2011; Corfee-Morlot et al. 2009; Cole 2015; OECD 2008). In the words of one planner, "The issue of global warming now represents the ultimate justification for [the compact city]; it is an imperative over-arching all aspects of policy on sustainable futures" (Hillman 1996: 39). Even Shell Oil futurists believe that the future of cities lies in low-carbon density (Shell International BV 2014).

The view here is that cities can increase residents' quality of life and slash GHG emissions by pursuing "smart growth" strategies of densification, including more housing near jobs, more public transit, and the land-use strategies required to facilitate these. Note, these are also the central plans of the right to the city agenda. Together, these densification strategies would facilitate less private automobile use, while facilitating more residential and commercial use of bigger buildings, whose energy efficiency can be increased. Today, "smart city" advocates claim that through efficiency-oriented technologies working with big data, even greater carbon savings can be achieved. I do not consider these claims in depth here because they are relatively new and unproven; moreover, at their most ambitious, they represent a new toolkit to ultimately achieve the same goal: intelligent densification that makes urban life more energy efficient.

In short, changes to the form of urban life could make a difference in curbing greenhouse gas emissions quickly enough to forestall catastrophic climate change. The exact scope of urban actions' potential is difficult to measure, since so much of what municipalities do interacts with other levels of government, and regional and global economic flows (Wachsmuth, Cohen, and Angelo 2016a). Still, it is telling that the urbanist Peter Calthorpe (2011) calculates that through urban densification alone, the United States could achieve half the carbon reductions needed, by 2050, for the country to do its share in holding global temperature rise to two degrees Celsius. A London School of Economics study of large global cities finds that even a modest blend of pro-density housing and transit policies could slash those cities' emissions by a third by 2030 (Floater et al. 2014).

Again, the urban contribution is to cut emissions by reducing energy via the transformation of the urban fabric—housing, transit, land use, buildings—through forms of intelligent densification. The key, however, is that this fabric is not socially neutral. It is, instead, the contested space of both highly visible social mobilizations and also the quieter, more enduring, grinding everyday social and political struggle that those mobilizations only hint at. Unequal labor markets have long characterized cities; today, unequal access to housing, prompted by decreased state involvement in housing provision and housing's increasing financialization, is also driving social inequality (Aalbers 2017). And because transportation policy is about people moving from their homes to their workplaces or other important sites in the city, transit politics and housing politics are intimately connected.



Housing implicates everything (Cohen 2017).

Moreover, while it is hardly ever remarked on in the policy literature, sophisticated urban carbon accounting models show, again and again, that the dense urban neighborhoods with low carbon footprints are those that are anchored by both affordable housing and good access to transit (Heinonen et al. 2013; Cohen 2016a; Ummel 2014; Wachsmuth, Cohen, and Angelo 2016b).

Meanwhile, it is increasingly environmental improvements to the urban fabric, often conceived to reduce inequities, that are raising land values and thus prompting social displacements (Greenberg 2015; Gould and Lewis 2016; Checker 2011; Cohen 2017; Wolch, Byrne, and Newell 2014). And this threat of displacement prompts social and political resistance. In a person's life, eviction is an existential threat (Desmond 2016) comparable to climate change.

Because the urban politics of climate change fundamentally implicate the terrain of struggle of social movements, I argue that we must transcend the labels that urban actors attach to their activities. All urban collective action has a bearing on environmental outcomes, and even more precisely on climate politics. Just as every actor is an economic actor, a cultural actor, or a political actor, every actor is a climate actor (Cohen 2017). All urban actors whose actions shape housing, transit, land use, and building policies are consequential climate actors (Cohen 2017). By this logic, it is not just environmental activists and green city planners who are urban climate protagonists. It is also real estate developers, city planners throughout municipal government, and—least intuitively—housing-oriented poor people's movements who struggle vociferously over housing, transit, and land-use policies in cities worldwide who are consequential climate actors.

While urban housing-oriented social movements have a wide range of demands and urban dreams, depending on their local context, a global "right to the city" movement has joined a wide range of these groups together to forge a common political platform. Typically, "right to the city" documents say little about the environment. But they emphasize the centrality of housing rights and access to transit, and of governance norms underlying these. These demands, in substance if not in rhetoric, coincide precisely with the low-carbon, intelligent densification agenda of the low-carbon city. As the urban historian Mike Davis (2010: 43) notes, "the cornerstone of the low-carbon city is ... the priority given of public affluence over private wealth."

## SÃO PAULO'S TALE OF TWO COMPACT CITIES

São Paulo's blend of high housing insecurity, punishing and polluting congestion, vibrant social movements resembles countless other cities of the Global South, like Mexico City, Rio de Janeiro, and Buenos Aires in Latin America; Johannesburg and Lagos in sub-Saharan Africa; Cairo in the Middle East; Beijing and Shanghai in China; Delhi, Kolkata, and Mumbai in India; and Jakarta in Indonesia. Of these, São Paulo was among the first to tackle climate change explicitly, making it a helpful case study of the climate policy ambition and disappointing implementation that has unfortunately characterized so many cities—South and North (Bulkeley 2011; Ryan 2015).

In September 2009, with strong leadership from the city's center-right mayor Gilberto Kassab, São Paulo's city council unanimously passed a climate law mandating a 30 percent cut in GHG emissions by 2012, against a 2003 baseline. The precise goal was evidently over-ambitious. But the underlying intent was reasonable: to stake out a bold low-carbon orientation, linking climate policies to other urban development measures that would increase economic dynamism and resolve basic problems with everyday life. The city had in fact been working toward this moment for years, and it won acclaim for taking this bold step. São Paulo was one of the first major cities of the Global South to seek to cut GHG emissions; in 2011, it was the first city south of the equator to host a C40 summit.

The most interesting element of the city's climate law was its commitment to "compact city" principles as a key organizing logic. São Paulo is a city with an extraordinary imbalance between its two job-rich economic cores, in the city's expanded center, and its sprawling peripheries, where most workers live. According to the city government's own figures from this period, about 3 million out of the municipality's 11 million residents lived in favelas, tenements, or other sub-standard conditions. Moreover, because of the city's spatial mismatches, it was extremely common for working-class residents of the city's peripheries to commute for four hours daily; indeed, São Paulo ranked at this time as having the second-longest commutes of any major world city (Moraes Pereira and Schwanen 2013). Although most working-class Paulistanos commute by bus, approximately a third travel by car. The pollution from congestion was so bad when the law was being passed that one official working in a coroner's office told journalists that when he opened the lungs of a corpse on his operating table, he couldn't tell if the person had been a smoker (Burgierman 2011). A 2005 audit of the city's greenhouse gas emissions found that three quarters were caused by private automobiles (Prefeitura do Município de São Paulo 2005). (A contributing factor is that much of the city's electricity, which is used in buildings and factories, is generated hydroelectrically.)

Thus, intelligent densification that increased housing in high-employment areas, and made these more walkable would help both resolve long-standing problems for residents' daily life and reduce GHG emissions—a classic case of accumulated co-benefits. The situation seemed a perfect win-win. And the city had a showcase project to develop its compact city idea: a downtown redevelopment called Nova Luz, a new light. The site in question was located in the city's historic center, an area well-served by public transit, close to towers of government and private sector offices, to many public services, and to sprawling formal and informal markets—in short, one of the city's two job-rich areas. Like inner city areas throughout the United States, São Paulo's centro had also come on hard times, leaving it with abandoned buildings—many squatted by housing movements—and a large population of street-dwellers. There was also a thriving small business sector, especially in the area of cheap electronics. Some artists, musicians, and other adventurous middle-class residents were already moving to the area.

The Nova Luz project promised to supercharge this process by allowing a private sector developer to expropriate abandoned and under-used buildings, build new commercial spaces, add significant new housing stock (much of it affordable), and turn the whole area into a living advertisement for a more intimate, open style of urbanism that could persuade the rest of the city to emulate this kind of urbanism—the sort of walkable, mixed-use neighborhoods most closely associated with Jane Jacobs' famous vision (now updated by the Danish architect Jan Gehl, influential in São Paulo, with his idea of cities designed "for people"). And indeed, São Paulo's secretary of the environment would insist, in each of his many presentations to climate policy audiences, that Nova Luz represented a key plank of the city's vision of a more functional, lower-carbon, and more livable future. The city even hired Latin America's most famous environmental urbanist, Jaimer Lerner, to design Nova Luz. (Lerner was famous for bringing compact city principals to Curitiba, with the world's first major bus rapid transit network.)

The problem was that both the housing movements and the small businesspeople already inhabiting the area designated for redevelopment opposed the project. The owners of small, cheap electronics shops feared displacement. Likewise, housing movements also objected, arguing that it was working class residents' and social movements' presence in the center, including culturally dynamic building occupations, that had revitalized the core of the city. These movements were—and remain—powerful. They then occupied dozens of abandoned buildings in the city center, including many in the area that would be covered by Nova Luz. The movements are largely led by and composed of women of color, who argue (with justice) that according to Brazilian law, the municipality was obliged to expropriate long-abandoned buildings and eventually convert them to social housing. If the local state failed, the movements would step in—occupying the buildings and pressuring the state to act faster.

With respect to Nova Luz, the housing movements also argued rightly that in prior urban redevelopments, promises of affordable housing had routinely been broken. Why should they stand down here for the same old promises of affordable housing—eventually? A local coalition of housing groups and small shop-owners, joined by allies in the leftist Workers' Party and many of the city's best-known urbanists, was soon at loggerheads with the city government.

Environmentalists despaired; they had little interest in the housing movements' proposals even though, in the abstract, both camps seemed to want more or less the same thing: more housing for more people downtown, along with better public transit and an overall rationalization of city planning. Yet while the housing movements focused on social inequality in the form of immediate shelter needs, environmentalists saw the movements as short-sighted pawns of the Workers' Party with nothing to say about the environment, the city's fundamental long-term challenge. The city's most important urban planning initiative, tightly linked to its ambitious low-carbon policy, hung in the balance.

Then, in the fall of 2012, Fernando Haddad, the center-left mayoral candidate of the Workers' Party, won the mayoral election, thanks in large part to strong support from the city's housing movements. Haddad



*Figure 1: Like housing movements around the world, São Paulo's is primarily composed of, and led by, women of color.*

campaigned against Nova Luz, promising to instead prioritize low-income housing. Haddad's campaign also focused on an ambitious "Arc of the Future" redevelopment plan that would take the concept of densification and make it systemic and city-wide, building not just a mixed-use center, but also broad mixed-use corridors throughout the city, each one dotted with affordable housing. Objectively, his proposals would far surpass the prior administration's low-carbon urbanism. But he hardly spoke about the environment. And when Haddad cancelled Nova Luz in his first major act in office, in January 2013, he said nothing about climate change. This silence would

largely persist for the next four years of his government.

It bears mentioning, however, that behind the scenes, many in his government understood the ecological upside of his planning agenda, and worked to build support for it among sympathetic green policy actors—and there were some. Perhaps more interesting, the housing movement in central São Paulo that did the most to stop Nova Luz, the Front for Housing Struggle (FLM), has begun to argue that, in fact, a low-carbon São Paulo must prioritize working class and poor people's housing in the city's center. The movement subsequently developed a partnership with a British Catholic charity to train its leadership in an analytic framework that joins housing rights, emissions reductions, and resiliency to extreme weather.

Meanwhile, the new mayor, Haddad, passed a strikingly ambitious new master plan for the city that took the density ambition from a center-city pilot project model to a vision for systematically changing the logic of the city overall. The plan's core feature was to transform a network of post-industrial corridors, many of them already possessed of rail infrastructure, but now lined with abandoned industrial spaces, and turn these into dense, multi-use, mixed-income corridors. Relentless housing movement pressure forced the mayor and city council to legislate substantial affordable housing requirements into the plan of the corridors.

The mayor's defeat after a single term, in the midst of a chaotic and country-wide political crisis, limited the city's ability to put the plan into action. Nonetheless, the mayor did implement much of the basic transit element of this vision by building hundreds of kilometers of dedicated bus lanes—a change that saw immediate reductions in diesel use and greenhouse gas emissions along those lanes (Instituto de Energia e Meio Ambiente 2014).





While the larger story of São Paulo's climate policies is complex, the core tension over a center-right mayoral regime's effort to yoke low-carbon objectives to intelligent densification that would mainly benefit professionals, and the defeat of that plan by housing movements, small businesspeople, and leftwing political allies, illustrates the impossibility of treating low-carbon politics and the politics of urban inequality as separate phenomena. At the level of rhetoric, the conflict would appear to an outsider as a classic case of social vs environmental priorities.

In fact, it is more logical to view the clash as a clash of rival ecological projects: one that made only superficial commitments to addressing equity; another, that would have had equal or greater ecological benefits (the working class tend to live more densely), but that prioritized attacking inequality through immediate and forceful low-income housing provision. What is more, this was not just a question of access, but of protagonism. Housing movements never objected to the municipality's environmental claims (in fact—they did not care either way); instead, they objected to a policy whose process they believed excluded them, and whose outcome they believed would yield displacement.

More broadly, the core dilemma is that low-carbon interventions, like all forms of urban improvement, will impact who has access to the resulting housing and transit options. Under normal market conditions, where states invest to promote dynamism, and where superior amenities yield higher prices, and where housing costs rise faster than wages (and/or where unemployment is high), we should expect pro-livability, green interventions to ultimately cause social displacement, except when there are powerful countervailing housing policies that prevent markets from facilitating displacement. In this sense, traditional urban greening like building parks has the same effect as "gray ecology" interventions that increase density in ways that improve quality of life (Cohen 2017): they prompt gentrification.

In São Paulo and elsewhere, housing-oriented movements of the poor have of late shown themselves highly resistant to urban interventions that they believe would cause social displacement. To build the political coalition necessary to involve these movements, and to resist underlying market pressures, I argue, the most effective path forward will be to make the demands of housing-oriented movements paramount, treating the affordability of centrally located housing as a central tenet of any density-oriented low-carbon urban intervention.

I have spoken of housing-oriented movements because of course, different cities have movements, or organizations, fighting inequality through a variety of lenses. In São Paulo, housing movements are by far the city's most dynamic social movement. In other cases, core demands differ. Yet over and over, in cities all over the world, the results of housing's financialization has meant that housing is at the core of almost every bottom-up, major "collective consumption" struggle over the quality of urban life (Mayer 2009; Brenner, Marcuse, and Mayer 2012; Rolnik 2016). Moreover, the degree to which such movements connect struggles over short-term housing needs to over-arching urban reform programs also varies. In Brazil, the connection is tight, owing to decades of grassroots organizing around housing issues. But even there, no housing movement can achieve major urban change without political allies. As much as housing movements stand to gain from working with the center-left parties that they typically support, the evidence from São Paulo suggests that environmentalists active in middle-class circles are an additional potential ally. Each side stands to gain from working with the other. Without broad coalitions, political sociology has found repeatedly, transformative change is impossible (cf Kadivar 2013).

I now turn to another surprising instance of housing's centrality in urban climate politics—the physics and politics of water shortage.

## SÃO PAULO'S SPECTER OF WATER RATIONING

Worldwide, cities are experiencing water stress as populations expand, infrastructures fray (or have never existed), and climate change exacerbates extreme weather such as droughts. The cities of the global south are especially vulnerable. “Hard” solutions to water shortage, like developing secondary graywater infrastructure systems; building out “toilet-to-tap” water purification systems; or, probably the most extreme option, building massive, energy-sucking, poison-sludge-expelling plants to desalinate saltwater for daily use—all these depend on already-existing developed infrastructures and are punishingly expensive (Piper 2014; Fishman 2011). San Diego and Delhi just do not have the same options for managing water supplies. When São Paulo confronted a historic drought through the dry seasons of 2014 and 2015, the water crisis exemplified a basic dilemma faced by large cities throughout the world: How should government institutions fairly apportion an intrinsically scarce resource that is the very basis of life?

But first, we must note that behind this practical question of resource allocation lies a more abstract one, albeit just as important: How should thinkers and practitioners conceptualize the link between water scarcity and all the other social, political, economic, and cultural dynamics at play in urban regions? I argue here that a modified “right to the city” perspective gets us further than the more technocratic approaches exemplified by the World Bank’s theory of an “an ‘expanded water nexus...’” that emphasizes water’s centrality to food, energy, cities, and the environment more broadly (World Bank 2016: 3). The problem with the World Bank’s approach is that it tucks all questions relating to inequalities of access and power in urban life into the vague category “cities.” As I argue above, the most basic problems of urban inequality intersect directly with environmental politics—in substance, if not always in rhetoric. In contrast, the vision of a right to the city, which is vaguer and more holistic, rightly foregrounds questions of access and power. To shed light on São Paulo’s experience of rationing, I briefly outline the contours of the crisis, then show how the conjuncture of housing and land use in fact played central roles—physically, and politically—in shaping the experience of water crisis.

At the peak of the drought in 2015, before a lucky spell of heavy rains averted a total collapse of supplies, São Paulo seemed to face an almost existential crisis. The metro region of 20 million had seen water flow from its principal reservoir cut in half in the space of a year. Water shortages were causing repeated school closures; the widespread adoption of uncovered rainwater containers helped triple the city’s rate of dengue infections; water contamination due to water pressure reductions in leaky pipes had caused a spike in dysentery; and the army was war-gaming violent social disorder, even practicing the takeover of a neighborhood water infrastructure station in a wealthy, central neighborhood. Contemplating the drought’s potential to drag out further, a director of the region’s water utility warned a group of army commanders: “There will be terror. There will be no food, no electricity . . . like a scene from the end of the world. . . . But I hope that will not happen” (quoted in Rodrigues 2015).

In São Paulo, the water utility in question was a mixed public-private enterprise whose shares traded on New York and São Paulo stock exchanges and was ultimately accountable to the governor of São Paulo state. Indeed, as so often with cities, this was a case where authority ultimately lay at a higher level of government. And the one thing the center-right state governor did not want was water rationing, insisting early during the crisis: “There is not any possibility of rationing, even amidst the greatest drought in the past 84 years” (Pimentel 2014). (The governor said these even as utility employees were developing a sophisticated, community-oriented strategy to ration water.)

Instead, the state’s water utility, after keeping quiet for months while the city’s water supplies dropped, finally settled on a strategy of systematically reducing water pressure in city pipes. The utility would also regularly shut off water, press investigations revealed, but this was denied. The question is, how equitable was the strategy of simply reducing pressure? In theory, everyone faced the same constraints: less water flowed, perhaps sometimes one would have to wait for one’s water tank to refill. In practice, however, São Paulo’s



poorer residents often faced severe water shortages—up to a week with dry taps in many neighborhoods—for two simple reasons. First, poorer São Paulo residents were more likely to live on precarious hillsides; utility executives would eventually admit in a municipal hearing that water pressure was often not kept high enough to push water more than a story or two high. Second, lower-income residents were less likely to live in homes that contained their own water tanks, which could store water when it was running, to be used even when it was shut off. Two rounds of public opinion polling confirmed this pattern.

Meanwhile, it was the city's housing movements that took to the streets to protest the inequities of the situation, and to demand more substantial and fairer action from the state government. And indeed, when I visited precarious neighborhoods and housing occupations where housing organizers were mobilizing around the issue, what I heard was a broad story about the water crisis as simply one among several intersecting crises around public services, with precarious housing always at the center. As the organizer Jussara Basso put it to me in an encampment in the city's southern zone called New Palestine, "The issue with raising the housing banner is that housing is the foundation. If you don't have an address, you can't get work, you can't get your child into a daycare, you can't get into a school, you can't get public health care, you need to show proof of residence to be hired by a company. ... It's the foundation of human dignity."

In the city's eastern zone, I visited a favela by a neighborhood called São Mateus that was in the process of being regularized. Residents were building their own rainwater capture cisterns so that, when scarce rainwater fell, they could capture all of it for non-drinking needs, like watering vegetables or cleaning. Yet these residents insisted to me that I understand the water crisis as part of a long-term struggle for social services. One year, roads were the main issue; the next it was daycares; this year it was water. And here, as elsewhere, residents and movement organizers argued that government officials needed to both take more aggressive state action, and also recognize and accept the leadership of movements from below, as they developed their own strategies to cope with crisis and build more sustainable communities. As I argue in my research on this moment, a few of the activists and organizers working in these communities even developed their own theory of why rationing should be implemented, but in a way that was very different from a simple infrastructural flipping of switches:

After a meeting of the Water Yes, Profits No collective that he helped to organize, [a recently fired water utility engineer] Marzeni Pereira presented a rare, comprehensive defense of water rationing. "Better than a water rotation [rodízio] in my point of view is rationing [racionamento]," he said. "Rationing means that you guarantee supply for every person, that every person has a minimal quota. . . . It's better than a rotation, because with a rotation, if you don't have a water tank, or you have a small water tank and a big family, you go without water."

I asked Pereira about the problems with SABESP's [the city water utility] infrastructure. He said that in every home, there was a water meter that could establish how much each household received. "You can send water in trucks, and open wells and treat the water, for areas [SABESP's] network doesn't reach. You do a program to collect and use rainwater, with government support to guarantee that the water is minimally treated for uses besides drinking." Rationing, he continued, was a social and collective solution. "Rationing requires a big awareness program, the involvement of neighbors, the community. It gives a whole other vision. Similarly — " and here he paused. "We defend — it doesn't make sense for one person to have four cars, while another takes the bus. It's necessary to ration resources." Soon he was talking about solar panels and quantifying the export of water, embodied in agricultural goods, from the Amazon region and citing the theory of the Amazon's flying rivers. (Cohen 2017: 280).

In short, seen from below, rationing was a vision of social and ecological politics in which the crucial linkages weren't between diverse environmental issues, but instead between environment, inequality, and social antagonism.

Meanwhile, the actual technique for building the plastic cisterns was learned at a workshop put on by a group



Figure 2: Members of one of São Paulo's housing movements, building rainwater capture cisterns in a favela in the city's Eastern Zone.

of environmental activists called Cisterns Now! They would later travel to New Palestine to help build cisterns there. And their technique was also used in some downtown building occupations of the type referred to above in Section 3. The mutual learning exemplified a broader process during the water crisis whereby environmentalists and housing movement organizers, long mutually estranged, began to cooperate. In doing so, however, they focused exclusively on water, negotiated a new dialogue about housing, but largely left root causes of the water crisis to the side.

In fairness, the drought was likely not caused by global warming, which local scientists believe is more likely to exacerbate flash floods. But the drought was probably in part the result of deforestation in the Amazon, which reduces the amount of evaporated water that travels through “flying rivers” from above the rainforest to the country's south-east, where São Paulo and Rio de Janeiro are located (Nobre 2014). Indeed, root causes of localized environmental crisis are often complex.

And in this case, as seen in so many areas in the wake of

disaster, immediate recovery took precedence.

Moreover, even the novel alliances that formed in the wake of this crisis were precarious. Even before miraculous rains fell on São Paulo, replenishing its reservoirs, the country was convulsed by a national corruption scandal that rocked the whole political class. (That crisis is still ongoing.) The problem with crises is that they are fickle. If São Paulo's drought exposed the stubborn physical and social connections between housing, land use, and water scarcity, its aftermath showed the precarity of the social infrastructures forming to mobilize around those links. This is worrying. As more and more climate-linked extreme weather is expected to damage urban regions, grassroots civil society groups may struggle to articulate lasting, far-sighted coalitions. Certainly, as seen in São Paulo, the absence of support from government institutions deprives these groups of institutional spaces in which to plant roots. In the absence of such coalitions, already brutal social inequalities found in housing situations could simply worsen.

## CLIMATE JUSTICE IS THE RIGHT TO THE CITY

Fundamentally, the principle of climate injustice notes that those who have done the most to cause the climate crisis will suffer the least harmful effects. And yet, as occurs so often in politics (and life), the negative is easier to define than its positive opposite—in this case, climate justice. What climate justice would look like is necessarily vague. Likewise, the “right to the city” concept is vague, more broad aspiration than concrete blueprint. Each, however, turns on a concept of equity that is about more than just concrete outcomes; it is also about social and political protagonism: the disenfranchised must have a powerful voice in reshaping their social world, not just see their life expectancy crawl up decade after decade.

I have argued above that in terms of GHG emissions reduction and vulnerability to climate-linked extreme weather, there is remarkable overlap—of substance, albeit rarely rhetoric—between the climate justice program and the “right to the city” agenda. This argument pivots on the fact that emissions reductions can be achieved

through intelligent densification, an effort that necessarily implicates the core terrains of struggle of urban poor people's movements—housing, transit, land use. It turns out that extreme weather of the sort climate change portends will also intersect with basic inequalities, housing again in the forefront. Moreover, in each case, it is not merely a matter of homes being drowned, or housing thirsty people, or being allocated to one place or another in a redevelopment scheme. Housing and related matters are central concerns of social movements that are politically active and that already exert significant agency in cities—enough agency sometimes to facilitate, slow, or stop particular climate policies.

Every city is different. If I am right, advancing the New Urban Agenda and the UN's urban Sustainable

## Right to the City

### Affordable Housing Anchors Fairest and Lowest Carbon Urban Form

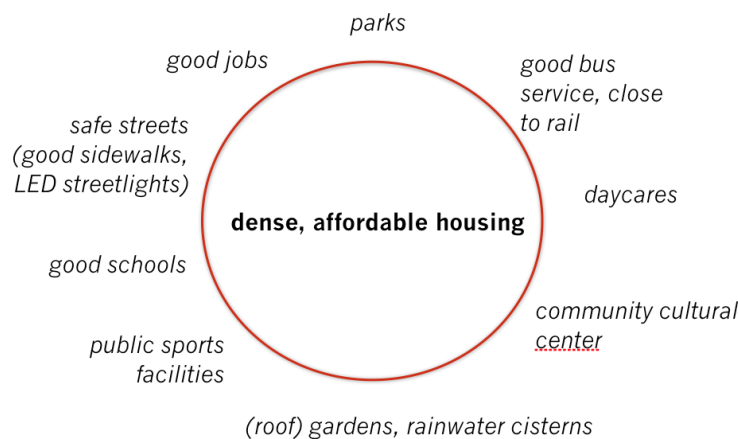


Figure 3: Visualizing the overlap of the "right to the city" agenda, affordable housing, and low-carbon urbanism

Development Goals will be easier if political groups focused on the environment and those focused on inequality and housing find a way to work together. This will look different in different places. Generally, it is reasonable to imagine that this kind of coalition-building could yield broad, lasting links between two sets of movements focused on equity, livability, and democracy. There is much to be gained if housing-oriented movements can find a way to more fully embrace the environmental agenda. Perhaps more challenging will be green policy elites' recognition that environmental issues—which have long seemed distinctive and morally aloof from short-term social concerns—must in fact be firmly anchored to the demands and lived experiences of poor and working-class movements, many of whom are organized in the form of housing-oriented movements. Deepening the social base for environmental politics, in short, requires versions of environmental policy that attack inequalities head-on. This will mean resisting many market pressures, including those powerful urban real estate markets. That cuts against the grain of many simplistic visions of urban climate policy. Overall, each side will have to take the political subjectivity of the other seriously.

Climate-linked disasters may sometimes facilitate bridge-building, but it would be unwise to expect disaster to do the work of effective politics on its own. Indeed, it may actually be harmful by making root causes seem remote. Linking social equity and climate action will take determination. What will help, I argue, is that there is



no intrinsic rivalry between social and ecological projects—only rivalries between different varieties of climate action. The power of a justice-oriented urban climate agenda to build winning coalitions is greater than it seems. The potential upshot of such a coalition—effectively tackling, at once, the two great challenges of this young century—is worth the effort.

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