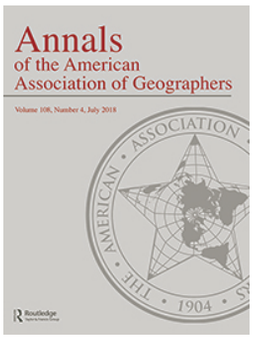

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Green and Gray: New Ideologies of Nature in Urban Sustainability Policy

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In the past two decades, urban sustainability has become a new policy common sense. This article argues that contemporary urban sustainability thought and practice is coconstituted by two distinct representational forms, which we call green urban nature and gray urban nature. Green urban nature is the return of nature to the city in its most verdant form, signified by street trees, urban gardens, and the greening of postindustrial landscapes. Gray urban nature is the concept of social, technological, urban space as already inherently sustainable, signified by dense urban cores, high-speed public transit, and energy-efficient buildings. We develop Lefebvre's ideas of the realistic and transparent illusions as the constitutive ideologies of the social production of space to offer a framework for interpreting contemporary urban sustainability thinking in these terms and concretize this argument through case studies of postindustrial greening in the Ruhr Valley, Germany; municipal sustainability planning in Vancouver, Canada; and the Masdar smart city project in Abu Dhabi. We conclude by examining the implications of green and gray urban natures for the politics of urban sustainability. *Key Words: green and gray, ideology, sustainability, urban nature.*

过去二十年来，城市可持续性已成为新的政策共识。本文主张，当代的城市可持续性的思想与实践，是由两种不同的再现形式共同组成，我们将之称为绿色城市自然与灰色城市自然。绿色城市自然，是城市回归最为翠绿形式的自然，并以行道树、城市花园和后工业地景绿化为特徵。灰色城市自然，是社会、技术与城市空间在本质上已具备可持续性之概念，并以高密度的城市核心、快速的大众运输，以及节能的建筑为特徵。我们发展列斐伏尔有关现实与洞悉错觉作为空间的社会生产之意识形态构成之概念，提供以这些概念诠释当代城市可持续性思考的架构，并通过德国鲁尔河谷的后工业地景绿化、加拿大温哥华的城市可持续性规划，以及阿布达比的马思达尔智能城市计画之案例研究，具体化上述主张。我们于结论中检视绿色与灰色城市自然对于城市可持续性政治的意涵。 *关键词： 绿与灰，意识形态，可持续性，城市自然。*

En las dos décadas anteriores, la sustentabilidad urbana se ha convertido en una política de sentido común. En este artículo se sostiene que el pensamiento y la práctica de la sustentabilidad urbana están co-constituidos por dos formas representacional distintas, que nosotros denominados naturaleza urbana verde y naturaleza urbana gris. La naturaleza urbana verde es el regreso de la naturaleza a la ciudad, el verde de verdad, representado por los árboles de calle, los jardines urbanos y el reverdecer de los paisajes posindustriales. La naturaleza urbana gris es el espacio social, tecnológico y urbano ya inherentemente sostenible, representado por los densos núcleos urbanos, el tránsito público de alta velocidad y los edificios eficientes por su diseño energético. Desarrollamos las ideas de Lefebvre sobre las ilusiones realistas y transparentes como ideologías constituyentes de la producción social del espacio, para proporcionar un marco de interpretación al modo de pensar la sustentabilidad urbana contemporánea en estos términos y para concretar este argumento a través de los estudios de caso del reverdecimiento posindustrial en el valle del Ruhr, Alemania; la planeación de la sustentabilidad municipal en Vancouver, Canadá; y el proyecto de ciudad inteligente de Masdar, en Abu Dhabi. Concluimos con el examen de las implicaciones que tienen las naturalezas verde y gris para las políticas de sustentabilidad urbana. *Palabras clave: verde y gris, ideología, sustentabilidad, naturaleza urbana.*

In the face of intensifying global environmental crisis, where do the world's hopeful eyes turn? To the city. "The environmental challenge we face," wrote Owen (2004), "at the current stage of our assault on the world's non-renewable resources, is not how to make our teeming cities more like the pristine countryside. The true challenge is how to make other settled places more like Manhattan" (112). According to

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Figure 1. A paradigmatic representation of urban sustainability as green and gray, in a rendering of Tianjin Eco-city. *Source*: Sino-Singapore Tianjin Eco-city Development and Investment. (Color figure available online.)

Stern (2015), cities "afford multiple opportunities to dramatically reduce carbon emissions while sustaining prosperous standards of living." One think tank recently declared that "climate-smart" cities could save the world $17 trillion (Global Commission on Economy and Climate 2015). Urban leadership pundit Barber (2013) made the case as follows: "Cities cannot wait for states to come to terms with climate change. . . . Political leadership by mayors and city councils . . . and voluntary intercity cooperation . . . are key in confronting both the urban consequences of climate change and the underlying causes" (131).

What does the city as a solution to the world's environmental problems look like? It is not simply a return of nature to the city but rather a distinctive pairing of "gray" high-tech environmental strategies with traditionally "green" interventions such as parks and gardens. New master-planned ecocity projects—of the sort that might soon comprise half of new urban developments in China (Shepard 2015)—promise sustainability through high technology, thanks to cutting-edge solar power, public transportation, thermal insulation, water filtration, and waste management systems. Optimistic renderings of these spaces, however, inevitably surround shiny new skyscrapers with lakes, trees, and lush parks and plantings and festoon residential buildings with verdant rooftops or hanging gardens (Figure 1). Planners in North America and Western Europe draw on the same tropes even when not planning new developments from scratch. Urban sustainability plans promote energy efficiency with Leadership in Energy and Environmental Design (LEED)-certified buildings and smart infrastructure while promising new street trees, expanded park space, and support for urban agriculture and community gardening.

This pairing of high-tech gray with natural green aesthetics is urban sustainability in its paradigmatic contemporary form. Although it appears self-evident, this representational configuration is a thing to be explained. Why should urban sustainability take the form of green and gray? Why are high-tech environmental interventions dressed up in green garb? This article offers a framework for interpreting contemporary urban sustainability thought and practice, based on a distinction between green urban nature and gray urban nature. Green urban nature is the return of nature to the city in its most verdant form, whereas gray urban nature is the concept of social, technological urban space as already inherently sustainable.

This article shares an agenda with urban political ecology (Swyngedouw 1996; Gandy 2003; Keil 2003; Heynen, Kaika, and Swyngedouw 2006; Angelo and Wachsmuth 2015), critical analyses of contemporary urban sustainability (Isenhour, McDonogh and Checker 2015; Mössner and Miller 2015; Anguelovski et al. 2016), and emerging scholarship on the urban political economy of climate change (Rice 2014; Bulkeley, Castán Broto, and Edwards 2015; Cohen 2017) in that we seek to disentangle the power-laden forms of contemporary urban sustainability practices. In contrast to these literatures, though, our project is to unpack the distinct aesthetic representations, green and gray, that urban nature takes. To do so, we develop Lefebvre's ideas of the realistic and transparent illusions as the constitutive ideologies of the production of space to argue that urban sustainability planning today is constituted by twin ideologies of green and gray urban nature. We concretize this argument through three case studies—of Germany's Ruhr Valley's green revitalization; Vancouver, Canada's, Greenest City Action Plan; and the Masdar smart city project in Abu Dhabi—and conclude by unpacking the ideological work performed by these representations in contemporary urban sustainability planning and politics.

Urban Sustainability Thinking's Common Sense

Despite its present ubiquity in policy and academic circles, the concept of urban sustainability has come into common currency only in the past two decades. In 1996, Harvey placed scare quotes around "sustainable" when he noted that "some attention has begun to be paid . . . to the question of 'sustainable' cities and more environmentally friendly forms of urban growth and change" (427). Several years later, Girardet (1999) was still explaining to a dubious public why "sustainable cities" were not a "contradiction in terms." Fast forward to the present and green space (formerly relegated to city parks on the one hand or suburban developments on the other) is now a standard feature of urban development agendas. Environmental amenities—from bike lanes to parks to farmers markets—are leveraged for local economic development agendas. Urban agriculture is increasingly treated as a productive land use to be encouraged as opposed to a marginal one to be tolerated. Dense urban development is justified on environmental grounds in addition to the familiar economic grounds, whereas technologically sophisticated smart-city schemes promise to reduce urban environmental footprints. As international efforts to reduce greenhouse gas emissions through the Kyoto and Paris processes have stalled, city leaders are increasingly being hailed as the best hope for fighting global climate change.

As urban sustainability becomes a ubiquitous discourse in policy and planning circles around the world, local governments, supported by national and international policy initiatives, are increasingly likely to adopt formal sustainability plans or climate action plans. Even Phoenix, Arizona—described by Ross (2011) as the "world's least sustainable city"—in 2016 adopted a plan to be carbon neutral by 2050. Money is following these initiatives, too: philanthropic foundations and corporations now have ambitious grant-making programs oriented toward urban sustainability, and consultants and corporations secure governmental and nongovernmental contracts and grants for urban environmental developments. Finally, there has been a remarkable proliferation in recent years of global interlocal networks oriented toward urban sustainability challenges, with the C40 Cities Climate Leadership Group, ICLEI–Local Governments for Sustainability, and the Rockefeller Foundation's 100 Resilient Cities the most prominent among a growing list of initiatives.

Contemporary urban sustainability thinking contains a number of diverse and often contradictory elements. Current plans and debates generally emphasize some combination of the following key features, which together form a kind of emerging elite "common sense" (Gramsci 1971):

- *Density*: Even as suburban modes of urban growth have continued to expand and intensify across the globe in the last twenty years (Keil 2017), this period has also seen the emergence of something close to a policy consensus around the idea that urban density has environmental value (Jenks, Burton, and Williams 1996), particularly with respect to the necessity of reducing greenhouse gas emissions. As Glaeser (2009) argued: "Thoreau was wrong. Living in the country is not the right way to care for the Earth. The best thing that we can do for the planet is build more skyscrapers."
- *Smart technology*: The "smart city" is an increasingly diffuse label for a variety of urban development, governance, and branding policies being pursued by governments, corporations, and civil society organizations around the world (Hollands 2008;

Söderström, Paasche, and Klauser 2014; Vanolo 2014). In its early incarnations, the smart city was strongly technological but only weakly sustainable. Efficiency, rapidity, and ubiquity were its key words, and the internationally recognizable smart-city projects such as Songdo, South Korea, were marketed in these terms. Over the past ten years, though, smart-city policies have increasingly been pitched on the basis of their environmental potential—a fact that urban research has begun to document (Herrschel 2013; Neirotti et al. 2014; Viitanen and Kingston 2014). Today, smart cities such as Songdo and Masdar (discussed later) are upheld as new paragons of urban sustainability.

- *Resilience*: In the face of growing environmental threats, particularly linked to global climate change, urban policymakers have begun to understand sustainability in part as the need to proactively restructure cities' physical and social landscapes to protect them against these threats. This has been accompanied by the arrival of "resilience" as a new urban policy buzzword (Ahern 2011), which is arguably beginning to supplant "sustainability" itself as the master concept for urban environmental thinking (Wilkinson 2012).
- *Livability*: Parks and green spaces have been important elements of humane urban development since the nineteenth century, and environmental justice advocates have long argued for more equitable access to these amenities. Today, entrepreneurial urban governance routinely leverages these amenities as a development strategy via "livability"—a kind of tangible expression of sustainability at the local scale (Ruth and Franklin 2014). In terms that are analogous to the earlier marketing of cities for their "creative" arts and cultural amenities (Peck 2005), today the sustainable city (along with its desirable neighborhoods) is promoted through bike lanes, walkability, farmers' markets, and other green infrastructure. The rising property values and "green gentrification" more recently associated with proximity to environmental amenities (Gould and Lewis 2016) underscore their perceived centrality to contemporary sustainable urban life.

In any combination of these features, today sustainability planning is most often a market-oriented and progrowth concept (Greenberg 2015). This is doubly true of *urban* sustainability, as it is precisely the productive power of cities that is supposed to meet global environmental challenges. Even as market- and growth-oriented sustainability planning has become dominant, however, counterproposals led by community groups, nonprofits, and social movements draw on similar discourses of sustainability as they aim to decommodify urban environments and offer alternative visions of sustainable urban life (Agyeman 2005; Heynen, Kaika, and Swyngedouw 2006; Greenberg 2014).

Scholars have likewise begun to critique mainstream urban sustainability thinking and policy along several lines. First, researchers have repeatedly identified the underlying conceptual muddiness of urban sustainability policy, from Campbell's (1996, 296) early characterization of its "vague idealism" to Gunder's (2006) depiction of sustainability as urban planning's key empty signifier. Similar lines of critique have been developed with respect to "resilience," the increasingly influential social–ecological policy discourse that conceives urban sustainability goals mostly in terms of risk management, adaptability, and disaster recovery (Evans 2011; Wilkinson 2012; McPhearson 2014; Meerow and Newell 2016). Human geographers and planners have argued that, for all its new discursive trappings, resilience thinking is in many respects an intensification of existing, politically conservative strands of sustainability discourse (MacKinnon and Derickson 2013; White and O'Hare 2014; Fainstein 2015).

Second, scholars have documented the equity deficits of actually existing urban sustainability planning. The negative impacts of sustainability planning tend to fall disproportionately on the poor and marginalized, whereas benefits accrue to the wealthy and powerful (Caprotti 2014; Anguelovski et al. 2016). Following While, Jonas, and Gibbs's (2004) introduction of the "greening of the growth machine," researchers have explored how urban development actors mobilize the environment as a means of capital accumulation (Jonas and While 2007; Evans and Karvonen 2014). Similarly, the growing literature on green gentrification illustrates how environmental amenities meant to improve neighborhoods can be channeled into regressive neighborhood change projects (Checker 2011; Gould and Lewis 2016).

A final emerging line of critique of contemporary urban sustainability discourse concerns its spatial limits and city-centrism (Angelo and Wachsmuth 2015). Prior to the 1990s, cities were almost always subject to environmental thought and political action with respect to limiting their negative impacts on the surrounding countryside, where nature and the

environment were understood to "really" be located. Today, sustainability analysis and policy tends to focus on individual cities and city-regions to the exclusion of their wider contexts (Mössner and Miller 2015). Theoretically, this narrowness forecloses more holistic conceptions of urban nature and sustainability that seek to transcend city boundaries—for example, through the implosion–explosion dialectic of planetary urbanization (Brenner and Schmid 2015; Arboleda 2016)—and also corresponds to a reductive understanding of the urban as "the city" (Wachsmuth 2014; Millington 2016; Angelo 2017). Practically, city-centric urban environmental interventions can undermine the very sustainability goals they are driving. When planned and evaluated within narrow spatial parameters, the sustainabilities they achieve within these boundaries are frequently predicated on unsustainabilities elsewhere (Ala-Mantilla, Heinonen, and Junnila 2014; Wachsmuth, Cohen, and Angelo 2016).

Green Urban Nature and Gray Urban Nature

To these important critical appraisals we suggest a new one: the aesthetic dimensions of contemporary urban sustainability thinking and the commonsense ideology of nature that underlies them. For all of its diversity, we argue that urban sustainability policy is consistently characterized by two distinct strategies for achieving the sustainable city, corresponding to two very different aesthetic representations of urban nature.

We call these representations *green urban nature* and *gray urban nature*. Green urban nature is the return of nature to the city in its most verdant form. It is signified by street trees and urban gardens, local food and farmers' markets, vertical farming, and greened postindustrial landscapes. In policy it is mobilized in a range of different urban sustainability strategies that leverage self-evidently natural nature, from green walls, bioswales, and urban agriculture up to large-scale landscaping initiatives such as soft coastlines and new parks. Gray urban nature, by contrast, is the concept of social, technological urban space as already inherently sustainable. It is signified by dense urban cores, high-speed public transit, and energy-efficient buildings. In policy terms we see it deployed in strategies that leverage that inherent sustainability of urban space through density and efficiency, ranging from transit and walkability promotion schemes to new smart city construction. We argue that these two sets of phenomenal forms offer two distinct concepts of urban sustainability with corresponding associative pairs: simple–complex, surface–depth, and everyday–expert.

We describe these two concepts of urban nature as ideologies: partial representations of reality tied to hegemonic social practices and power relations. Following Lefebvre ([1966] 1982, [1974] 1991), we particularly emphasize the dual *representational* and *historical* character of ideology. First, ideologies are representations in the sense that they express intuitions and common sense about social reality, given that society is too complex and multifaceted to be apprehended directly (Goonewardena 2005; Wachsmuth 2014). If common sense emphasizes some aspects of this complexity more than others, it does so in a context of unequal power relations—reproducing those relations, contesting them, or some mixture of the two. The concept of ideology can be an important lens for identifying and challenging injustices and inequalities—denaturalizing social relations to reveal that things could be otherwise.

Second, ideologies are always tied to particular historical and geographical circumstances. Although some power-laden social representations (e.g., of class relations or individual liberty) correspond to durable features of capitalist society and have therefore been present throughout its modern history, ideologies can also be embedded in more specific historical–geographical contexts. The neoliberal resurgence of faith in the market to solve social problems is just one of a number of possible examples of historically specific ideologies that are widespread, familiar, and influential.

Green urban nature and gray urban nature are ideologies in this dual representational and historical sense. They express contrasting common senses about urban environments, and the way they do so reflects contemporary power relations—about whose lifestyles and bodies count as environmental concerns and what kinds of environmental interventions they merit. Although we propose a categorical distinction that might look "just" aesthetic, we do so because the differences in aesthetics structure and reflect the strategies, priorities, and assumptions that follow. In other words, the aesthetic differences are important because they do ideological work.

We further argue that the ideological work of green and gray is interconnected: The two are

materially and aesthetically opposed but imaginatively mutually supportive. To interpret their relationship, we draw on Lefebvre's exploration of the ideologies of modern social space. Lefebvre ([1974] 1991) posited that a new form of social space emerged in the West in the early twentieth century, displacing a tradition stretching back through the Renaissance to Ancient Greece. This new homogenized, fragmented, hierarchized "abstract space" is the characteristic space of capitalist modernity but, according to Lefebvre ([1974] 1991), its status as a social product is concealed by "a double illusion, each side of which refers back to the other, reinforces the other, and hides behind the other" (27). He termed these double illusions the "illusion of transparency" and the "realistic illusion."

The illusion of transparency is the illusion of transcendentalism and idealism, which sees reality as encrypted but thought as pure and unimpeded: "Here space appears as luminous, as intelligible, as giving action free rein" (Lefebvre [1974] 1991, 27). The illusion of transparency privileges the ability of thought, language, and design to transform society, by suggesting that social and mental space exist in a direct correspondence with each other. It is therefore a technocratic imaginary that informs planning and representations of space. To a planner or a designer, reality is a complicated ("encrypted") system, but thought can decrypt it, to intervene in it and solve its problems.

The realistic illusion—"the illusion of substantiality, naturalness and spatial opacity" (Lefebvre [1974] 1991, 30)—is the view of space that takes objects at face value and hence suggests that social space is directly derived from physical space. It is the illusion of natural simplicity, and Lefebvre equated it with a naturalistic materialism, according to which the symbolic meaning of objects lies within the objects themselves. In contrast to the illusion of transparency, therefore, where language and thought are imbued with interpretive and social power, according to the realistic illusion they simply convey reality itself. If the illusion of transparency is a technocratic ideology, the realistic illusion is the ideology of spatial practice and everyday life. It corresponds to the affective dimensions of social space—to the phenomenological experiences through which the reality of "things" is confirmed.

These two illusions, for all that Lefebvre presented them as opposites, are not in competition with each other. Instead, they are mutually sustaining, masking each other's gaps and shoring up each other's weaknesses. The mental space of the illusion of transparency and the physical space of the realistic illusion together draw our attention away from the social production of space Lefebvre was seeking to uncover. Because the social production of space is a historical process, an implication of this analysis is that different sociohistorical contexts will host different concrete configurations of the transparent and realistic illusions—masking social complexity through an apparent opposition of the physical and the mental, the evident and the obscure in each case. It is in precisely these terms that we understand green urban nature and gray urban nature. Green and gray are the twin ideological representations of contemporary urban sustainability that oppose each other and prop each other up. The realistic illusion of green urban nature—the appearance of simplicity or the materialist distortion of the socionatural—is the older and the more familiar of the two. Green urban nature, however, now travels hand-in-hand with the newer transparent illusion of gray urban nature—an idealist distortion of the socionatural through the appearance of complexity.

The Realistic Illusion of Green Urban Nature

According to the realistic illusion of green urban nature, if it looks green it is green. The self-evidently natural is assumed to in fact be natural and, moreover, to be sustainable. The conceptual breakthrough of green urban nature is that society and nature are linked in material terms and that cities can be made more sustainable by bringing nature into them. The realistic illusion thus intertwines two related premises. The first is that nature is a real material thing to be discovered outside the city and imported into it—as Lefebvre ([1974] 1991) described it, a "hard dense reality delivered direct from mother nature" (30). Once it arrives in the city, green urban nature is characteristically low-tech, small-scale, and harmonious, which places it in contrast with the rest of the city.

The straightforward appearance of nature offered by green walls, bioswales, urban agriculture, and the like causes us to overlook the technology and planning required to implement them, as the "rational is thus

naturalized" (Lefebvre [1974] 1991, 30). Even where green urban nature interventions in fact rest on complex and large-scale engineering feats, they are represented as simple and direct. This ideology made it possible for New Yorkers to accept Olmsted and Vaux's Central Park as an escape from the city in the nineteenth century (Rosenzweig and Blackmar 1992) and led the designers of New York City's High Line to plant wildflowers as replacements for the "real" wild growth that had accumulated on the rail line during the decades it was not in use (Loughran 2016)—despite the long history and present diversity of meanings, both positive and negative, of nature (Fitzsimmons 1989; Selin 2013; Nash 2014).

The second premise of the realistic illusion of green urban nature is that nature is per se sustainable and that the things that look like nature must be more sustainable than the things that do not. Green urban nature has the appearance of unspoiled "first nature": Plants and vegetation are obviously sustainable because they are obviously synonymous with first nature itself. It is for this reason, we argue, that urban sustainability plans are literally green—that their imagery emphasizes trees, parks, and waterways. Even planning that relies predominantly on technological means of achieving sustainability tends to include straightforwardly green components to make the case for its ecological benefits. Green walls, gardens, and eco-roofs might not be central to the actual ecological impact of these projects (more likely determined by water and energy use, waste disposal systems, etc.), but they tend to feature heavily in promotional materials. The aesthetics of green urban nature are used to communicate sustainability to lay audiences.

The underlying conceptual foundation of green urban nature—that nature is "real" in a nonsocial or even presocial sense and thereby exists as a resource to improve the urban social—has been critiqued from both cultural (Williams 1973) and political–economic (Smith [1984] 2010) perspectives. It was also the target of much of the first generation of urban political ecology scholarship (Swyngedouw 1996; Heynen, Kaika, and Swyngedouw 2006), which introduced the socionature concept to dissolve society–nature binaries in urban contexts. Nevertheless, as this discussion of the realistic illusion illustrates, extrasocial representations of urban nature persist. The realistic illusion of green urban nature is an ideology of spatial practice; whether or not planners truly believe that greener things are actually more sustainable, they are reproducing this ideology when they cover their energy-efficient smart buildings in decorative plants.

The Transparent Illusion of Gray Urban Nature

According to the transparent illusion of gray urban nature, sustainability is a thing lurking beneath the surface of the city, to be uncovered through science, technology, and expertise. The conceptual breakthrough of gray urban nature is that the environment is not separable from the social production of urban space but exists to be revealed, shaped, or enhanced within cities as they actually are. Although a version of this analysis is common among critical geographers (Swyngedouw 1996; Braun and Castree 2005; Heynen, Kaika, and Swyngedouw 2006) who made their critique of green urban nature to render gray urban nature visible, its most eloquent public champions are economistic urban environmentalists such as Glaeser (2011), who have persuasively made the case that, in sustainability terms, gray is really greener than green.

The ideology of gray urban nature rests on two premises. The first is that reality is complex and requires decoding to be properly understood but that knowledge is transparent and able to accomplish this decoding. According to the illusion of transparency, planners and engineers are the experts with the knowledge and skills required to uncover the city's environmental content. In this sense, even though it is primarily concerned with the management of natural resources (above all energy, water, and carbon dioxide), gray urban nature rejects the romanticism of the realistic illusion's green "first nature" (Marx and Engels [1846] 1970; Schmidt [1962] 2014). Instead, it emphasizes a technologically mediated "second nature." If the realistic illusion of green urban nature is the ideology of spatial practice and everyday life, we might understand the transparent illusion as the technocratic imagination at work in planning and representations of space.

The second premise of gray urban nature is that sustainability is not a property of nature per se but rather a characteristic that can be discovered or engineered in complex social systems. The current emphasis in sustainability-oriented urban planning on transit development and densification reflects

this principle. The rhetorical thrust of many of the most influential gray urban nature arguments (including Owen's [2009] *Green Metropolis* and Glaeser's [2011] *Triumph of the City*) has been a willful counterintuitiveness—a celebration of the triumph of scientific and evidence-based reasoning in establishing the importance of gray urban density over merely aesthetic appeals to green nature.These arguments treat sustainability problems as complicated ones to which we must apply sophisticated technology and expertise. The transparent illusion of gray urban nature claims to have pierced the surface of complex urban reality and found the sustainability underneath. Gray urban nature aesthetics correspondingly look like electric car chargers, high-tech smart-city infrastructure, and green building design.

The transparent illusion implies a certain idealistic or even utopian belief in the promise of "smart" technology to solve sustainability problems by outthinking and outplanning bad outcomes and continuing to support economic growth. Indeed, the critique of gray urban nature has come most forcefully from skeptical appraisals of the smart city. As scholars such as Greenfield (2013), Holland (2008), and Söderström, Paasche, and Klauser (2014) have demonstrated, smart city proponents' claims to a comprehensive technocratic rationality have always been highly overstated. The knowledges underlying the smart city in general, and gray smart city sustainability strategies in particular, are always fragmented, partial, and distorted. They model resource flows with sophistication but struggle to incorporate the cultural or political flows that might prove more consequential for how resources get deployed and appropriated. Gray urban nature is an ideological representation of sustainability that communicates it through the promise of high-tech engineering.

In sum, the imagery, discourse, and designs of contemporary urban sustainability planning are characterized by these two distinct ideologies. The realistic and transparent illusions of urban nature oppose each other and prop each other up to create the image of a sustainable city. Even the most technology-centric smart city plan is likely to deploy green imagery to emphasize its sustainability objectives, and images of urban agriculture likewise often emphasize its embeddedness within the gray city.

Green and Gray in Practice

We now turn to three case studies to illustrate green and gray representations of urban nature in different historical and geographical contexts and show how the two have developed, along with urban sustainability as a concept, over time. A snapshot of brownfield redevelopment in Germany's Ruhr Valley in the 1990s highlights the historical emergence of green and gray urban natures. Vancouver's Greenest City 2020 Action Plan provides a paradigmatic example of how green and gray represent two distinct planning and policy agendas that are nevertheless logically bundled under the rubric of sustainability. Finally, Abu Dhabi's Masdar City shows an important concrete configuration of green and gray urban natures (what we call gray substrate, green surface) in the context of spectacular (and speculative) urban development. The analysis is based on an examination of public planning documents, promotional materials, and media discussions at all three sites, supplemented by fieldwork and interviews with sustainability policy actors in Vancouver and the Ruhr.

Green and Gray Emergent: The Ruhr Region

Germany's Ruhr region is perhaps the largest early example of green and gray as twin representational forms of urban environmentalism. Defined by coal mining and steel production since the mid-nineteenth century, after the collapse of the coal and steel economy at the end of the 1960s, widespread consensus emerged that, to attract new residents and industry, the region required comprehensive structural change, rehabilitation of its denuded and polluted landscape, and a new reputation as a clean and pleasant place to live. In stark contrast to nineteenth- and twentieth-century understandings of industrial technologies and the industrial city as contributors to pollution, Ruhr planners and policymakers came to view postindustrial technology and the postindustrial city as environmental solutions rather than problems in the wake of industrial decline (Angelo 2015).

In the nineteenth and twentieth centuries, in the Ruhr as throughout Western Europe and North America, industrial cities were seen as nonnatural or even antinatural spaces, and planners prescribed green nature as a treatment for industrial pollution and other urban problems. Industrial barons and social reformers provided industrial workers garden

city housing and green public recreation areas for recuperation on weekends and at the day's end. These urban green spaces were not designed to be sustainable in any modern sense of the term but attempts to make cities more livable by bringing nature back in. In this regard, green urban nature has been a consistent presence in urban design and thought throughout the last 150 years.

Yet as the industrial economy declined, understandings of cities as socionatural systems with inherently environmental properties grew. By the 1990s, planners and policymakers began to view postindustrial cities as spaces for greening rather than pollution. In the Ruhr, the vision for restoring "one of the most degraded landscapes in Europe" (LaBelle 2001, 222) was IBA Emscher Park, a 200-km region-wide park dotted with museums, heritage sites, and monuments connected by hundreds of kilometers of biking and walking trails. Envisioned and constructed between 1989 and 1999, its cornerstone was the "renaturalization" of the Emscher River, which runs through the heart of the project and the region. Considered biologically dead when the project began, it had deteriorated into a "poorly functioning, stinking sewer" for industry (Pehnt [1999], quoted in Hemmings and Kagel 2010, 247). "Renaturalizing" the Emscher involved spending 4.4 billion Euros to create 400 km of underground wastewater pipes and an artificial winding path for the water above—because the original riverbed was completely destroyed—along with highly engineered "lakes," floodplains, and catchment areas to manage its ebb and flow (Danish Architecture Center 2017).

IBA Emscher Park captures a transition moment between the end of an era when the city–nature relationship was nearly universally understood to be an antagonistic one and the present era of urban sustainability thinking. In the 1990s, although neither the language of urban sustainability nor the representational forms of green and gray had fully crystallized, both were visibly in formation. Two decades before cities were being retrofitted for climate change, transforming deindustrialized cities into sites for new residential, commercial, and leisure uses required remediating industrial infrastructure, brownfields, and waterways and reenvisioning them as ecological spaces. IBA Emscher Park's urban environmental consciousness was thus a precursor to seeing cities as sustainability solutions in two ways.

First, the growing thinkability of urban sustainability corresponded with the emergence of a new representational form, that of gray urban nature. In the postindustrial era, technology became a fix for environmental problems instead of a cause of them. This was a first step toward "gray" as a representational form coming to connote positive ecological outcomes and toward the idea that sustainability could be engineered through technology: the transparent illusion of gray urban nature. For most of the twentieth century, in the Ruhr as throughout Europe and North America, gray stood for polluting technologies of coal extraction and the steel industry—and the destruction of nature—while the region itself was antithetical to nature in the public imagination. Industrial pollution made local foliage "gray, not green" in the 1920s (Rossmann 2009, 149); in the 1960s, poor air quality turned laundry gray within minutes of being hung on the line (Der Spiegel 1961). IBA Emscher Park gave the Ruhr a new green identity through gray technology, arguing that a green urban-industrial region was neither impossible nor an oxymoron.

Although there are certain aesthetic continuities between modernist twentieth-century urban infrastructure projects and contemporary gray urban nature projects, those continuities should not be allowed to overshadow a vital difference. Technological solutions to urban problems in the twentieth century were seen as just that: technological. They were human technologies solving human problems or demonstrating mastery over nature. By contrast, for contemporary, high-tech sustainability practitioners who see their charge as designing with nature rather than dominating it, solar grids, green building codes, and the like are not technologies antithetical to nature but hybrids of the technological and the ecological.

Second, IBA projects also put these two distinct representational dimensions of environmentalism—the realistic and transparent illusions of green and gray urban nature—in relationship. Neither the Emscher River renaturalization nor IBA Emscher Park were understood as efforts to return to first nature after a century of destruction by industry. Instead, IBA conceived a second "industrial-nature" (*Industrienatur*), which it deliberately showcased at ecological and cultural heritage sites. The IBA-produced Landscape Park Duisburg Nord, for example, turned green and gray into a design principle. Duisburg Nord was created on the site of a former steel mill. Visitors now stroll through gardens in its remains, rappel off its outer walls, and scuba dive in its gas tanks (Figure 2).

Figure 2. Landschaftspark Duisburg Nord's Industrienatur, combining green and gray. *Source*: Carschten, licensed under CC ASA 3.0. (Color figure available online.)

Although flowers and plantings invite visitors to enjoy the realistic illusion of green urban nature, the park's designer intended to "[debunk] the fantasy of taking refuge in pristine nature" by designing a park that was "unmistakably man-made" (Lubow 2004, 49). Throughout Emscher Park, at sites where *Industrienatur* might look "natural," IBA takes special care to denature that representation by revealing how the landscape is a product of the region's industrial history or technology's contributions to sustainability. Along the renaturalized Emscher, for instance, signage, promotional materials, and commissioned public art projects all showcase the gray urban nature that makes the natural-looking river possible (Huning and Frank 2011).

Sustainability as (Green and Gray) Livability: Vancouver, BC

The Ruhr Valley shows green and gray representations of urban sustainability before the latter stabilized into a recognizable paradigm and in a historical moment in which urban environmental concerns centered on industrial remediation rather than climate change. To view these representations in a contemporary urban context, we turn now to Vancouver, which for the last decade has been the site of an ambitious municipal sustainability plan—the Greenest City 2020 Action Plan (GCAP). Vancouver's plan demonstrates how green and gray can be logically paired as a single policy bundle in a context of urban retrofitting and intensification. Importantly, although GCAP contains robust density- and technology-focused "gray" interventions aimed at reducing greenhouse gas emissions alongside robust livability-focused "green" interventions aimed at creating a pleasant urban environment, there is very little substantive connection between the two. They simply coexist as the two self-evident pillars of urban sustainability. Although the empirical details are unique to Vancouver, the bundling of green and gray policies forms a globally recognizable set of "best practices," the codevelopment of which can also be observed in other self-consciously green, affluent, post-industrial cities such as San Francisco and New York.

Vancouver is the third largest city in Canada and is generally considered one of the most livable cities on the planet (e.g., Economist Intelligence Unit 2017). An important part of this reputation is the city's relationship with the natural environment; Vancouver occupies a piece of temperate rainforest tucked between the Pacific Ocean coast and the North Shore mountain range and has a long, self-conscious history of environmentalism. The city's official environmental mythology reinforces this idea:

> Decades ago, Vancouver residents decided that the way of the past was not for us. We chose a different path. . . . We are the birthplace of Greenpeace, the home of David Suzuki [Canada's most influential environmentalist], and one of the first cities in the world to recognize the significance of climate change. (City of Vancouver 2015, 4)

Building on this legacy, in the last decade, Vancouver's city government launched an ambitious urban sustainability agenda. In 2011, the city released the GCAP.

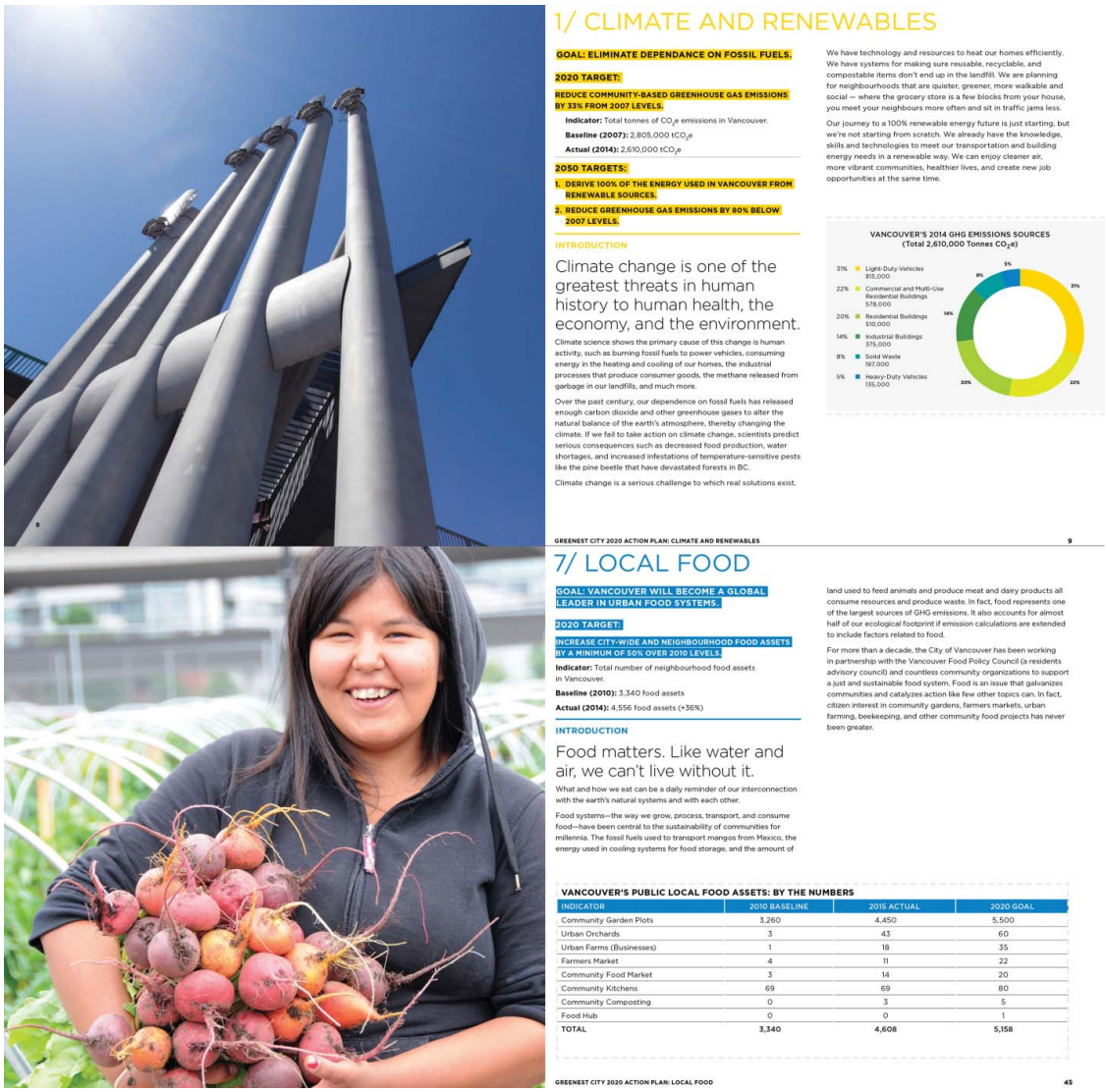

Figure 3. Green and gray representations of urban nature in Greenest City 2020 Action Plan. *Source*: City of Vancouver (2015, 8–9, 44–45). (Color figure available online.)

The plan has three high-level goals—zero carbon, zero waste, and healthy ecosystems—that are addressed through a combination of livability-focused green interventions and carbon-and-waste-focused gray ones.

The centerpiece of GCAP's carbon reduction plan is a building efficiency and retrofitting scheme—a characteristically technology-driven gray urban nature effort. All new buildings in the city will need to be carbon neutral by 2030, and the entire building stock of the city is planned to produce 20 percent fewer emissions by 2020. The plan also includes a number of strategies to decrease emissions from private car usage. The aspects of GCAP that use green urban nature to advance urban sustainability are focused on improving quality of life in the city. Hundreds of thousands of new trees are being planted, standards for local green space access have been improved, and there has been significant investment in expanding access to local "food assets" such as community gardens and farmers markets.

In some respects the plan reads as two separate initiatives, one focused on large-scale engineering efforts to reduce waste and greenhouse gas emissions and one focused on improving residents' access to environmental amenities. Both initiatives are ambitious and embody cutting-edge planning ideas, but very little about either of them would change if the other were removed from the plan. The only thing that unites them is that they are both self-evidently sustainable. In this regard, the aesthetics of the document are revealing (Figure 3). Chapters presenting gray

sustainability goals (e.g., "Climate and Renewables," "Green Buildings," "Green Transportation") are headed with photographs of dazzling technological infrastructure, with few humans to be found. The solutions to sustainability challenges are presented here with the illusion of transparency's appeal to complexity. Chapters presenting "green" sustainability (e.g., "Access to Nature," "Clean Air," "Local Food"), by contrast, are headed with photographs of city residents engaged in small-scale acts of green living—the natural simplicity of the realistic illusion.

For all of its successes so far, GCAP also illustrates some characteristic tensions with respect to the equity and ecological impacts of contemporary urban sustainability policy: the political and spatial narrowness of green and gray urban natures. The first tension is the region's deepening crisis of housing affordability. Vancouver, in addition to being one of the world's most livable cities, holds the dubious distinction of being one of the most expensive cities in the world, and the skyrocketing increase in cost of living over the last decade has led to escalating social tensions (Wachsmuth 2018). GCAP is arguably exacerbating the housing crisis in the city. On the demand side, the visible green markers of sustainability—parks, bike trails, farmers' markets, street trees, and the like—are an increasingly desirable amenity for urban residents, so housing in green areas of the city tends to be expensive. On the supply side, many cutting-edge technological forms of urban sustainability policy—the gray urban nature energy-efficiency schemes, low-carbon building techniques, and LEED certifications—increase the cost of housing production. Even mandates to build more density can be costly when combined with strict environmental building codes, because they shift the development economics in favor of condominiums instead of rental housing on the land that is zoned for multifamily. One Vancouver senior housing staffer put the issue as follows in an interview:

> The issues with LEED certified building just drove up the cost of that [development] and because we build housing and the rents are affordable rents, all that means is that fewer units can get built if the capital cost of the individual units go up. In the private market . . . all those costs will simply be passed onto the purchaser, because you're able to do it in a market like Vancouver.

The second tension is the limited territorial scope of the action plan. GCAP is a sustainability plan for the City of Vancouver, which is a municipality accounting for just a quarter of the metropolitan region's population. The plan acknowledges that sustainability issues cross municipal boundaries, but there has been no actual attempt to act on that acknowledgment in the context of the plan (e.g., through engagement with the regional government—Metro Vancouver Regional District—of which it is the most important local member, or through the provincial government, which has encompassing authority over municipal affairs). So even as the City of Vancouver attempts to build more dense rental housing near mass transit stations, the neighboring suburb of Burnaby is tearing down rental apartments around its transit stations to build higher ecological footprint condominiums—a dynamic that Mössner and Miller (2015) described as "sustainability in one place."

In summary, GCAP demonstrates a municipal aspiration to both (green) livability and a (gray) low ecological footprint, and despite there being little substantive connection between the two visions of urban sustainability, Vancouver's planning interweaves them. Furthermore, even as green and gray urban natures represent two complementary strategies for sustainable urbanism, in Vancouver's affluent, postindustrial context, both of these strategies have intensified preexisting socioeconomic tensions. The same configuration of discrete-yet-complementary green and gray strategies (along with similar tensions related to social equity and spatial scale) is visible in New York's PlaNYC and OneNYC sustainability plans and in San Francisco's Plan Bay Area 2040 and represents in our analysis a common postindustrial pattern of urban sustainability thinking and practice.

Gray Substrate, Green Surface: Abu Dhabi's Masdar City

The Vancouver case shows green and gray ideologies of urban nature bundled together in a simple side-by-side configuration. Another important configuration is gray substrate, green surface, where a veneer of green urban nature helps communicate the ecological content of gray sustainability interventions. We now explore the case of Masdar City, one of the world's most ambitious urban sustainability schemes. Although Masdar is an archetypally gray sustainability project, leveraging smart-city technology toward environmental ends, it relies heavily on the aesthetics of green urban nature to make this environmentalism legible, with the affective dimensions of the latter and the techno-rational dimensions of the former mutually supporting each other.

Initiated in 2006 by the Abu Dhabi government, Masdar City was an environmental, high-tech smart city, created with the dual ambitions of being the world's first zero-carbon city and a means of reorienting the national economy away from fossil fuels. Although the project has so far failed to reach its ambitious environmental goals (Goldenberg 2016), Masdar City arguably remains the world's leader in the emerging policy terrain of sustainable smart cities. Masdar City is substantively a gray urban nature project. Its major infrastructural systems all use renewable and alternative energy technologies, including energy (solar), transit (electric), and water and waste treatment systems. The orientation and surfaces of the buildings and the narrow, pedestrian-friendly streets were designed to counter energy-intensive forms of contemporary urbanism, creating cooler interiors and exteriors to reduce dependence on cars and air conditioning. The city itself has been leveraged for larger state development goals. From the beginning, the project was meant to help transform Abu Dhabi's economy for a post-oil future by providing a new national template for sustainable economic growth. So, in addition to using solar and renewables in the city's design, Abu Dhabi planned for the city to house a "community of academics, researchers, start-up companies and financiers—all focused on developing renewable energy and sustainability technologies" (Nader 2009, 3952).

Yet Masdar City's attempts to achieve sustainability through gray forms of design, building materials, and transportation and energy systems have, since the project's inception, been promoted through signifiers of green urban nature. In renderings, promotional photographs, and the city's master plan, residential areas, schools, and the visitor center are surrounded by plants, trees, and green lawns (Figure 4). Photographs

Figure 4. Masdar City's green veneer of plantings "remind" us that gray interventions are sustainable. It is the gray umbrellas in this plaza that provide shade during the day and fold up at night to let the cool air in. *Source*: LAVA. (Color figure available online.)

of many of the development's office and research buildings are foregrounded with foliage, signaling the LEED certifications of the buildings and the alternative energy research occurring inside (Masdar 2015). The city's plans also include "biodiversity protection areas" and green corridors that are to provide habitat for native species and serve as recreational areas (Masdar 2015, 56). In each of these designs and representations, the green veneer of palm trees and gently waving grasses "remind" us in everyday, phenomenal terms that Masdar City is designed to promote more sustainable ways of living and working.

Masdar City might be utopian, but it is not naïve. The city's engineers do not offer foliage and fox habitats as the actual means through which Masdar City will meet its low-carbon goals. Instead, plans use these signifiers of apparently straightforward reality (green urban nature) to communicate a complex reality (gray urban nature) in intuitive terms. The green veneer is the realistic illusion; the gray substance is the illusion of transparency. Although the project's sustainability goals will really be achieved (to the extent they are achieved at all) through often invisible, highly engineered materials and systems, Masdar City's superficial greenness represents the city as sustainable.

This pairing of green surface and gray substrate is also readily apparent in the way third parties have interpreted and digested Masdar City's sustainability plans. On the green side, an article in the United Arab Emirates' leading English-language newspaper called "Sowing the Seeds of Gardening-Based Change at Masdar City" quotes Masdar City's project directors describing the intention of the city's landscaping to "imbue a new mindset that promotes the concept of living in harmony with our culture and environment" (Hunt 2015). The designers are working with local nurseries to supply Masdar City with native plants large enough to create a "landscape regime" that promotes the "experience of engaging with nature." On the gray side, a story in *Renewable Energy Focus* prepared on Masdar City for the 2010 World Future Energy Summit describes Masdar City's sustainability entirely in terms of a "brave new world" of futuristic, high-tech research, that requires solar investments, innovations in electricity and engineering technology, wind power, and biotech (Hopwood 2010). For this professional audience, the environment to be saved and promoted is a complex technological system in which industry leaders "[forge] our energy future by developing a renewable fuel supply [and] developing and commercializing . . . low-carbon energy sources" (Hopwood 2010, 23). The green urban nature perspective offers sustainability on the surface of reality, whereas the gray urban nature perspective looks for it underneath.

Most tellingly, an Al Jazeera video segment (Earthrise 2011) about Masdar City's master plan presents the city's environmental ambitions as a mixture of immediate and straightforward green urban nature and hidden and complex gray urban nature. The video begins by noting that the city is free of cars and skyscrapers. Then, after a quick close-up of a flowering plant, the city's director Alan Frost describes how its orientation, building design, and narrow streets—all designs once common in traditional Arab cities—keep Masdar about 15°C cooler than downtown Abu Dhabi. Standing in a shady plaza planted with trees and grasses, Frost calls the breezes that the streets are designed to draw "green fingers," while the narrator says they are "going back to traditional ways of doing things." Whether these "traditional ways" are a sincere attempt by the British planning firm in charge of the development to leverage local knowledge or simply a branding exercise, tradition and simplicity are key signifiers of green urban nature. The plants and "green fingers" conjure an image of nature as a straightforward and simple reality and an understanding of sustainable living as low-tech, back-to-nature—the realistic illusion.

The film goes on to add, though, that "some new developments will be based on new ways of doing things." Now the film moves from green to gray urban nature, as it travels from the city's core living and working areas to a solar plant on a dry, hot desert plain. In this portion of the film, technology, ecology, and reality are all presented as too complex for direct comprehension, and instead in need of decoding. The narrator describes the solar "beam-down project" as a "crazy-looking contraption." Unlike the close-ups of residential areas, which prominently feature plants and grasses, this gray urban nature scene is shot wide and low, to emphasize the gadget's (and the city's) technological and otherworldly quality. Once the film leaves the beam-down project, electronic music, industrial sounds, and hard reflective surfaces accompany Frost's discussion of his hopes for the city. The picture of sustainability presented by these scenes and technologies of gray urban nature is

one that is strange, alien, and in need of interpretation by experts—the transparent illusion.

Conclusions: The Ideological Work of Urban Sustainability

Sustainability is frequently criticized for being an amorphous concept or an empty signifier. Despite the truth in this, we have argued that in the domain of urban policy sustainability is nevertheless consistently characterized by two distinct ideas: green urban nature and gray urban nature. These are pervasive but unacknowledged commonsensical frames for understanding what counts as sustainable and what should be prioritized in urban-environmental policy. The purpose of this article has been to offer a framework for decoding contemporary urban sustainability thinking in these terms. To do so, we have drawn on Lefebvre's distinction between the realistic illusion and the illusion of transparency and have used case studies of Germany's Ruhr Valley; Vancouver, Canada; and Masdar City, Abu Dhabi to showcase these two representations in practice. We now conclude by returning to the question of the ideological work these representations perform.

To say that green urban nature and gray urban nature are ideologies is to say that they are commonsensical simplifications of social reality that are not neutral to power. Their animating ideological tension is that the aesthetic simplicity of green urban nature encourages it to be taken at face value as inherently sustainable (the realistic illusion), whereas the aesthetic complexity of gray urban nature leads it to be considered a problem for technological optimization (the illusion of transparency). This tension has two immediate implications. First, it threatens to render green urban nature the presumptive realm of popular participation in urban environmental politics and gray urban nature the presumptive realm of technocratic expertise (see, e.g., Finewood 2016). Consider competing efforts to envision future modes of sustainable living in response to the threat of climate change. On one side, we have a gray vision of a high-tech future of geoengineering, electric cars, solar grids, and a Mars colony; on the other, a green vision in which people live smaller, slower lives in harmony with nature in small-scale communities that have gone back to the land.

Second, the ideological tension between green and gray urban nature obscures the fact that there are no necessary differences between these two ideas of sustainability with respect to their environmental content or their objective sustainability outcomes. Both are *socionatures*: hybrid assemblages of the social and natural (Swyngedouw 1996). Green strategies are not somehow more natural because they rely on visible deployments of nonhuman nature, nor are gray strategies somehow more social or more technological. Both rely on complex and cutting-edge metabolisms of nature, capital, society, and technology. In practice, both take concrete form in small- and large-scale, top-down and bottom-up ways; for every community garden there is a massive coastal reengineering effort, and for every transnational corporate smart city there is a neighborhood infill scheme. Likewise, the relationship between either of these forms of appearance of sustainability and actual sustainable outcomes is also a contingent one. Even as the low-carbon benefits of high-tech postindustrial cities have arguably been oversold (Wachsmuth, Cohen, and Angelo 2016), gray urban nature strategies can be effective at reducing greenhouse gas emissions where they take appropriate account of spatial and temporal scale (Ramesh, Prakash, and Shukla 2010). Conversely, whereas more trees do not guarantee urban sustainability (Escobedo, Kroeger, and Wagner 2011), retrofitting city streets and buildings with more vegetation really does reduce rainwater runoff and urban heat island effects (Susca, Gaffin, and Dell'Osso 2011). Perhaps most important, both confirm an underlying intuition that urban environments are not antithetical to nature but key places for envisioning and creating sustainable futures.

These dynamics open up a number of questions for future research and political action. First, although a current common configuration of green and gray urban natures is gray substrate, green surface, our analysis implies that this relationship could change. As discussed in the context of the Ruhr region, in contrast with the long history of green nature as a resource for improving cities, gray urban nature is a relatively new representational form. A green surface helps communicate the ecological content of gray urban nature by appealing to a more familiar environmental referent. As gray urban nature becomes a more intuitive signifier of sustainability, will green urban environmental policies someday need to wrap themselves in gray aesthetics to signal their sustainability content to policymakers and experts?

Second, green and gray are not inherently city-centric, despite their deployment in practice. Comparison to ecological critiques of urbanism in the

1960s and 1970s highlights the spatial tunnel vision of contemporary urban sustainability. Although postwar ecological thinking rigorously used the boundary of the city to separate the human and nonhuman environments, it treated the two as interconnected components of a common social field (e.g., Wolman 1965). U.S. policy in the 1960s, for instance, saw the proliferation of regional councils meant to address sustainability challenges by integrating the governance of urban areas and their "environmental" peripheries (Atkins and Wilson-Gentry 1992). Nowadays urban sustainability thinking—of the sort represented by Masdar City or the High Line—does not need to leave the city to find nature and maybe for this reason, it tends not to. How can the now-robust appreciation of city–environment interconnections be better integrated with the growing awareness of the planetary dimensions of contemporary urbanization processes?

Third, we have outlined green and gray urban nature as the dominant representations of human–environment relations in contemporary urban policy. Are they also categories through which people understand human–environment relations in everyday life? To the extent that these ideological notions are repertoires for social action, they are not equally available to all social actors in all contexts. Until the 1990s, North American and European environmental movements and organizations were predominantly antiurban and antigrowth advocates for the conservation of wild animals and unspoiled habitats, casting human encroachment on nature as environmental catastrophe (Du Pisani 2006). Today, they advocate for investment in sustainable cities. Despite the environmental movement's urban turn, however, it remains a challenge for advocates to "see" the ecological content of gray urban nature issues or build alliances across what are effectively green and gray environmental movements, as Cohen (2017) recently argued in the context of climate politics in São Paulo. In what ways do urban sustainability governance agendas and coalitions differ when mobilized around green or gray urban natures? Who "counts" as an environmental actor in formal urban environmental politics and on the basis of what representations of urban sustainability?

Fourth and finally, both green and gray forms of urban sustainability thinking have developed in a far more system-affirmative direction than their postwar precedents. In contrast to the dominance of market-oriented, progrowth conceptions of sustainability today, 1960s and 1970s forerunners of sustainability discourse such as *The Limits to Growth* (Meadows et al. 1972) and the steady-state economics of Daly (1973), all adopted effectively anticapitalist critiques that saw environmentally harmonious outcomes as incompatible with endless accumulation. Today, although green and gray urban natures both contain seeds of concern for social equity, these have tended not to be at the forefront of actually existing urban sustainability policy, as the case of Vancouver illustrates. How can existing progressive and radical visions of urban sustainability be supported, and how can new visions be developed?

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