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The Environmental Injustice of Green Gentrification

The Case of Brooklyn's Prospect Park

Kenneth A. Gould and Tammy L. Lewis

How are environmental "goods" distributed? This chapter takes a twist on environmental injustice by examining the allocation of environmental goods, rather than environmental bads. Traditionally, the literature on environmental justice has largely focused on who gets the environmental "bads" of society—toxic waste, hazardous facilities, and poor air quality, to name a few. As movements shift from pointing out environmental injustices to seeking environmental justice and what Agyeman (2005) calls "just sustainability," we need to ask, who gets the environmental amenities? Parks? Water cleanup? Access to affordable public transportation? Resources for environmental improvements? Which communities get the "goods" to improve their quality of life?

By looking to goods as well as bads, this chapter attempts to shift the conversation to a broader understanding of environmental inequality, one that looks to the full spectrum of distribution (Lewis 2011). An analogy can be made to income inequality. We cannot understand income inequality only by studying poor people.[1] Likewise, we cannot understand environmental inequality only by studying contaminated communities. While it is not the task of this chapter, by considering the range of distribution, we can devise environmental measures similar to those used to assess income inequality. We might ask, at what levels of environmental equality do we recognize just sustainability?

If we could quantify environmental "goods" and environmental "bads," a distribution score, like the GINI coefficient (a measure of inequality of income distribution), could provide indicators for whether the distribution of environmental goods and bads was getting more or less equal. This inequality has real consequences for responses to environmental change. Greater inequality in the distribution of environmental goods removes those at the

top of the distribution from negative environmental feedback loops (Gould 2006). Thus, those with the most political, social, and economic power are also those least likely to recognize environmental problems or have incentives to address them.

Historically, environmentally poor groups led movements for environmental justice based on threats to their communities, and environmentally rich groups sought further environmental amenities, such as bike paths, brownfield cleanups, farmers markets, and waterfront improvements. If environmental distributions proceed along "environmental class" lines much like income, we would expect the environmentally rich to get richer, and the environmentally poor to get poorer. Agyeman (2005) argues that groups for environmental justice and for environmental sustainability have the potential to blend frames to work for "just sustainability." However, this may be increasingly difficult if those at the top are seeking environmental goods and those at the bottom are trying to avoid environmental bads. The two ends do not see the same "environment."

This chapter attempts to move the study of environmental distributions forward by focusing on a specific form of environmental good: ecological restoration of urban environmental amenities. The chapter asks, how do real estate markets, organizations, and institutions respond to the transformation of an environmental bad (or neutral) into an environmental good? What are the consequences for nearby residents? How does ecological restoration impact social inequality and the distribution of environmental goods? We propose that, due to the operation of markets and actors that form the urban growth machine (Logan and Molotch 1987), the creation or restoration of an in situ environmental good will increase environmental inequality, as the amenity drives up property values, physically displaces those at the lower end of the stratification pyramid, and attracts new residents at the higher end. The benefits of the environmental good are thus distributed away from those who lived near it, and upward to those who can afford to be attracted to it. Therefore, without clearly focused public policy intervention, in situ environmental improvements will tend to increase racial and class inequality, and decrease environmental justice, a process we refer to as "green gentrification".

In this chapter we explore the distributional dynamics of green gentrification in Brooklyn using the restoration of Prospect Park as a case. The research and analysis present here is drawn from a larger project that is analyzing the distributional consequences of a number of environmental amenity projects in Brooklyn. The projects vary in terms of the degree to which they have been completed and the policy interventions that have or have not been made. The case presented here, that of Prospect Park, is the example that has the longest history, with the remediation intervention beginning in 1980, and one that proceeded without policy intervention to address distributional outcomes. To

fully understand the unique role that environmental amenity restoration plays in the redistribution of urban quality of life in general, and the distributional impacts of Prospect Park restoration in particular, it is first necessary to examine the housing market dynamics that underlie the distribution of environmental goods and bads by race and class.

THE RACE AND CLASS LANDSCAPE OF RESIDENTIAL INEQUALITY

Much of the literature addressing issues of environmental justice focuses primarily on the role of institutional, cultural and individual racism in directing environmental and public health hazards toward politically disenfranchised racial and ethnic groups (Bryant and Mohai 1992; Bullard 1990, 1993, 1994; Bryant 1995; Roberts and Toffolon-Weiss 2001; Pellow 2002; Sze 2006; Taylor 2009). The term "environmental racism" was originated to specifically describe race-based discrimination in the siting of hazardous facilities and the remediation of environmental hazards in the United States. Numerous studies have indicated that in the United States, race is a predictor of where environmentally hazardous facilities will be located (Bryant and Mohai 1992; Bullard 1994; Mohai and Saha 2007). This can only occur because of racial segregation in housing. Various manifestations of racism in environmental policy, real estate markets, lending institutions and employment generate extreme levels of racial segregation in residential patterns (Massey and Denton 1993). Well-documented social phenomena such as "white flight" allow real estate companies to "block bust" and "flip" entire neighborhoods. Race-based differences in access to credit due to lending discrimination in mortgage and home improvement loans, and lending institution red-lining of neighborhoods restrict housing markets for people of color, and slate neighborhoods for decay and devaluation. Real estate companies similarly redline neighborhoods to use racial animosity and unease to manipulate the relative value of housing stock in order to maximize profits on sales and investments. The reliance of public education funding on property values in many cases (and local parent-teacher associations in urban neighborhoods) reinforces such inequalities by slating neighborhoods of color for lower quality education (Kozol 1992), thus reducing long-term purchasing power and credit worthiness, and restricting access to more expensive and extensive housing options and locations. All of this feeds into larger socio-cultural and social structural patterns of racial discrimination in employment and promotion, again limiting access to the income, wealth and credit that facilitates better and wider housing horizons for people of color.

These multifaceted systems of racial inequality produce the landscape of "residential apartheid" that is a key factor in allowing the owners of and investors in production and disposal facilities to target communities of color for a disproportionate share of the environmental and public health costs of production (Bullard, Grigsby and Lee 1994). At the same time, the existence of racially segregated housing patterns allows for the environmental protection of white communities, who reap a greater share of the economic benefits of production while shifting the ecological and health costs to communities of color. Underlying the race-based systems of housing distribution is an economic structure that routinely and regularly distributes environmental hazards socioeconomically downward, and environmental amenities socioeconomically upward.

The distribution of environmental hazards by social class is a normal outcome for capitalist economies. Markets, left to function on their own without state intervention, will normally distribute goods and services on the basis of wealth. The treadmill of production generates both economic benefits and environmental hazards (Schnaiberg 1980; Schnaiberg and Gould 2000; Gould, Pellow and Schnaiberg 2008). The economic benefits of production tend to be distributed up in the stratification system. Owners, managers and investors reap a greater share of the economic benefits generated by the production of goods and services than do workers. Conversely, the environmental hazards generated by the production of goods and services tend to be distributed down in the stratification system (Gould et al. 2008). The contamination of water, land and air by toxic industrial effluents, and their consequent negative impacts on human health disproportionately impact workers and the unemployed, while owners, managers and investors are able to use the wealth gained from production to purchase housing in environmentally safe areas. Those whom cannot afford to move to such areas are forced to live with environmental hazards. In this way, each round of economic growth tends to increase the gap between rich and poor, as well as increase the gap between environmentally safe and environmentally hazardous residential spaces (Schnaiberg and Gould 2000).[2]

What makes it possible to distribute environmental hazards to workers and the poor is the segregation of housing locations. By segregating the working-class and the poor into specific residential locations away from those of the wealthy, the owners, managers and investors able to direct environmental contamination toward the lower socioeconomic classes and away from themselves. Were residential patterns not segregated by class, environmental hazards and their negative public health impacts would by necessity tend to be distributed more evenly across the stratification system. Similarly, without class-based residential segregation, access to neighborhood environmental amenities could not be easily reserved for the wealthy.

The class-based segregation of housing is a normal outcome of the functioning of a capitalist economy in which housing is distributed on the basis of wealth. Housing costs tend be lower in areas in close proximity to environmentally hazardous facilities such as industrial plants, waste dumps, and sewage treatment plants. In general, the higher the known and obvious environmental risks in an area, the lower the cost of housing. Housing costs in relatively environmentally safe areas at greater distances from hazardous facilities tend to command a higher price in housing markets. Housing abutting environmental amenities such as well-maintained parks, greenways, and clean waterfronts come at a premium, especially in congested urban areas. As a result, the poor and working-class are quite constrained in their choice of housing location and restricted to living in those areas with greater environmental and health risks and lower access to environmental amenities. Those earning higher wages or receiving their income from investments have greater freedom to choose among more and less desirable housing locations. With the option to do so, wealthy individuals will tend to choose to live where environmental risks are lower, and environmental amenities are greater. If an area previously believed to offer low risk of exposure to environmental hazards is later found to be contaminated, those with greater wealth will be able to move to a less hazardous location. Those with less wealth will be forced to remain in the contaminated area (Szasz 1994). In this way the structure of housing markets functions to continually reinforce and deepen the class-based distribution of exposure to environmental hazards as the wealthy exercise an exposure "exit option" that is unavailable to the lower classes (see Figure 6.1). Conversely, if environmental amenities are created or restored in a previously poor or working-class community, the value of that real estate is necessarily increased, as the environmental amenity makes the location more attractive to a larger market. As demand for housing with easy access to an environmental amenity increases, real estate and rental prices are pushed upward. Existing residents without the means to increase the share of their incomes spent on rent are forced to abandon their neighborhoods to make room for new, wealthier residents. Additionally, as the market values of homes near a restored environmental amenity rise, incentive for existing homeowners to sell increases, further increasing the likelihood that houses and neighborhoods will be "flipped". Market forces in general, and real estate markets in particular, therefore tend to respond to ecological restoration by redistributing access to previously degraded environmental amenities away from existing poor, working-class, and middle-class residents to wealthier in-migrants able to afford the inflated housing costs that environmental improvements have generated (see figure 6.2).

As noted above, a combination of racial discrimination in lending and real estate practices (rooted in exploiting racism to boost profitability) limits

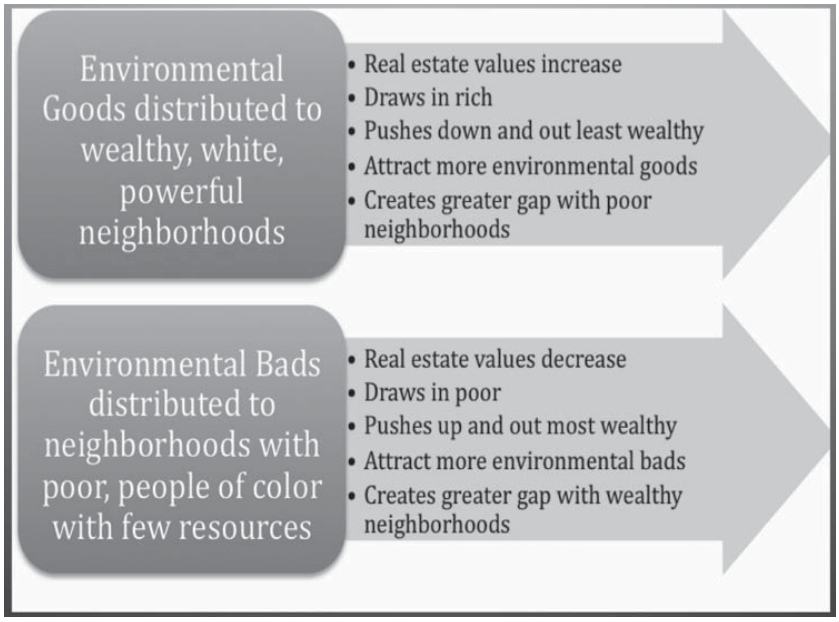

Figure 6.1. Distribution of mobile environmental goods/bads creates increasing gap between affluent and poor neighborhoods.

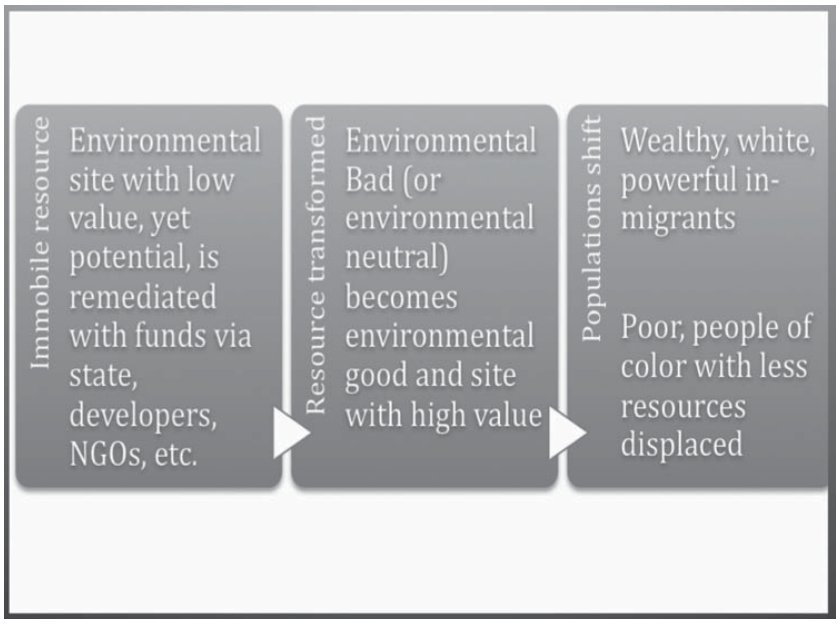

Figure 6.2. Changes in distribution of benefits of immobile environmental resource when it changes from an environmental bad (or environmental neutral) to an environmental good via remediation/restoration.

the housing market for people of color. The structure of the economy limits the ability of the poor and working-class to avoid exposure to environmental hazards, and institutional and cultural racism serves to limit the ability of people of color to avoid exposure to environmental hazards. Since poor people of color experience both forms of restriction both independently and synergistically (in terms of racism reducing access to the means by which to increase class status, most notably education, employment, and credit), it is they who have the least capacity to avoid exposure to environmental hazards, and the least capacity to exercise an "exit option" when hazards are identified. Conversely, these same synergistic and independent processes of racial and class discrimination in housing options make it less possible for people of color, especially poor, working-class, and middle-class people of color to move into neighborhoods which offer easy access to environmental amenities, or to remain in neighborhoods in which environmental amenities have been added or restored. Ecological remediation of potential environmental amenities is therefore likely to not only to redistribute access to the amenity through residential access to those with greater wealth, but in doing so (and independently) such environmental improvements are likely to redistribute access to the amenity and surrounding residential spaces from people of color to white in-migrants.[3]

THE SOCIAL GEOGRAPHY OF POWER

In capitalist societies, wealth is a primary component of power. Those with greater economic power have a greater ability to influence the state, even in ostensibly democratic political systems (Domhoff 1998). Power to control patterns of capital investment, to control the creation and distribution of employment, to finance electoral campaigns, and to purchase mass media time and space provides the wealthy with greater access to, and influence over public policy decision-makers. While greater political power accrues to those with greater wealth, greater wealth also accrues to those with greater political power. Residential segregation concentrates the politically powerful in specific communities (Domhoff 1998), while simultaneously concentrating the politically less powerful in other communities. The distribution of political power and the distribution of housing location synergistically generate a spatial distribution of power. In theory, it should be possible to map this distribution as a social geography of political power.

The distribution of distinct spatial locations of political power within and between various neighborhoods is a normal outgrowth of the functioning of a market economy. This result produces neighborhoods with limited capacities to reject the imposition of environmental hazards and to affect the restoration

of environmental amenities, while simultaneously creating neighborhoods with enormous capacity to control their own environmental trajectories. The more powerful neighborhoods will be home to politicians, lawyers, doctors, real estate developers, and other professionals whom may be mobilized as a political resource in efforts to repel the siting of a locally unwanted land use (LULU) or to initiate the remediation of a degraded environmental resource. The less powerful less wealthy neighborhoods are less likely to have such human capital resources immediately at their disposal (Pastor, Sadd and Hipp 2001). This lack of professional human capital resources makes those neighborhoods more vulnerable to state and industry efforts to site a LULU in close proximity to their residential location. This unequal spatial distribution of power may operate in two ways. First, those seeking to locate a hazardous facility may apply their sense of the spatial geography of power to choose siting locations where low levels of effective political resistance are likely (Cerrell Associates and Powell 1984). In this way, the existence of potentially mobilizeable power is sufficient to keep environmental hazards out of wealthier neighborhoods. The environmental trajectory of gentrified urban neighborhoods is therefore "greener". Poorer, less powerful neighborhoods are, conversely, more likely to be targeted for hazardous facility siting as decision-makers anticipate the political resistance of more powerful neighborhoods (Lake 1996, Pulido 1996). The neighborhoods to which those displaced by gentrification are forced to relocate to are therefore likely to have "browner" environmental trajectories. Second, more powerful neighborhoods, if chosen as the preferred location for the siting of such a facility may mobilize their economic and political resources to effectively defeat the siting effort. Less powerful poor communities, lacking the economic resources, political connections, and professional human capital resources which may bolster an effort to prevent a facility siting, will be less able to mount a successful rejection campaign. The outcome of the unequal spatial distribution of political power is a further reinforcement of the economic tendency to distribute environmental and public health risks to poor and working-class populations.

Less wealthy and less powerful communities of color will clearly find it difficult to effectively fight for the ecological restoration of environmental amenities in their urban neighborhoods. Poor and working-class communities of color possess limited resources, and greater policy attention will be focused on the environmental demands of wealthier neighborhoods. Additionally, policymakers have incentive to retain the important functions that environmentally degraded neighborhoods play in the greater metropolis as spaces to which the environmental risks that are unwanted by wealthier communities may be distributed. Therefore, community-based, grassroots struggles for green-space or waterfront restoration in poor neighborhoods face a daunting uphill battle. Environmentally motivated community activists from wealthier

neighborhoods may be enlisted to join the battle to restore urban environments, but arguments resting on purely ecological and quality of life grounds may fall short in a policy arena that responds to power, profit and economic growth. However, with the potential profit to be realized from environmental restoration for real estate investors and developers, efforts for the rehabilitation of environmental amenities may attract other external allies. Ecological remediation can make entire neighborhoods more attractive and more valuable, thus holding out the promise for fusing economic growth priorities with environmental values. However, from its conception, the social trajectory of such ecological renewal is to combine the improvement of the environment with the dislocation of the urban residents who inhabit it. Neighborhoods may be environmentally rehabilitated, but for newcomers with resources, not for those who currently live with the degraded amenity.

GREEN GENTRIFICATION

We use the term "green gentrification" to describe urban gentrification processes that are facilitated in large part by the creation or restoration of an environmental amenity. Rather than cases in which already gentrified neighborhoods develop constituencies for local environmental amenities (where gentrification leads to greening), our focus is primarily on cases in which a significant "greening event" leads to gentrification. In cases in which the gentrification process *may* be in the earliest stage, it is often difficult to tease out the causal direction (i.e. whether gentrification leads to greening or greening to gentrification.) We do not doubt that gentrification can lead to greening. In the 1980s, the Park Slope neighborhood adjacent to Prospect Park showed early signs of gentrification (in terms of shifting constituencies) at the same time the City and a non-profit organization were starting to raise funds for redevelopment of Prospect Park. The neighborhood gentrification and the park redevelopment contributed to each other; i.e. the nascent gentrification created a demand for greening and the greening increased the gentrification, though it is not clear which came first. In addition to this iterative growth process, we argue that greening has an independent and direct effect on gentrification. In other words, a "greening event," on its own, can create gentrification.[4] Nevertheless, both causal directions have distributional implications. They both have the effect of providing greater access to environmental amenities to richer, more powerful groups. In green gentrification, existing and potential environmental amenities price out the current group of residents and draw in a wealthier group, with the displaced becoming a new form of "environmental refugees" forced to flee from enhanced environmental improvements, which increase quality of life and property values. In many instances,

such green-led redevelopment is intentional, as investors and public officials create new or renewed green spaces as a means to raise property values and tax revenues. For example, as we discuss later, the original idea for Prospect Park emerged as a gentrification scheme where the establishment of a green amenity would attract wealthy residents and boost real estate values in Brooklyn. The success of the park generated high quality housing stock that would later provide the infrastructure for waves of gentrification. Clearly, there are many causes of gentrification. Historical architecture, proximity to transportation, and cycles of investment are some of these (see Zukin 1987 and Smith 1996). Our purpose here is to show the impacts and implications of "greening" as an element of gentrification.

The concept of "green gentrification" builds on the idea of "gentrification." There are numerous ways that gentrification has been described. A definition we find useful for its emphasis on the distributional impacts is the one Tom Angotti uses in his book about New York City real estate processes, *New York for Sale.* Angotti explains gentrification:

> Throughout the city's history, working people without wealth have been shunted from one city tenement to another, especially after they make improvements to their housing and neighborhood. As tenants and small business owners invest their time and money to gradually upgrade their neighborhoods, real estate investors become attracted to these areas and anxious to capitalize on the improvements. As investors large and small move in, they effectively appropriate the value generated by others. This is the essence of what is now known as *gentrification.* It is not simply a change in demographics. It is *the appropriation of economic value by one class from another* (2008:108).

"Green" gentrification is different than the gentrification that Angotti describes in that the "greening" of the amenity is not necessarily due to the actions of "tenants and small business owners," rather the "greening" comes primarily from outside investors (public and private) who appropriate the value of an [unrevitalized] environmental resource. In this sense it is the *appropriation of the economic values of an environmental resource by one class from another*. As we will illustrate with the case of Prospect Park, calls for environmental restoration draw state resources aimed at producing an urban environmental amenity that are then appropriated by extra-local capital interests (both developers and in-migrants).[5]

RACE, CLASS, AND ENVIRONMENTAL CHANGE IN BROOKLYN

Brooklyn is the most populous of New York City's five boroughs, and has been a site of constant, often dramatic, economic and demographic change through-

out its history. In the post-World War II era, Brooklyn experienced steady and dramatic deindustrialization, lead by the shifting of port facilities to New Jersey and the closing of the Brooklyn Navy Yards. Most older Brooklynites mark the end of a romanticized era by the defection of the Brooklyn Dodgers to Los Angeles in 1957. Throughout the 1960's and 1970's the borough experienced a steady population decline, fueled by reduced economic opportunities, and white flight. Many of Brooklyn's white ethnic residents moved to the expanding suburbs of Long Island and New Jersey, or relocated to the borough of Staten Island, facilitated by the opening of the Verrazano Narrows Bridge in 1964. By 1981 Brooklyn's population began to rebound, largely due to a wave of immigration from the Caribbean that would eventually give Brooklyn the largest Caribbean population outside of the Caribbean itself.

As higher wage manufacturing jobs gave way to lower wage service employment, the demographic profile of Brooklyn became poorer and less white. The well-known cycle of urban decay proceeded, with steady disinvestment following New York City's economic crisis of the 1970s, and steady increases in crime and aid dependency. The perception of most public officials was that Brooklyn was in "decline". That decline took its toll on Brooklyn's substantial environmental amenities as well, such as Prospect Park.

Of course, economic decline can be parlayed into economic opportunity, and gentrifiers were able to claim some of Brooklyn's high quality housing stock at relatively low costs while in disrepair. However, major reinvestment in Brooklyn did not emerge until the 1990's, marked by the downtown construction of the Metrotech center (in the corner of Brooklyn closest to Manhattan's financial district). Efforts to reinvigorate Brooklyn's economy and attract investment were not limited to office parks. Investment in Brooklyn's premiere nature park was also part of the redevelopment push in an era in which urban environmental amenities were increasingly recognized as valuable. As real estate prices in Manhattan pushed wealthy whites over the bridges into Brooklyn, and the attacks of 9/11 made lower Manhattan even less attractive, a wave of gentrification in Brooklyn ensued. By 2002 there were sufficient push and pull factors in place to set off a major wave of real estate investment and a major redistribution of housing. In the first half of the first decade of the new century, unemployment in Brooklyn fell, the number of jobs increased, and so did wages (Brooklyn Chamber of Commerce 2006). Not only was existing housing stock increasingly colonized by in-migrants into formerly less wealthy neighborhoods, but also some of that housing stock was purchased by developers for a wave of new construction. The number of new residential building permits issued for Brooklyn doubled from 2001 to 2005 (Brooklyn Chamber of Commerce 2006). By 2005, Brooklyn had more new residential units permitted for construction than did Manhattan (Brooklyn Chamber of Commerce 2006).

Brooklyn clearly manifests the geography of racial and class residential segregation, despite its remarkable diversity. While market forces in Brooklyn real estate serve to generate residential class segregation, overt and covert racism in the real estate industry serve to generate greater residential racial segregation. The wave of gentrification and residential redevelopment in Brooklyn has redistributed housing location along racial lines, and often quite intentionally. For example, from 2003 to 2006, the National Fair Housing Alliance (NFHA) conducted a study of housing segregation and racial discrimination in twelve cities. The NFHA found one of the largest real estate firms operating in Brooklyn to be engaged in "discriminatory real estate sales practices, including limited service, lack of follow-up and withholding of housing information" in regard to its African American clients (NFHA 2006: 4).

> In Brooklyn, NFHA's testing of the Corcoran Group Real Estate, a member of NRT, Inc., revealed that real estate agents steered home buyers by race and denied basic services to African-Americans. Throughout NFHA's investigations, NRT, Inc. has proven time and time again that it maintains a pattern and practice of discrimination based on race. (NFHA 2006: 4).

In the midst of Brooklyn's wave of gentrification, one of its largest real estate firms was found to be deeply engaged in the intentional racial restructuring of the borough. Corcoran's red-lined map (discovered by NFHA in a sting operation) clearly marks neighborhoods adjacent to recently restored environmental amenities such as a rehabilitated Prospect Park, and green-space redesignated piers (Brooklyn Bridge Park) as places to which white in-migrants should be resettled (Cohen 2006). Corcoran's racial steering illustrates the spatial relationship between redeveloped urban environmental amenities and the redevelopment of urban neighborhoods for new, white, residents.

PROSPECT PARK

The idea of Prospect Park was conceived in the 1850s and construction began in 1866.[6] At the time, Brooklyn was a separate city from Manhattan, and leaders in the two cities competed on all fronts. A builder and railroad constructor (a.k.a., early developer), James Stranahan, wanted Brooklyn to have a park that rivaled Manhattan's new Central Park, to draw the wealthy and to increase property values. He wanted the park to "hold out strong inducements to the affluent to remain in our city, who are now too often induced to change their residences by the seductive influences of the New York [Central] park" (Berenson and deMause 2001). The original motivation for the park was clearly tied to creating wealth in Brooklyn via housing distribution.

By the time of Prospect Park's 100th anniversary, the Park's infrastructure had been neglected and as a result, visits to the Park dropped in the late 1970s to the lowest in its history (less than 2 million visitors per year). The Park had developed a reputation as a crime-ridden home to drug dealing and homeless encampments, a dangerous place to be avoided. In the 1970s and 80s, reportage on the park was distinctly negative. Local papers routinely reported on murders, bicycle thefts, muggings, and purse snatching in the park, deepening the park's image as a social hazard rather than an environmental amenity. In October of 1980, the New York Times ran a series of articles addressing the decay of New York's parks, bemoaning the fact that "these once glorious urban oases are now unsightly and dangerous dumps" (*New York Times* 1980: A30).

In response to concerns raised by local citizens, the City, under Mayor Ed Koch, committed $10 million for restoration projects. The New York Times announced that start of Prospect Park restoration with the headline "For Prospect Park, $10 Million to Recapture What It Was" (Quindlen 1980: B1). According to the Prospect Park Alliance (PPA), a nonprofit organization formed in 1987, this is when the Park's renaissance officially began. By 1985, police had established antigraffiti stakeouts in Prospect Park to thwart highly visible signs of neglect and decay (Carmody 1985: B3), nearly thirteen years after Mayor Lindsay had publicly denounced graffiti in a speech at the Prospect Park boathouse (*New York Times* 1972: 30). Throughout the 1980s and 1990s, ecological restoration of the park picked up steam.

Since that time, the park has been restored as an environmental amenity. The ecological restoration of the park has included a meticulous reconstruction of Olmsted and Vaux's original design specifications, increased focus on restoring native species and controlling invasive and non-native species, reducing soil compaction by limiting visitor's off-path access to forested areas, and restoring understory and herbaceous plants (again by limiting visitor's off-path access). The ecological and social renewal and redirection of the park have come hand in hand. "Prospect Park has successfully overcome its 1970s reputation as an unsavory place. Today more than 8 million annual visitors enjoy a variety of activities and destinations, from in-line skating to nature walks, from baseball games to zoo visits, and from picnicking to volunteer projects." (www.prospectpark.org). Park programming also seeks ways to embrace the cultural diversity of Brooklyn's residents. Numerous racial and ethnic groups use the park for a variety of activities (Low et al. 2005). Today, the park is operated by the Prospect Park Alliance, a private organization in partnership with New York City. The Park reached its low point in the late 1970s, and since that time, has been transformed from an in situ socio-environmental bad with potential, to an important socio-environmental amenity.

The ecological restoration of Prospect Park helped transform the image of the park from an urban liability to an urban amenity. Park features such as the Third Street Playground became attractions for white, wealthy parents and children (see figure 6.3), who in an earlier era, would have avoided the park. The late twentieth century image of the park as a social liability contrasts starkly with the image of the park presented by Brooklyn's booming real estate industry in the early twenty-first century. The Corcoran Group now uses proximity to Prospect Park to move real estate in Park Slope, Prospect Heights, and Prospect Park South, listing the park as one of the neighborhoods "most wonderful amenities" (Corcoran Group 2010). Fillmore Real Estate proclaims the virtues of the parks "majestic 585 acres" noting that it "includes a forest, [and] a meadow," to move real estate in the Crown Heights and Lefferts Gardens neighborhoods (Fillmore Real Estate 2010). Other real estate agencies describe Windsor Terrace as "tucked between the rolling hills and vast green spaces of Prospect Park and Greenwood Cemetery," and Prospect Park as "home to green lawns, lakes, a tennis center and endless recreational opportunities," an "urban oasis" (Prudential Douglas Elliman Real Estate 2010; Rapid Realty 2010). And Corcoran sells the new Richard Meier building as "the borough's premier address, gracing the heart of Brooklyn at

Figure 6.3. Prospect Park's Third Street Playground, Park Slope. Caption: Photograph by Ken Gould.

One Grand Army Plaza. Steps away from over 500 acres of natural parkland" (Corcoran Group 2010).

Indeed, Prospect Park has been transformed. Meticulous restoration to much of its original beauty has proceeded effectively, and continues with the construction of new skating facilities to replace those that blighted Olmstead and Vaux's original design. No longer perceived as a place one goes to get mugged, the park is vibrant with runners, bikers, skaters, baby strollers, picnickers, and others. Park users can be seen sporting thousands of dollars worth of outdoor recreation equipment seemingly without serious security concerns (see Figure 6.4). Clearly, it is not the 1970s in the park anymore.

As Prospect Park was transformed from a perceived social hazard into a quality of life enhancing environmental amenity, it attracted both urban gentrifiers, and those who would profit from them. In her work, Landscapes of Power, Sharon Zukin notes small-scale real estate developers as a primary category of gentrifiers. She quotes one such gentrifier in Brooklyn who explains the strategy, "You find it [a building to upscale] in a neighborhood that still has problems but is close to a park . . . something that will bring in the middle class. And almost by the time you are through other buildings around it will have started to be fixed up" (Zukin, 1991: 193). In addition to rehabilitating existing structures, the restoration of the park set off a wave of new

Figure 6.4. Riders and runners in Prospect Park. Caption: Photograph by Ken Gould.

Table 6.1. Building permits issued for new residential construction by community district

Community District	*1997*	*2002*
6	2	228
7	9	165
8	0	149
9	6	41
14	18	70
Total	35	653

Source: Community District Profiles (http://www.nyc.gov/html/dcp/html/lucds/cdstart.shtml).

construction. Brooklyn's new housing construction boom was, and is, focused on a number of specific neighborhoods. The social re-taming, and ecological re-wilding of Prospect Park made many of the neighborhoods surrounding it prime targets for developers. Table 6.1 below captures the onset of the new construction boom in the five community districts that border Prospect Park, illustrating a greater than 1,800 percent increase in new residential construction building permits (Brooklyn Community District Profiles 2009). As the purchase and rental costs of new construction in Brooklyn have approached those of Manhattan, the class and racial profile of the neighborhoods into which such construction has been thrust has necessarily shifted up the stratification scale.

CENSUS DATA-BASED EVALUATION OF "GREEN GENTRIFICATION"

To evaluate the degree to which green gentrification is occurring around Prospect Park, we use census data to examine three propositions. If green gentrification is occurring we expect that over time: 1) minorities will be displaced from the area surrounding the park *(greening whitens hypothesis)*, 2) poor people will be displaced (*greening richens hypothesis)*, and 3) rents and property values will rise (*greening raises rents hypothesis)*.

We analyze census data for the five neighborhoods surrounding the park (see Figure 6.5 and Tables 6.2-6.7). These neighborhoods include Park Slope, Prospect Heights, Lefferts Gardens, Prospect Park South, and Windsor Terrace. Neighborhood boundaries are fluid, and shift according to the desirability of the neighborhood. For instance, as Park Slope, the gentrified neighborhood on the west side of Prospect Park, has commanded higher and higher rents and sales prices, its "real estate borders" have grown westward and southward. In this context, it can be tricky to define the borders of the

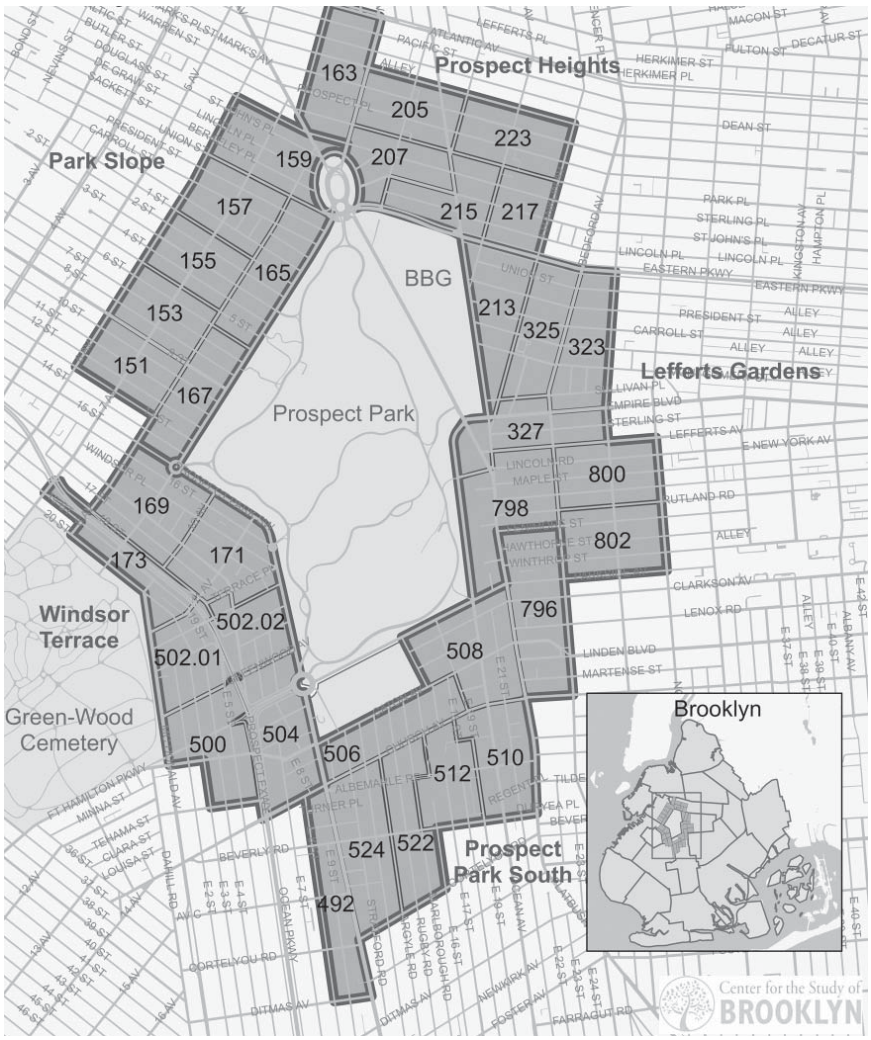

Figure 6.5. Census Tracts Adjacent to Prospect Park. Caption: Source: Center for the Study of Brooklyn.

neighborhoods around the park. In order to define the neighborhoods, we used five types of sources: 1) maps in print and on-line (see, for example, Jackson 1998), 2) real estate borders, 3) geographic boundaries, 4) census tracts, and 5) residents' self-identification. As Figure 7.5 illustrates, this resulted in an examination of the area around the park within about two census tracts from the park The proximity of these neighborhoods make them most likely to experience a "park effect."

We evaluate the demographic changes from 1990 until present to see if "greening" the park also "gentrified" the neighborhoods by way of "whitening," "richening" and raising rents. We compiled census data from the U.S. Census Bureau with regard to race, class, social power, and housing for each neighborhood (see tables 6.3–6.7) to evaluate these trends. We also consider how Brooklyn changed over the same period (table 6.2) to tease out broader borough-wide changes from local changes.

Before discussing the quantitative changes, it is worth providing some background for each of these neighborhoods. Park Slope, to the west of the park, is currently one of the most sought after places to live in Brooklyn. It features restored brownstones, trendy coffee shops, Brooklyn's oldest natural food co-op, and numerous children's clothing boutiques. The park is its most important amenity, with multiple entrances to the neighborhood along Prospect Park West. This side of the park has three renovated playgrounds, the Bandshell (which houses free summer concerts), the Picnic House, a New York City landmark (Litchfield's Villa), in addition to being close to Grand Army Plaza, the focal point of the park.

Prospect Heights (the highest elevation of the park) sits at the north end of the park surrounding Grand Army Plaza, where the weekly farmers market draws thousands of visitors to buy local produce, just across from the main branch of the Brooklyn Public Library. Though there are multiple entrances around the park this is the "main" entry into the park's famous "long meadow." The entry at Grand Army Plaza also serves as the venue for community events, such as Brooklyn's New Year's eve party, where elected officials speak, local bands play, and families gather to watch the fireworks on the long meadow. Real estate agents have been aggressively expanding the boundaries of the neighborhood east, to associate more housing stock with the park.

Lefferts Gardens runs along the east side of the park. There are numerous attractions along this side of the park, such as the Carousel, the Prospect Park Zoo and the historic Lefferts House, however, access to the park from Lefferts Gardens is limited in two ways. First, on the northeast end, the park and the neighborhood are separated by an approximately block wide swath of greenspace that contains the Brooklyn Botanic Garden (BBG). While the BBG is certainly a green amenity, it is fenced in and charges an entry fee. Residents of Lefferts Gardens north cannot walk across the BBG to enter the park, they must walk to the north, to Grand Army Plaza, or to the south, to the entry located in the center of the west side, near the Carousel. Secondly, if residents were able to cross the BBG, they would find that when they do reach the border of the park, because of the location of the Zoo, this area of the park is fenced. Thus, despite the proximity of Lefferts Gardens residents to the park, access is difficult.

Prospect Park South abuts the park at the narrow south end. The Parade Grounds, which include soccer and football fields, and the tennis center, are in Prospect Park South. The Park's lake is at the south end, and in the south east corner is the "Drummer's Grove." According to the Prospect Park website, "In 1968, the Congo Square Drummers began gathering here informally. Since then, the circle has expanded to include an ever-evolving mix of musicians, dancers, and vendors. The growing popularity of this area as a site for a weekly drumming circle inspired the Prospect Park Alliance to add seating and officially name the site. Anyone is free to bring their drums and participate, or just stop and listen while passing by on the East Drive. The Drummer's Grove was a part of a $1 million renovation of the Parkside Avenue/Ocean Avenue entrance to the Park that occurred in 1997" (www.prospectpark.org/visit/places/drummers).

Finally, Windsor Terrace sits to the south west of the park, between Prospect Park South and Park Slope, and is nearest the park's ballfields. Green-Wood Cemetery, Brooklyn's second largest green space borders the other side of Windsor Terrace. At its northern corner, is a large entryway to the park with subway access. Windsor Terrace has a reputation as a residential neighborhood where houses never go on the market because homes are bought among family members, neighbors, and friends.

The five neighborhoods adjoining Prospect Park each responded to the restoration of the green space as an environmental amenity. The extent to which greening whitened, richened, and raised rents in Prospect Park neighborhoods varied, in part, due to the variations in ease of park access and pre-existing demographics noted above.

Does greening whiten? In the period from the 1990 census until the American Community Survey estimates in 2005/9, the population of Brooklyn increased by about ten percent. The populations of all five park neighborhoods also grew; Park Slope, Prospect Heights, Lefferts Gardens and Prospect Park all grew by around 8 percent, Windsor Terrace grew the most, at 19 percent.

Racially, Brooklyn became less "White" and less "Black." In 1990 almost 47 percent of the Brooklyn population was white and the most recent figure is 44 percent. For blacks, the percentages are 38 percent and 35 percent, respectively. These figures probably reflect changes in the data collection method, since now respondents must respond "white only" and "black only" in an effort to identify the increasing biracial population. Also, the Hispanic and Asian populations of Brooklyn increased during this time. Despite the borough-wide decreases in whites (a 5 percent drop over time), around the Park the percentage of whites increased in three of the five neighborhoods (Prospect Heights, Lefferts Gardens, and Prospect Park South). The population of whites in these neighborhoods increased by 109 percent, 98 percent,

Table 6.2. Demographic Changes in Brooklyn, 1970–2005/9

	Brooklyn	*1970*	*1980*	*1990*	*2000*	*2005/9*	*% Change 1990-2005/9*
	Population	2,602,012	2,230,936	2,300,664	2,465,326	2,538,140	10.3%
Race	White	73.8%	56.0%	46.90%	41.2%	44.4%	–5.3%
	Black	25.2	32.4%	37.9%	36.4%	34.7%	–8.4%
Class	Median household income (1999 $)	25,000-49,999	$27,414	$34,508	$32,135	$33,310	–3.5%
	Families below poverty line	13.9	15.5%	19.5%	22.0%	18.6%	–4.6%
Social Power	Bachelors degree or higher	27	11.6%	16.5%	21.9%	28.3%	71.5%
Housing	Owner occupied housing units	24	23.4%	26.1%	27.1%	30.8%	18.0%
	Median gross rent (1999 $)	$300 or more	$460-$573	$608	$650	$759	24.8%
	Median single family owner occupied home value	50,000 or more	not available	$248,052	$229,200	$424,931	71.3%

Notes: There are some differences among the years: For 1970, the college rate is inflated. The category reported here is for percentage "college," which could include only some college. For other years, it is BA or higher. For 1970, median family income is calculated from aggregated data, thus only a range is available. For 1980, the Bachelors degree or higher is based on those responding that they had completed "4 or more years" college. For 1990, the median value is for "specified owner occupied housing." This exclude "housing units in multi-unit buildings" and therefore is probably a higher report. For 2000 and 2005/9, white = "white alone" and black = "black alone." Sources: Social Explorer, 1980, 1990, 2000, and 2005/9 (American Community Survey).

Table 6.3. Demographic Changes in Park Slope, 1970–2005/9

	Park Slope	*1970*	*1980*	*1990*	*2000*	*2005/9*	*% Change 1990-2005/9*
	Population	37,068	29,255	28,767	28,272	30,960	7.6%
Race	White	86.8	79.5%	81.9%	79.5%	81.6%	–0.4%
	Black	10.9	11.0%	9.2%	7.5%	6.4%	–30.4%
Class	Median household income (1999 $)	25,000-49,999	$37,829	$60,311	$68,580	$83,566	38.6%
	Families below poverty line	11.8	6.7%	4.6%	2.6%	2.5%	–45.7%
Social Power	Bachelors degree or higher	51.9	43.4%	63%	73.5%	79.4%	25.2%
Housing	Owner occupied housing units	17.1	19.6%	35.2%	37.9%	49.0%	39.2%
	Median gross rent (1999 $)			$840	$1,006	$1,274	51.7%
	Median single family owner occupied home value	50,000 or more	not available	$584,997	$387,344	$696,152	19.0%

Notes: There are some differences among the years: For 1970, the college rate is inflated. The category reported here is for percentage "college," which could include only some college. For other years, it is BA or higher. For 1970, median family income is calculated from aggregated data, thus only a range is available. For 1980, the Bachelors degree or higher is based on those responding that they had completed "4 or more years" college. For 1990, the median value is for "specified owner occupied housing." This exclude "housing units in multi-unit buildings" and therefore is probably a higher report. For 2000 and 2005/9, white = "white alone" and black = "black alone." Sources: Social Explorer, 1980, 1990, 2000, and 2005/9 (American Community Survey).

Table 6.4. Demographic Changes in Prospect Heights, 1970–2005/9

	Prospect Heights	*1970*	*1980*	*1990*	*2000*	*2005/9*	*% Change 1990-2005/9*
	Population	29,740	24,246	23,779	23,734	25,597	7.6%
Race	White	36.3	16.0%	18%	21.3%	37.9%	109.4%
	Black	61.1	76.9%	74.3%	64.2%	46.5%	–37.4%
Class	Median household income (1999 $)	25,000-49,999	$22,916	$38,252	$41,618	$47,458	24.1%
	Families below poverty line	17.1	25.6%	18.3%	16.3%	12.9%	–29.5%
Social Power	Bachelors degree or higher	35.5	13.3%	29.6%	38.8%	49.4%	66.9%
Housing	Owner occupied housing units	6.9	8.6%	18.0%	18.6%	27.1%	50.6%
	Median gross rent (1999 $)			$614	$730	$865	40.9%
	Median single family owner occupied home value	50,000 or more	not available	$399,969	$237,962	$419,436	4.9%

Notes: There are some differences among the years: For 1970, the college rate is inflated. The category reported here is for percentage "college," which could include only some college. For other years, it is BA or higher. For 1970, median family income is calculated from aggregated data, thus only a range is available. For 1980, the Bachelors degree or higher is based on those responding that they had completed "4 or more years" college. For 1990, the median value is for "specified owner occupied housing." This exclude "housing units in multi-unit buildings" and therefore is probably a higher report. For 2000 and 2005/9, white = "white alone" and black = "black alone." Sources: Social Explorer, 1980, 1990, 2000, and 2005/9 (American Community Survey).

Table 6.5. Demographic Changes in Lefferts Gardens, 1970–2005/9

	Lefferts Gardens	*1970*	*1980*	*1990*	*2000*	*2005/9*	*% Change 1990-2005/9*
	Population	35,172	34,758	39,368	36,842	36,119	–8.3%
Race	White	41.9	6.9%	3.7	3.6%	8.3%	97.8%
	Black	56.1	87.4%	92.3%	89.3%	83.5%	–9.5%
Class	Median household income (1999 $)	25,000-49,999	$27,540	$37,326	$30,709	$32,195	–13.7%
	Families below poverty line	9.9	14.9%	15.7%	20.9%	15.5%	–1.3%
Social Power	Bachelors degree or higher	44.4	11.5%	16.2%	15.7%	24.5%	51.2%
Housing	Owner occupied housing units	11.2	11.4%	13.5%	13.5%	10.9%	–19.3%
	Median gross rent (1999 $)			$614	$632	$737	20.0%
	Median single family owner occupied home value	50,000 or more	not available	$260,029	$224,634	$525,835	102.2%

Notes: There are some differences among the years: For 1970, the college rate is inflated. The category reported here is for percentage "college," which could include only some college. For other years, it is BA or higher. For 1970, median family income is calculated from aggregated data, thus only a range is available. For 1980, the Bachelors degree or higher is based on those responding that they had completed "4 or more years" college. For 1990, the median value is for "specified owner occupied housing." This exclude "housing units in multi-unit buildings" and therefore is probably a higher report. For 2000 and 2005/9, white = "white alone" and black = "black alone." Sources: Social Explorer, 1980, 1990, 2000, and 2005/9 (American Community Survey).

Table 6.6. Demographic Changes in Prospect Park South, 1970–2005/9

	Prospect Park South	*1970*	*1980*	*1990*	*2000*	*2005/9*	*% Change 1990-2005/9*
	Population	40,828	44,856	55,775	53,352	51,236	–8.1%
Race	White	92.1	24.0%	13.6%	11.2%	17.9%	31.6%
	Black	56.1	59.6%	74.5%	70.6%	65.3%	–12.3%
Class	Median household income (1999 $)	25,000-49,999	$26,355	$35,656	$28,540	$32,288	–9.4%
	Families below poverty line	7.3	21.7	18.0%	26.1%	21.9%	21.7%
Social Power	Bachelors degree or higher	46.9	13.6%	15.4%	13.1%	22.5%	46.1%
Housing	Owner occupied housing units	6.9	6.7%	8.70%	8.4%	10.3%	18.4%
	Median gross rent (1999 $)			$650	$673	$767	18.0%
	Median single family owner occupied home value	50,000 or more	not available	$309,667	$242,374	$433,556	40.0%

Notes: There are some differences among the years: For 1970, the college rate is inflated. The category reported here is for percentage "college," which could include only some college. For other years, it is BA or higher. For 1970, median family income is calculated from aggregated data, thus only a range is available. For 1980, the Bachelors degree or higher is based on those responding that they had completed "4 or more years" college. For 1990, the median value is for "specified owner occupied housing." This exclude "housing units in multi-unit buildings" and therefore is probably a higher report. For 2000 and 2005/9, white = "white alone" and black = "black alone." Sources: Social Explorer, 1980, 1990, 2000, and 2005/9 (American Community Survey).

Table 6.7. Demographic Changes in Windsor Terrace, 1970–2005/9

	Windsor Terrace	*1970*	*1980*	*1990*	*2000*	*2005/9*	*% Change 1990-2005/9*
	Population	22,890	20,522	19,743	20,545	23,571	19.4%
Race	White	99	86.0%	80.2%	69.6%	74.3%	–7.4%
	Black	0.7	5.1%	8.90%	8.8%	6.3%	–29.2%
Class	Median household income (1999 $)	25,000-49,999	$33,418	$44,884	$48,052	$55,577	23.8%
	Families below poverty line	6.6	11.4%	6.7%	7.7%	10.3%	53.7%
Social Power	Bachelors degree or higher	33.4	14%	29.3%	40.7%	52.0%	77.5%
Housing	Owner occupied housing units	27.1	27.1%	35.7%	35.2%	49.2%	37.8%
	Median gross rent (1999 $)			$682	$788	$889	30.4%
	Median single family owner occupied home value	50,000 or more	not available	$237,969	$227,076	$477,276	100.6%

Notes: There are some differences among the years: For 1970, the college rate is inflated. The category reported here is for percentage "college," which could include only some college. For other years, it is BA or higher. For 1970, median family income is calculated from aggregated data, thus only a range is available. For 1980, the Bachelors degree or higher is based on those responding that they had completed "4 or more years" college. For 1990, the median value is for "specified owner occupied housing." This exclude "housing units in multi-unit buildings" and therefore is probably a higher report. For 2000 and 2005/9, white = "white alone" and black = "black alone." Sources: Social Explorer, 1980, 1990, 2000, and 2005/9 (American Community Survey).

and 32 percent respectively. These neighborhoods had relatively small percentages of whites in 1990 (18 percent, 4 percent, and 14 percent). The two neighborhoods whose white population percentage decreased (Park Slope and Windsor Terrace) already had high percentages of whites in 1980 (82 percent and 80 percent). The decline was very small for Park Slope (from 81.9 percent to 81.6 percent), but larger for Windsor Terrace (from 80 to 74 percent). In short, the overwhelmingly white neighborhoods around the park became slightly less white between 1990 and 2005, while the non-white neighborhoods became substantially more white. The whitening of Prospect Heights was particularly dramatic in this period.

In terms of the change in black population around the park, all of the five neighborhoods showed losses. The percentage decrease in black population in the borough overall was 8 percent; all of the neighborhoods surrounding Prospect Park had a higher percentage decrease. The three blackest neighborhoods in 1990 decreased by large percentages. Prospect Heights was 74 percent black in 1990 and by 2005/09 this percentage had decreased to 46 percent, a percentage change of 37 percent. Lefferts Gardens went from 92 percent black to 83 percent black, almost a ten percent decrease. Prospect Park South's black population also declined: from 74 percent to 65 percent, a 12 percent decline from 1990. The very white neighborhoods (Park Slope and Windsor Terrace), which already had small percentages of blacks, both had around 30 percent decreases in the percentage of blacks. In sum, even though the percentage of blacks declined in the borough, the neighborhoods around Prospect Park lost blacks at a far greater rate. By the end of the period of major Prospect Park restoration, Prospect Heights was no longer a majority black neighborhood. In the case of the restoration of Prospect Park as an urban environmental amenity, the census data support the claim that greening whitens.

Does greening richen? Income levels on Tables 6.2–6.7 are adjusted for inflation and reported in 1999 dollars. In Brooklyn, median household income declined from $34 thousand to $33 thousand over the 1990 to 2005/9 period. We see a pattern emerge around the park. The two whitest neighborhoods (Park Slope and Windsor Terrace) and the neighborhood experiencing the greatest "whitening" (Prospect Heights) have income increases, while the two blackest neighborhoods show income decreases (Lefferts Gardens and Prospect Park South). The median incomes of Lefferts Gardens and Prospect Park South are very close to that of Brooklyn's overall. Park Slope, which started with the highest median income ($60,000) had the highest percentage increase (39 percent) and the highest ending income in 2005/9 ($83,000). Windsor Terrace, which started with the second highest median income (around $45,000), increased 24 percent to almost $56,000. Prospect Heights

and Lefferts Gardens started similarly (around $37-$38,000), but they diverged over this period: Prospect Heights increased 24 percent to end at $47 thousand (well above Brooklyn's median), but Lefferts Gardens dropped 14 percent to end just below the borough median. Prospect Park South also declined by 9 percent over the period. This pattern of median income change reflects growing inequality and declining middle class nationally. The richest neighborhoods became richer, the poorest neighborhoods became poorer, and the neighborhood experiencing the most dramatic whitening also became much wealthier. In terms of poverty, Brooklyn has almost 19 percent of families below the poverty line in 2005/9. With the exception of Prospect Park South (22 percent below poverty), all of the neighborhoods are below that rate, with Park Slope having the lowest level (2.5 percent).

Greening appears to have richened three of the neighborhoods: Park Slope, Windsor Terrace and Prospect Heights. It did not richen Lefferts Gardens or Prospect Park South. Prospect Heights is an interesting case to explore. Why did it richen while Lefferts Gardens and Propsect Park South did not? Here the relationship between race and class would appear to be quite evident. Of the three majority black neighborhoods, the one that most dramatically lost black population (Prospect Heights), leaving it no longer majority black at the end of the 1990-2005/9 period, became substantially richer. The neighborhood adjacent to Prospect Park that experienced the smallest percentage of decrease in black population, Lefferts Gardens, had the largest decrease in median income in the same period.

Does greening raise rents (and home values)? The impact of urban environmental amenities on the trajectory of home values and rents is a primary engine of redistribution of environmental goods. Across the borough, controlling for inflation, median home values increased by 71 percent from 1990 to 2005/9. Values also increased around the park. The largest percentage gains were in Lefferts Gardens and Windsor Terrace, which outpaced the increases in Brooklyn, both at least doubling the median value. Lefferts Gardens exceeds Brooklyn's median value by over $100 thousand and Park Slope exceeds it by over a quarter million dollars (although the percentage of owner occupied homes in Lefferts Gardens is only 11 percent compared to Park Slope's 49 percent). Windsor Terrace exceeds the borough median by $50 thousand and Prospect Heights and Prospect Park South were around Brooklyn's median. The percentage of owner occupied housing units in Brooklyn increased over the period from 27 percent to 31 percent. All of the park neighborhoods also increased in percentage of owner occupied housing, with very high ownership rates in Park Slope and Windsor Terrace (both 49 percent). Lefferts Gardens and Prospect Park South were well below the Brooklyn average (11 percent and 10 percent respectively).

Another important indicator of housing value is median rent. In Brooklyn rents increased 25 percent over the 1990–2005/9 period. Lefferts Gardens and Prospect Park South track closely to Brooklyn's changes in median gross rent in terms of both actual dollar amounts and changes over time. Bigger increases and higher rents are seen in Windsor Terrace (30 percent increase), Prospect Heights (41 percent increase) and Park Slope (52 percent increase). In 2005/9, the median rent in Park Slope is $1274. In the case of Prospect Park restoration, urban greening appears to have raised rents.

During the period of major Prospect Park restoration as an urban environmental amenity, access to housing near that amenity became increasingly restricted to those situated higher on the socio-economic stratification pyramid. Although increases in median gross rent in Lefferts Gardens tracked below the increase for Brooklyn as a whole (20 percent versus 25 percent), the simultaneous decline in income in the blackest neighborhood surrounding Prospect Park during the same period indicates that it became increasingly difficult for Lefferts Gardens residents to remain in their neighborhood (as rising rents ate larger and larger shares of declining incomes).

CONCLUSIONS

As our model of green gentrification would predict, many former near-Prospect Park residents experienced reduced access to Brooklyn's premier green space as a result of park renewal efforts. As working-class and minority residents are progressively priced further back from environmental amenities, it becomes evident that urban greening and the reclaiming and renewal of urban environmental amenities are a broadly negatively redistributive policy. If not by intent, then by effect, urban greening tends to increase environmental inequality, reduce the access of poor and working class communities and communities of color to environmental amenities, and dissolve communities to make way for new, wealthier residents. The combination of market-forces in urban real estate, institutional and cultural racism, and urban environmental policy can be a powerful tool of urban renewal and urban removal, with the "greening" of urban areas becoming code for the "whitening" of neighborhoods. This is not to say that outcomes could not be different with appropriate policy interventions.

As calls for environmental justice expand from the focus on the distribution of environmental hazards to include demands for more equitable distribution of environmental amenities, processes of green gentrification have clear implications for community-based urban environmental justice groups seeking to generate more local environmental goods. The success of activists in poor

and working-class communities of color in achieving remediation of parks, waterfronts, or other local environmental amenities, or in gaining the establishment of new green-spaces in urban environments, is likely to be followed by the green gentrification processes examined here. Efforts at achieving community quality of life improvements may thus be converted into community disintegration outcomes, as urban growth machines seize upon greening as an opportunity for profit. Under such conditions, the restoration of urban environmental amenities might be properly viewed as an environmental bad, posing a greater threat to community stability than the siting of some LULUs. Environmental justice activists will therefore need to be vigilant to prevent green gentrification processes from turning their efforts on their heads.[7]

Policy that responds to public intervention can make a difference in the outcomes of green gentrification. In 2005, the Williamsburg-Greenpoint development on the northeast Brooklyn waterfront was approved by the Zoning Commission (see DeSena 2009). It is an important case to follow because "The zoning text change adopted by the Commission and the City Council includes a groundbreaking Inclusionary Housing program, reflecting recommendations made during the public review process. The program promotes affordable units in both rental and condominium developments, encourages preservation of existing affordable units, and targets affordable housing to a range of income levels." (New York City Department of Public Planning).[8]

Unfortunately, no such policy interventions were put in place in regard to the restoration of Prospect Park, and the trajectory of near-park neighborhoods indicates that affordable housing near Brooklyn's largest environmental amenity is rapidly waning. The renewal of Prospect Park, which used public and private funds, involved no redesignation of existing land uses (i.e., from industrial to residential or to public green space). As an existing island of newly attractive green space, the restoration project was less available to public intervention to preserve existing patterns of distribution of access to the amenity, and the fate of surrounding neighborhoods was left to real estate market forces. Although the park is under the jurisdiction of the city's Parks and Recreation Department, it is managed by the Prospect Park Alliance, which can make decisions about the park without public input (O'Neill 2011). One can only hope that the lessons from the distributional consequences of the restoration of Prospect Park will be utilized by other communities (such as Gowanus), as environmental restoration plans are proposed and implemented in their neighborhoods. Alternatively, the real estate profitability consequences of the restoration of Prospect Park will serve as a model of, and incentive for, residential displacement and upward distribution of access to urban environmental amenities, illustrating the viability of using

urban greening as a method of attack on the urban poor, working-class, and communities of color.

Often presented to the public as urban sustainability projects, the restoration of urban environmental amenities may in effect, be just the opposite. The concept of sustainability rest on the three pillars of ecological integrity, economic development, and social equity. If urban greening initiatives tend to decrease social equity, then they may be properly conceived as antithetical to the pursuit of urban sustainability. As the case of Prospect Park restoration illustrates, urban greening may whiten and richen as it redistributes environmental amenities upward, but it may not enhance urban sustainability from a social equity perspective.

ACKNOWLEDGEMENTS

The authors thank Dr. Lorna Mason and Ed Morlock of the Center for the Study of Brooklyn, Mike Jolley, Martyna Cieniewicz, and Alina Pavlova for essential data collection and support. The authors also thank Dr. Setha Low and her Public Space Working Group at the CUNY Graduate Center for their comments.

NOTES

1. There have been some studies that address aspects of environmental amenities. For instance, this line of thinking can be found in Robert Bullard's (1990) classic book, *Dumping in Dixie.* Though Bullard focused primarily on the distribution of "bads," he also writes that getting an area declared a Superfund Site is positive. Though ironic, being able to get this designation for a site ensure some commitment to cleanup. Bullard showed that Superfund sites were disproportionately listed in white communities. Similarly, the Environmental Protection Agency charged higher fines for polluters in white neighborhoods.

2. Similarly, the best jobs in the production process tend to be awarded to the already wealthier individuals, while the dirtiest and most hazardous jobs are reserved for the poor and people of color (Hurley 1995,; Pellow 2002). The poor and working-class therefore find themselves at the greatest environmental risk both on the job and at home, while the wealthy remain relatively protected in both locations (Szasz 1994). Managers tend to live at some distance from potentially hazardous production facilities, and usually upwind and upstream from industrial effluent flows. Workers tend to live close to production facilities, and downwind and down stream from effluent flows (Mumford 1934). Workers and their families are thereby exposed to carcinogens and other toxins resulting from production, while managers, owners and investors are not.

3. In terms of the siting of new potentially hazardous facilities, similar processes operate. Production facilities will tend to locate where land values are lowest in order to reduce construction costs. Lower land values will be found in precisely those locations where the poor and working-class can afford to live. Higher land values will be found where the upper and upper middle-class can afford to live in relatively environmentally sound locations. New environmental hazards are therefore likely to be placed in close proximity to the residential areas inhabited by those near the bottom of the stratification system. Those areas that are attractive as residential locations for those with the wealth to avoid environmental hazards are likely to be the least attractive locations for installation of new production facilities that are associated with increased environmental and public health costs. So, as environmental restoration proceeds, it shifts people of color and the poor and middle class out, draws wealthier whites in, then serves as a bulwark to protect the new residents from exposure to potential future environmental risks. The same real estate value-based processes that fuel urban gentrification of an environmentally restored neighborhood, act to distribute future environmental hazards away from the gentrified area and toward those locations where the less wealthy and people of color live.

The poor and working-class are concentrated in areas typified by high levels of environmental risk and low levels of wealth, and people of color are disproportionately represented among this socioeconomic group. Poor communities face limited economic options in terms of type of employment and remuneration from that employment. Concentrating the unemployed and underemployed in specific locations creates communities of economic desperation. Under such condition, poor and working-class communities are structurally coerced into accepting any economic development initiative promising an increase in local employment (Pellow 2002). As a result, poor communities are less free to reject specific proposals for the siting of production or disposal facilities within their communities than are wealthier communities where new employment opportunities are a less pressing concern. The less wealthy a community, the more likely it is to be accepting of new environmental hazards where those hazards come with the promise of economic benefit (Pellow 2002). It is not that poor communities are less concerned about the protection of their health and environment, but rather that they have less structural freedom to act on their environmental and health concerns when faced with the consequences of absolute poverty. Conversely, wealthy communities are no more environmental or health conscious than poor communities, but with little need for additional local economic development, they are more structurally free to prioritize their environmental and health values under conditions where their basic needs are already being met. Segregated residential housing patterns generate a spatial distribution of economic development need. Environmentally hazardous facilities will be most attractive to communities with the highest level of economic desperation (Gould 1991; Pellow 2002). The ability of wealthy communities to reject hazardous facilities due to low economic need (and greater political resources), combined with the desperation of poor communities for any increase in employment opportunity, reinforces both the downward distribution of environmental hazards, and the upward distribution of environmental amenities, increasing both the environmental protection of the rich and the environmental degradation of the poor.

4. On a microlevel, the creation of community gardens have been shown to increase neighborhood property values in New York City by as much as 9.4 percent within 5 years (Voicu and Been 2008), although the implications for subsequent neighborhood stability have not been systematically explored.

5. This process has been documented in environmental justice struggles elsewhere in New York City (Sze 2006).

6. This brief history is compiled from *The Complete Illustrated Guidebook to Prospect Park and the Brooklyn Botanic Garden,* 2001, New York: Silver Lining Books and the Prospect Park Alliance's website (www.prospectpark.org).

7. For revision: draw ties to other in situ environmental processes, such as tourism and natural resource extraction.

8. The New York City Department of Housing guidelines defined low-income housing (in 2005) as a maximum income of $37, 675 for a one-bedroom apartment, at a rent of $877 per month. To qualify for a one-bedroom moderate-income unit, the maximum income is $58,875, with a rent of $1,407 per month.

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