Urban Nature and Sense of Belonging: Photo-Narrative Exploration of Socio-Spatial Disparities in New York City

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Abstract

Drawing from a participatory action research (PAR) project in the South Bronx that used photography, writing, and mapping (through photo-geotagging) as diverse platforms for storytelling, this article explores the role that urban nature may play in Bronx Community College students' sense of belonging to their surrounding communities and to New York City in general. In bi-weekly workshops over an academic year, seven students (also referred to as "participant-researchers") received training in, and engaged with, PAR methodology, photography, and visual analysis. Analysis of the ways in which participant-researchers engaged with photographic and narrative processes over time allowed for exploration of master narratives that the students affirmed, objected, or challenged through their storytelling about their own communities. One common dichotomy in students' stories was "nature and concrete jungle." Through visual and narrative analysis, we interrogated this dichotomy by exploring the ways in which socio-spatial exclusionary practices were enacted in students' narrating about urban nature. The contrasting ways in which the young people positioned urban nature, joined with their perception of themselves and their communities as "one side of the two cities," raise questions about the role of nature as yet another vehicle that promotes othering *between privileged and underprivileged communities. Interpreting our findings through an urban green equity framework, we suggest that to promote equity in multicultural urban settings, it is not enough to increase accessibility to nature. Improving access to urban nature should be joined with initiatives that aim at fostering a sense of community and belonging to these spaces, and to the broader city- and society-wide structures.* Key Words: Urban green equity—Photovoice—Inequality—Community—Participatory action research—Exclusion

Introduction

Contemporary urban landscapes are characterized by socio-spatial inequalities that may translate into landscapes of exclusion (Sibley, 1995). Exclusion can take place at various scales ranging from the individual to the systemic, structural level. Individual-level exclusion that contributes to "*othering*" of people manifests itself in intentional or unintentional, overt or symbolic discriminatory acts. For example, on May 25th, 2020, a racially-charged incident occurred in the birdwatching area of New York City (NYC)'s Central Park where it is required that dogs are leashed.

During the incident, which was caught on video, a White woman calls the police on a Black birdwatcher who politely asked her to leash her dog. The woman can be heard saying she is being "threatened by an African-American man," when the situation was clearly a non-emergency where no threat existed. This conflict is an unfortunate example of an individual using the police to target People of Color. Further, it raises important questions about how perceptions of belonging within public spaces may be linked to the unequal

distribution of power and resources in multicultural urban environments, which may be more insidious than conflicts at the individual scale.

It is the socio-spatial exclusionary practices that are embedded within the structural fabric and daily rhythms of cities that we intend to draw attention to in this work, which explores the role that urban nature plays in community college students' sense of belonging within NYC.

Belonging is often regarded as a fundamental human need that can be met through social bonds with friends, family, community (Baumeister & Leary, 1995), and even connectedness with nature (Moreton, Arena, & Tiliopoulos, 2019). The present exploratory study contributes to a growing body of work investigating feelings of belonging within the context of urban nature (Pipitone & Jović, 2021; Powers et al., 2021; Powers, Webster, Agans, Graefe, & Mowen, 2022).

Our work is exploratory in the sense that it was part of a year-long participatory action research (PAR) project that invited seven Bronx Community College (BCC) students to share their perspectives on communities that mattered to them, what they perceived as assets and challenges, and how they saw their role in the existing state of affairs. Using photography and narrative to direct the gaze toward issues of importance, the overarching goal of this project was to foster students' sense of agency and ownership over the communities that are part of their everyday lives.

Thus, this study was not designed to directly engage students with or elicit perspectives on urban nature from our participant-researchers; rather, these perceptions emerged as the project progressed and students began to engage with their experiences of systemic inequities in NYC. In this article, we discuss the ways in which socio-spatial exclusionary practices were represented and/or implied in students' photo-narrating about urban nature.

Given recent research that suggests feelings of belonging within urban parks may be associated with positive intergroup contact quality and quantity (Powers et al., 2021, 2022), it is important to understand the factors that contribute to people's sense of belonging in multicultural urban environments. The ever-increasing mobility and diversity in urban contexts, joined with the revived racial reckoning the United States has been experiencing over the past few years, make it imperative to focus on efforts that may foster positive intergroup relations. Facilitating accessibility and a sense of belonging to urban nature may be one of the less contentious gateways toward that important social goal in diverse cities such as NYC.

Diversity and disparity in NYC

Socioeconomic and spatial inequalities are particularly observable in NYC, where the current project took place. According to 2020 census data, NYC is ranked the seventh most segregated city (with a population of 200,000 and above) in the United States (U.S. Census Bureau, 2021). Located on the northeastern coast, NYC boasts a population of over 8.3 million, making it the largest city in the nation. NYC is a diverse city with roughly 43% of its residents identifying as White, 30% as Hispanic or Latino, 25% as Black or African American, 14% as Asian or Pacific Islander, and 4% as two or more races.

The city-wide median household income is $69,407 (U.S. Census Bureau, 2021); however, there are notable income disparities within and across NYC's five boroughs (i.e., Brooklyn, Bronx, Manhattan, Queens, and Staten Island). For example, the median household income in the Bronx is $40,088 compared with $86,553 in Manhattan, but areas within Manhattan can range from nearly $30,000 to $250,000.

When it comes to the distribution of urban nature in NYC, disparities abound. A recent study by the Trust for Public Land (2021) revealed that NYC communities of color have, on average, 33.5% less park space per person within a 10-min walk from their homes compared with White communities; however, low-income communities have 21.2% less park space per person compared with higher-income communities (Trust for Public Land, 2021). Figures 1 and 2 provide a visual presentation of the median annual income (Fig. 1) and percentage of People of Color (Fig. 2) by zip code along with the distribution of NYC Parks and natural areas (as defined by the Natural Areas Conservancy). Thus, NYC serves as an excellent project site to explore the ways in which perceptions of differential access to desired resources, such as urban green spaces, may shape people's notions of their position within society.

Conceptions of and engagement with urban nature

Conceptions and meanings of nature vary across disciplines, geographical locations, and cultures (Cronon, 1996; Kelley, Pendras, & Minnella, 2012; Taylor & Hochuli, 2017). These differences range from idealized notions of pristine wilderness as nature to viewing cities as a type of natural landscape. Within the context of this work, our conceptualization of nature may be described as a relational-materialist approach that considers the geophysical, grounded materiality of nature alongside dynamic sociocultural processes intertwined with it. We use the term "urban nature" to refer to areas of the urban landscape that contain urban vegetation, broadly defined, such as public parks, community gardens, tree-lined streets and sidewalks, and other ways that nature may be encountered or experienced in everyday urban life.

This broad definition of urban nature aligns with research that suggests urbanite's conceptions of nature go beyond spending time in typical parks and greenspaces (Kelley et al., 2012; McEwan,

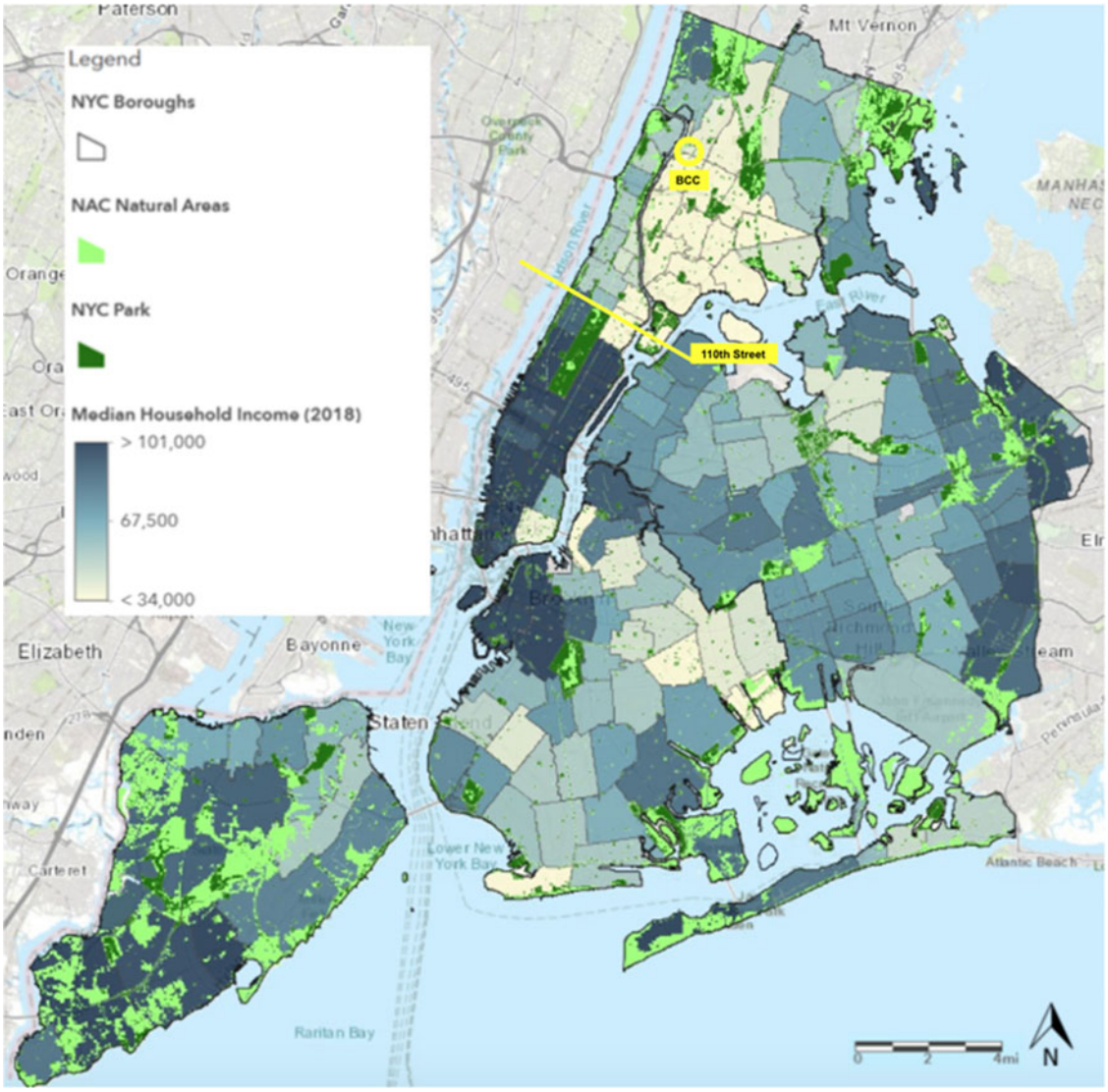


Fig. 1. Median household income of NYC by zip code based on the American Community Survey 1-year estimates (2018) alongside NYC parks and natural areas. Natural areas as defined by the Natural Areas Conservancy; also, please note that maps included in this article are not inclusive of all other kinds of urban green spaces such as green streets, community gardens, and street trees. BCC and 110th Street are important locations referenced throughout the article, and are marked on both Figure 1 and 2. BCC, Bronx Community College; NYC, New York City.

Ferguson, Richardson, & Cameron, 2020; Richardson, Hamlin, Butler, Thomas, & Hunt, 2022). For example, Kelley et al. (2012) engaged high school students in a participatory sketch mapping activity to explore places they felt connected to nature on their route to school as well as in the larger city of Tacoma, Washington.

Unexpectedly, nearly 80% of places students felt connected to nature extended beyond what the authors refer to as conventional natural features (e.g., parks, trees) and into unconventional natural spaces that acted as hubs of socio-cultural activity (e.g., bus stops, public gathering places and social hubs, iconic elemental landmarks).

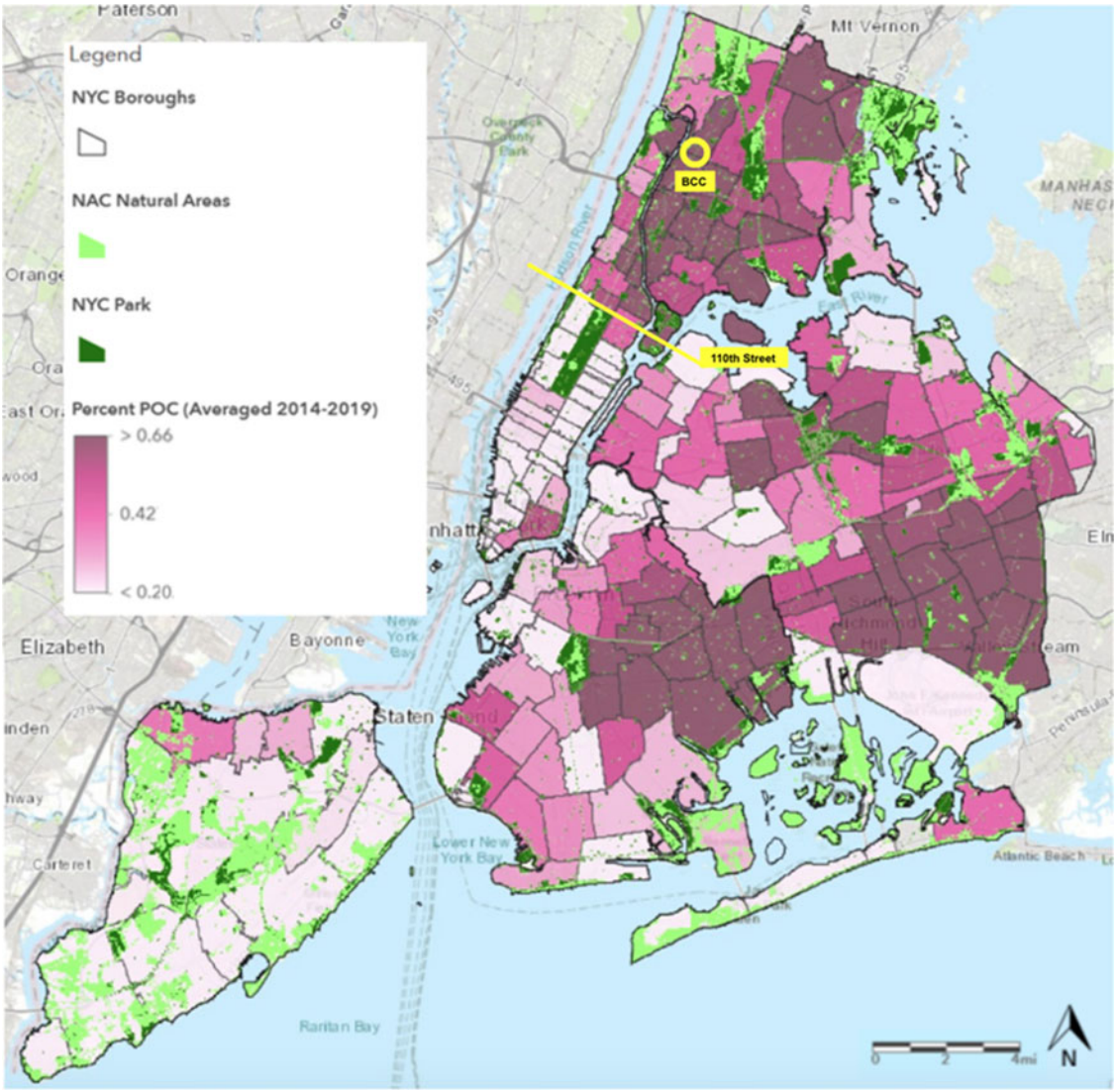


Fig. 2. Percent of people of color averaged across a 5-year span based on the American Community Survey (2015–2019) along with NYC parks and natural areas.

The findings of their work suggest that places that young people connect with nature in urban landscapes "transcend common distinctions between 'natural' and 'built' environments" (Kelley et al., 2012, p. 890).

This transcendence of natural-built dualisms is further demonstrated by research that suggests actively noticing urban nature, as opposed to passively spending time in nature (i.e., hearing a bird vs. listening to a bird), promotes higher feelings of connectedness to nature as well as improvements in mental health (McEwan et al., 2020; Richardson et al., 2022). For example, McEwan et al. (2020) prompted adults living in Sheffield, the United Kingdom who experience mild to moderate anxiety and/or depression to notice and write about the good things about urban nature over a 7-day period.

From participants' entries, researchers identified three major themes, including: encountering wildlife in everyday urban settings (e.g., roads), gratitude for street trees, and awe at expansive and dramatic skyscapes (e.g., from rooftops). Some participants also reported feelings of relaxation, tranquility, escape, and feeling refreshed while actively noticing nature across the day-to-day urban landscape, which aligns with findings that suggest nature contact has psychological, as well as physical and social benefits.

The physical, mental, and public health benefits provided by urban nature are well documented in the literature, including promoting physical activity and improving mood (Kondo, Fluehr, McKeon, & Branas, 2018; van den Bosch & Sang, 2017), decreasing stress (Hunter, Gillespie, & Chen, 2019; Ulrich et al., 1991; Van Den Berg, Hartig, & Staats, 2007), fostering social cohesion (Jennings & Bamkole, 2019; Rugel, Carpiano, Henderson, & Brauer, 2019), and elevating well-being (Nath , Han, & Lechner, 2018; Tsai et al., 2018).

Taken together, the overall ecosystem services provided by urban nature have the potential to enhance the resilience of urban populations (Campbell, Svendsen, Sonti, & Johnson, 2016; Samuelsson, Barthel, Colding, Macassa, & Giusti, 2020). This can give rise to vital importance during times of crisis, such as during the COVID-19 pandemic, which has emphasized the importance of people's engagement and relationship with urban nature (Geng, Innes, Wu, & Wang, 2021; Grima et al., 2020; Lopez, Kennedy, Field, & McPhearson, 2021; Pipitone & Jović, 2021; Ugolini et al., 2020; Venter, Barton, Gundersen, Figari, & Nowell, 2020).

However, who and how much people benefit from urban nature depends on several interrelated factors, including structural differences within urban landscapes (e.g., accessibility and quality of urban nature), and individual and cultural differences within diverse populations (e.g., perceptions and preferences of urban nature) (Lopez et al., 2021; Loukaitou-Sideris & Sideris, 2009; Pipitone & Jović, 2021). It has also been argued that cultural histories of park-making (e.g., segregated park systems; imbalances in planning power by race and income; funding), as well as land-use systems (e.g., zoning and property taxes) may contribute to lack of access and feelings of exclusion for People of Color (Byrne, 2012; Rigolon & Németh, 2020). It is these structural differences related to inclusion/exclusion that placed the concept of belonging at the center of our inquiry.

Sense of belonging and urban nature

Sense of belonging is a suitable concept to study the relationship between the self and society because who is perceived to belong, and who perceives themselves to belong, plays an important role in the production of social spaces (Lefebvre, 1974/1991; Sibley, 1995). A sense of belonging builds as we move, engage, and make meaning within our surrounding environments (Leach, 2005). Although belonging may be person-centered, it is also complex, dynamic, and allows for understanding social structures as actively lived (May 2011).

This is important because people's relationship with social spaces, such as urban green spaces, is not static, but rather dynamic and in constant flux; Manzo (2003) depicts this relationship well: even though "our experiences with places are felt on a deeply personal level, they are products of a larger political, social, and economic reality" (p. 55). Thus, belonging is about more than just an individual's "feelings" about a place; it is also about who and on what grounds is included/excluded from the reflexive arguments that contribute to changes in society, and the effects that such inclusion/exclusion have on people's sense of self.

Taken together, we conceptualize "sense of belonging" as a psychological experience that is dynamic and intertwined with the broader socio-political landscapes of cities (Pipitone & Jović, 2021). Our conceptualization extends beyond an individual's emotional "feeling" of belonging by acknowledging its political element of claim-making and representation within urban nature and throughout the urban landscape (Bell, 1999; Miller, 2003; Scheibelhofer, 2007).

It is important to note that across the social sciences, differing definitions and applications of belonging abound (Mattes & Lang, 2021). This may be explained, in part, because belonging is a complex and multidimensional concept that is thought to be related to, or even play a role in, concepts such as social cohesion, place attachment, and ecological place meaning. Social cohesion or sense of community, which is generally studied within the context of the neighborhood or community at large, is understood to be associated with feelings of trust, acceptance, and belonging with one's surroundings (Gomez, Baur, Hill, & Georgiev, 2015; Jennings & Bamkole, 2019; Rugel et al., 2019). Recent research suggests that even the mere presence of urban parks—regardless of visitation—may play an important role in fostering a psychological sense of community (Gomez et al., 2015) and enhancing place attachment (Campbell et al., 2016).

Akin to belonging, there are varying definitions and measures of place attachment (Lewicka, 2011). Place attachment is generally understood as one's emotional connection to a place (Altman & Low, 1992) and has also been associated with people's tendency to stay close to places where they feel comfortable and secure (Hidalgo & Hernandez, 2001). Further, how attached we are to places may also be informed by symbolic meanings we ascribe to them.

Russ, Peters, Krasny, and Stedman (2015) use the term ecological place meaning to refer to the ways in which people ascribe value to an environment based on the ecosystem services it provides. In their research with environmental educators in the Bronx (Russ et al., 2015), they found that ecological place meaning was being cultivated through programming that helped students appreciate ecological aspects of NYC and imagine what could be improved through direct experiences with their surroundings. Although ecological place meaning focuses more on fostering awareness of one's environment, increasing awareness of urban nature may be an important first step in fostering feelings of belonging and working toward meaningful change.

Experiences of social exclusion and inequality have been linked to deleterious impacts on people's health and well-being, whereas social inclusion and a sense of belonging are related to resilience (Mattes & Lang, 2021). Thus, we embrace a critical and socio-cultural view of belonging as dynamic, and interactive because it allows for an appreciation of its multidimensionality. Belonging is not just about feeling "othered" by people's attitudes (e.g., positive or negative prejudices) about "people like them," but also about feeling "othered" by racial and socio-spatial inequalities within their cities (e.g., access to and quality of urban nature in one's community compared with other areas). Thus, the pathways and implications of inclusion/exclusion are both psychological and political in nature.

Urban nature: An equity perspective

To disentangle the ways in which accessibility and engagement with urban nature may relate to feelings of inclusion/exclusion within and across city landscapes, we turn to the framework of urban green equity proposed by Nesbitt, Meitner, Sheppard, and Girling (2018); Nesbitt, Meitner, Girling, Sheppard, and Lu, (2019b). Urban green equity, an important mediator in people's relationship with nature, is defined as "fair access to and governance of urban vegetation regardless of differentiating factors such as socioeconomic status, race, culture, or age" (Nesbitt et al., 2018, p. 241) and includes two principal dimensions: distributional equity and recognitional equity.

Distributional equity. The spatial distribution of urban nature, which is inclusive of the sub-dimensions of temporality (e.g., historical context; seasonality; leisure time), condition and preference (e.g., quality of urban vegetation; sociocultural landscape preferences), and ownership (e.g., public vs. private land), is referred to as distributional equity within Nesbitt et al.'s (2018) framework. In the United States, the distribution of urban nature is unequal within and across urban environments (Landry & Chakraborty, 2009; Nesbitt et al., 2019b; Nyelele & Kroll, 2020; Rigolon, Browning, & Jennings, 2018; Trust for Public Land, 2020, 2021; Zhou & Kim, 2013).

For example, spatial analysis of urban vegetation and trees in 14,000 U.S. cities and towns has indicated that parks serving People of Color are half as large and nearly five times as crowded as parks in majority White-communities, whereas parks serving low-income households are a quarter as large and nearly four times as crowded as those in high-income neighborhoods (Trust for Public Land, 2020). Less access, which is an exclusionary practice at the structural level, translates into fewer opportunities to reap the quality-of-life benefits associated with nature experiences, which may be of particular relevance for young people.

Existing disparities in health-related quality-of-life among youth of color and low-income youth compared with their White and wealthier counterparts (Wallander et al., 2019) suggests that increasing access to nearby nature may be one way to promote health and well-being in these populations.

Recognitional equity. Separate but related to distributional equity is recognitional equity, defined as the "acknowledgement of participants' difference, existence and validity in decision-making processes, both formal and informal, and the inherent inclusion and power associated with that acknowledgement" (Nesbitt et al., 2018, p. 1). Although beyond the scope of this article to review, it is worth mentioning that recognitional equity has some overlap with how procedural justice is understood in the environmental justice sphere.

Like distributional equity, within the urban green equity framework, recognitional equity has several interrelated sub-dimensions, including representation (e.g., inclusivity in decision-making), procedure (e.g., welcome consideration of diverse voices and views), desire to participate (e.g., motivation to be engaged civically), and ability to participate (e.g., opportunities to engage in community meetings, stewardship). At its core, recognitional equity embodies differing levels of governance and ownership; in this context, ownership is not meant in a legal sense, but rather as having a "sense of place" within urban nature and the surrounding decision-making process (Nesbitt, Meitner, Girling, & Sheppard, 2019a, p. 9). Thus, who is included/excluded from, and represented within, urban nature is related to recognitional equity.

For example, urban forest practitioners across three multicultural cities, including NYC, identified sense of ownership (or lack thereof) as a barrier to achieving recognitional urban green equity in their city (Nesbitt et al., 2019a). In our previous study of New Yorkers' engagement with urban green spaces, we uncovered similar findings: Distributional equity was a prominent explanation for a

weaker sense of belonging to urban green spaces, whereas access to recognitional equity played a significant role in participants' explanations of a stronger sense of belonging (Pipitone & Jović, 2021).

Further, research by Powers et al. (2022) suggests to foster a sense of belonging in urban parks, and cities should focus on increasing engagement and representation (e.g., inclusive programming, actively seeking input in decision-making). Together, these findings have led us to argue that a sense of belonging warrants further study within the context of urban green equity, as it may be both an effect of and a contributing factor to socio-spatial inequality in urban environments.

The present inquiry

Drawing from a year-long, PAR project that used photography, writing, and mapping as diverse vehicles for storytelling, this work explores the role that urban nature plays in community college students' sense of belonging to their immediate communities and to NYC at large. Situated within the framework of urban green equity (Nesbitt et al., 2018, 2019b), we explore the ways in which people's notions of urban nature, including its quality and accessibility, among other characteristics, can play a role in fostering a sense of community and belonging to a place, or contributing to feelings of marginalization and disenfranchisement.

In this work, we are concerned with landscapes of exclusion that are part and parcel of the everyday rhythms of multicultural urban environments, with a focus on urban nature. Although our study engaged with students in NYC, our findings may be useful for environmental educators or city planners in multicultural areas who are interested in increasing urban green equity in their cities.

Method

Project site

This project took place at BCC, a sprawling tree-lined 45-acre campus that sits atop a hill overlooking the Harlem River in the Bronx. BCC is part of the City University of New York (CUNY) system and is located in the southern areas of the Bronx borough of NYC. South Bronx along with West Bronx constitute the poorest congressional district in the USA (New York's 15th congressional district) where an estimated 45% of youth under 18 live below the poverty line (U.S. Census Bureau, 2019). Ninety-seven percent of BCC students are students of color and the 3-year graduation rate was 21% in 2018, up from 7% in 2015 (Bronx Community College, 2018).

NarratingNYC research team

During the 2015–2016 academic year that this project took place, both authors were appointed as writing fellows at BCC. Our non-teaching role at the college put us in a good position to be able to do this extracurricular work with students in a democratic, non-coercive, and participatory manner. We recruited BCC students to partake in this project by attending a student club fair at the start of the Fall semester, presenting briefly what our project was about in various classrooms, and posting flyers around the campus.

The seven young people who volunteered to participate were students (and one former student) and received a small stipend for their year-long commitment to this project. All seven students (three young men and four young women) identified as students of color, lived in upper Manhattan or the South Bronx, and were between the ages of 18 and 21 with the exception of one participant who was in her mid-20s. Notably, at the end of the project, all participant-researchers provided oral consent for the use of their names and photographs in the dissemination of findings from this participatory project. This project was approved by the Pratt Institute IRB (No. 264/1-4-16).

Project design and approach

The portion of the data and the line of analysis we focus on in this article is an offshoot of a large community-based project, which took place over the course of an academic year. The overarching goal of the project, later dubbed *NarratingNYC* by the research team, was to explore BCC students' sense-making about what "community" means to them with the aim of fostering agency and a sense of ownership over the communities to which they belong. To best meet project aims, we rooted our project in the principles of PAR where we worked *with*, rather than on, about, or for the students (Cahill & Torre, 2007).

The PAR embodies the stance that those most intimately impacted by research should take the lead in shaping research questions, framing interpretations, and designing meaningful products and actions (Pain, 2004; Torre, Fine, Stoudt, & Fox, 2012), which is why we refer to the students as "participant-researchers" in our work. Integrated with our PAR approach was an adaptation of *photovoice*, a community-based participatory methodology originally established in the health sciences by Wang and Burris (1997) to engage the students in examining localized urban issues that are impacting their lives through photography and narrative.

A group of seven[1] BCC students participated in a series of audio-recorded bi-weekly 2-h workshops, where they received training in, and engaged with, PAR methodology, photography, and visual

[1]There were two additional students who participated at different points of the project; however, we included in the analysis only those students who completed all project assignments and participated in the final photo-exhibition.

analysis. The launching and overarching topic of these workshops was *community*—what community means to all of us, what are the most important communities in our lives, and so on. Students were instructed to take three photographs exploring a given (bi)weekly topic, and to explore the same topic through a narrative prompt.

Once students decided what they wanted to explore in the next meeting, as project facilitators, we would craft a writing prompt to accompany the photo-making. At the subsequent meeting, the discussion of each other's photographs would open the next topic that students found relevant to discuss within the context of the larger project mission: exploring their sense of community. Thus, with the exception of the first two introductory topics suggested by us to get the project started, all other topics explored were collectively identified and chosen by the entire research team.

The team dubbed these topics "photo-missions," and while we present them here as part of the description of our method, given the participatory nature of the project, they should also be regarded as data: It is these topics that inner-city students found most relevant for exploration of their sense of community and belonging to NYC. Table 1 presents all the missions in chronological order, alongside abridged descriptions of the mission prompts.

In summary, each week, students came up with the topic for the group's "photo narrative mission" (e.g., gentrification, sense of pride, serenity, sense of shame, ideal community) through collaborative decision-making, and as facilitators we constructed a writing prompt to engage them with that topic. In total, there were 13 missions that yielded more than 250 photographs taken throughout NYC. It was typical for topics to emerge organically following each team members' presentation of their photos and writing for that week, as the collective comparing and contrasting of each other's photos and writing for themes often resulted in a rich discussion. All the photographs were geo-tagged and subsequently mapped (using Google's now retired Picasa program), allowing us, as a team, to analyze how spatial preferences varied within and across missions and team members.

Near the end of the project, each participant-researcher completed a 30–45 min long individual exit interview with the authors, where they reflected on the project and on all of their photographs displayed at the same time; reviewed their geo-tagged map showing their movement around the city while taking photographs; and, finally, selected and sequenced their photos for the final exhibition. This project culminated in a photo exhibition for the BCC community, curated by the students, which featured photo sequences and artist statements for each participant-researcher.

Data and analysis

This project yielded multimodal data, including: more than 250 geo-tagged photographs, students' responses to 13 writing prompts, 15 audio-recorded bi-weekly meetings, and individual exit interviews. Audio recordings of bi-weekly team meetings and exit interviews were transcribed before analysis. A qualitative data analysis program, NVivo, was used for data organization and analysis. In the first phase, we engaged in a process of open, inductive coding (Strauss & Corbin, 1990) to analyze students' narratives, transcriptions, and photographs to identify overarching recurring themes.

It was during this phase that "urban nature" was identified as a recurring theme. In phase two, a more targeted analysis of urban nature was conducted by analyzing all narratives and photographs for references to urban nature. After multiple rounds of reviewing all data materials looking for recurring themes surrounding urban nature, we created a codebook of themes for further analysis. Examples of codes include: types of urban nature (e.g., playground, campus, trees, animals, community garden, backyard); function/purpose of urban nature (e.g., place to relax, escape); emotional reactions in nature (e.g., shame, pride, serenity), lack of care (e.g., litter, vandalism), and comparing/contrasting natures (e.g., by borough, types of nature). Although not the main focus of this article, photograph geo-locations were analyzed to determine spatial patterns in students' photo-making.

In the spirit of PAR, we intended to involve the young people in the data analysis and writing processes; however, due to time constraints and other commitments, their involvement beyond preliminary data entry, analysis, and interpretation was limited. To stay close to the data, which was generated with and by the students, we used patterns identified by the students themselves as the main arteries of subsequent analysis.

For example, the participant-researchers were responsible for inputting their geo-tags, reviewing their individual maps, and reviewing the map of the team's photo geo-tags. During preliminary analysis of the maps, the team noticed that most of their photographs were taken above 110th Street in Manhattan, also known as Central Park North. Thus, in our subsequent analysis of geo-tagged maps, we used Central Park North as a reference point by counting the number of photos above and below it, by both participant-researchers and by mission, to identify patterns. Any theme and any spatial or photo content patterns retained for the codebook had to be identified independently by both authors.

Findings and Interpretation

Using photography and narrative to direct the gaze toward issues of importance, our year-long project invited seven BCC students to

Table 1. (Bi)Weekly Project Missions Explored Through Photo-Making and Writing

PHOTO-NARRATIVE MISSION	DESCRIPTION/EXCERPTS FROM MISSION PROMPTS
1. Selfie and favorite thing	Taking pictures of themselves and of *something/someone else you find very, very important*
2. Most important communities	*What are the most important communities in your lives?*
3. Family	*Take 3 photos that represent family as a community to you.*
4. Gentrification	*Imagine that a major news outlet is planning to do a similar series,*[a] *and wants to collect YOUR story about experiences with gentrification in the city…*
5. Community college	*… To learn about the current state of affairs at the college, the president is inviting different stakeholders (faculty, staff, students) to share their experiences of BCC. Not everyone can be present at the meeting, so students are encouraged to write a letter. Please write your own letter to the president…*
6. Commute	*… We ask that you take 3 photos that represent your typical commute. Describe the departure point and the destination point. How do you think the place you hop on relates to the place that you get off the train (*e.g., *similarities and differences)?*
7. Serenity	*Take at least three photos of places or of something/someone that brings or represents peacefulness for you.*
8. Photo not taken	*… think about the photos you did not take while exploring these* [previous] *topics, whatever the reason is for not having taken it. To the extent you feel comfortable, try capturing at least 3 moments/photos that you haven't captured while exploring any of the previous topics.*
9. Sense of shame	*… take at least 3 photos of something that evokes the sense of shame/embarrassment… write what it is that you find embarrassing about what you captured with each photograph…*
10. Sense of pride	*… take at least 3 photos of something that evokes the sense of pride, or something that makes you feel proud in any of the communities you find important in your life (*e.g., *family, neighborhood, salon, school,* etc.*).*
11. Things I want to change	*… take at least 3 photos of things that you want to change within the important communities in your life.*
12. Ideal community	*… How do you envision a "perfect" community? Your task is to, bearing in mind all of the different communities of importance to you, take at least 3 photos that answer the following prompt: "I wish my community looked like this"…*
13. What shaped me	*…. take photos of the three things you think have played a crucial role in shaping who you are. Try capturing whatever it is that you think played an important role in you becoming who you are today…*

[a]This refers to a series of articles on gentrification published in *New York Magazine* during the term of the project.

BCC, Bronx Community College.

share their perspectives on communities that mattered to them, what they perceived as assets and challenges, and how they saw their role in the existing state of affairs. The broad nature of our aims at the outset was intentional, as it aligned with the project's rootedness in the principles of PAR; we wanted the students to be the driving force behind the research. Initially, we did not intend to study the relationship between urban nature and belonging; rather, this line of analysis emerged over time as students began to have more explicit discussions about socio-spatial disparities in NYC.

Therefore, before presenting findings specifically related to urban nature, it is necessary that we provide the reader with an overview of how students positioned themselves through their photo-narrating over time.

"Othering" as a master narrative

During the first months of the project, through their narrating, students were responding to master narratives about their communities—by acknowledging, questioning, and contesting them. This was illustrated in frequent remarks prefaced with phrases such as

"people think … " (e.g., "[that] the Bronx is not beautiful"; "[that] New York City is just Manhattan"). The young people's explorations appear to have been guided by a need to debunk or qualify these pervasive misconceptions about their communities. As the project developed, their narrating became increasingly more independent by (re)shaping the image of themselves and their communities on their own terms.

What we observed aligns with how Tatum (2003) describes identity development, in which the parts of ourselves that we notice are reflected back to us as "other" by dominant groups. By noticing and actively engaging with master narratives about what they and their communities are/should be like, the participant-researchers began to go beyond what they perceived as reflected back to them.

For example, during one of the meetings about a quarter of the way through the project, one student (Jason) stated, "it's like we are the one side of the two cities," in response to a photo activity. This statement prompted Jason's peers to express feelings of solidarity and prompted a discussion of disparities that had been made salient throughout photo missions and team conversations up to this point, which culminated in students collectively declaring themselves "the one side of the two cities." Indeed, NYC is a city that harbors some of the most affluent areas in the entire United States, as well as areas where half of the children live below the poverty line (U.S. Census Bureau, 2021).

This perspective of "otherness," or a city divided, became an inevitable lens that shaped the discussion of future topics by juxtaposing (and at times critiquing the juxtaposition between) the Bronx with Manhattan; People of Color with White; Working Class with Middle Class; Immigrant with Citizen; and Nature with Concrete Jungle. This collective engagement with and critique of "sides" of the city was a turning point in the project and ultimately provided the analytical lens we used to examine the ways in which urban nature was enacted in students' photo-narrating.

Urban nature enacted in students' photo-narrating

Enacted in students' narrating and photo-making about their communities were several themes related to urban nature. First, students' narrating often contrasted "nature" with "concrete jungle" within their communities as well as across NYC. Elements of urban nature were peppered throughout students' photo-narrative missions, including: street trees, parks, playgrounds, community gardens, backyards, vast skyscapes, and even the moon and animals. As previously mentioned, due to time constraints and alternative commitments, the participant-researchers were unable to contribute beyond preliminary data analysis.

With this in mind, we cannot assume that the students would consider all of the aforementioned elements "urban nature"; however, this would align with previous research that suggests that young people have broader and even unconventional views of urban nature (Kelley et al., 2012). Second, in addition to engaging with urban nature in their communities, the students also acknowledged and critiqued socio-spatial disparities regarding the aesthetics and maintenance of green spaces in their areas compared with other areas in the city (i.e., Manhattan below 110th Street) by raising questions that essentially asked, "what about us?"

Finally, urban nature was enacted in student photo-narrating most prominently in the "Ideal Community" mission. However, analysis of students' geo-tagged maps indicates that this mission was one of three where students traveled outside the radius of their communities to make the photos. In the following subsections, we present and discuss these overarching findings with a focus on the ways in which socio-spatial disparities and "othering" were represented and/or implied in students' photo-narrating.

Contrasting nature and concrete jungle. A prominent theme in students' photo-narratives and in our weekly meetings was the dichotomy of "nature and concrete jungle"; within this juxtaposition, nature was contrasted in two ways. First, the students' narrating about this dichotomy positioned urban nature as a restorative space for them to relax and escape or gain respite from the city, which mirrors recent research completed with young people in urban environments (Keith Given, Martin, & Hochuli, 2022; McEwan et al., 2020). Often, it was the BCC campus or city parks that were regarded as serene and restorative spaces:

> Sometimes it **feels like I am on my own private island away from the noisy overcrowded city** [on the BCC campus]. (Margie, *College as Community Mission*)

> For this prompt **I chose pictures of places that I've been to that don't really look like NYC** … I'm able to take advantage and **get away from people** and **relieve stress** in these places. I think my pictures **reflect a calm and quiet environment that really contrasts with the city experience of loud noises and people everywhere**. These places make it possible for me **to get away without actually getting away** … They are great places to just **relax**. (Jason, *Serenity Mission*).

As evidenced by the earlier narratives, the students perceive urban nature as a place to relax and restore, which aligns with the quality-of-life benefits that urban nature provides (Chawla, 2015; Nyelele & Kroll, 2020), particularly regarding mental health. This was also

evidenced by their geo-tagged maps, which demonstrated that the participant-researchers were willing to travel relatively far outside of their communities to construct their photo narratives for missions such as serenity and ideal community, which featured urban nature more prominently than other missions did (more on this later).

We interpret the students' positioning of some of the more secluded places on their campus as a relaxing environment, at least in part, because it is easily accessible when they are on-campus for classes (Fig. 3).

This brings us to the second way in which nature and concrete jungle was juxtaposed: The students' narrating also positioned urban nature as contrasting within the Bronx itself, as well as between the urban nature in Manhattan:

> I put these two *[photos]* together because, like, **we call NYC the concrete jungle, but then we have the Bronx Zoo** *[wow, wow everyone is saying how well the photos go together]* … then those are the gates to the Bronx Zoo and **you know, it's just like you have this nature, but the nature, it's like, closed off. And then you have buildings and cities** and, and **people say, "there are no trees in the Bronx"** but **it's such a contrast between natures.** You get it in the Botanical Gardens … the exotic stuff, then you step outside and **it's concrete with one little tree there barely hanging on to life** with just roads. (Margie, *Meeting 5 Transcript*)

In the quotation just cited, Margie is challenging an outsider's perspective—a master narrative—that "people say, there are no trees in the Bronx," which implies a comparison between the Bronx and other boroughs by pointing out that there actually *are* trees in the Bronx, but the quality of them ranges from "exotic stuff" that is "closed off" to streets that have "one tree barely hanging on to life." The examples Margie provides of urban green spaces with "exotic stuff" such as the New York Botanical Gardens and the Bronx Zoo are quite literally closed off in the sense that they are gated and require paid admission (except on Wednesday mornings); Margie positions these in stark contrast to the lack of care for urban vegetation surrounding some public roads.

Fig. 3. Urban nature as spaces of restoration: Nafisah's photo of the Hall of Fame on the BCC campus (top) and Jason's photo of a park that "Does Not Look like NYC" (bottom).

This starts to dig into structural inequities between boroughs—the Bronx is actually one of the boroughs with the most acres of public parks per person in the city (Trust for Public Land, 2018); however, the range in accessibility, quality, and maintenance of these spaces varies vastly. This further demonstrates that urban green equity is not just about *accessibility*, but also about *condition* and preference of urban vegetation as well sense of *ownership* and *recognition*—which is lacking if urban nature is perceived as "closed off"—throughout the urban landscape.

What about us?: "New York is not just Manhattan. It just isn't"

As the project progressed, the participant-researchers' engagement with socio-spatial inequalities throughout NYC became increasingly pronounced by their raising of questions, some of which essentially asked: what about us? For example, in the excerpt from the Meeting 5 transcript presented in the previous contrasting nature and concrete jungle section, the comparison between urban natures in the Bronx and other boroughs was implied; by Meeting 13, this comparison was explicit in Margie's comparison of the Bronx and Manhattan in the sharing of a talk she attended on NYC horticulture:

> MARGIE: … the project on the High Line [came up] and how it is privately funded, and that's why it looks so gorgeous. So, I was like, why, I asked him **"why can't we get that same kind of stuff in the Bronx?"** I mean, it's nice that it's in Manhattan, **but Manhattan already has so many beautiful things.** He's right that people gravitate toward green spaces, and more green space. Like Central Park, and now they gravitate toward the High Line and that's beautiful and not to sh*t on them or anything, but **New York is not just Manhattan. It just isn't.**
>
> JASON: but, what's funny is … the place with the most park space is … [interrupted]
>
> MARGIE: The Bronx! Pelham Bay Park [PBP] is the biggest park, **and even that isn't maintained. They leave it up to the city to do that stuff and how come that isn't privately maintained?** If you go to PBP the racoons, the skunks, they take control of that park. **And it's huge, it's beautiful** [interrupted]
>
> JASON: The **garbage, though** …

In this exchange, Jason and Margie are comparing the relatively recent construction of the High Line, a 1.45-mile elevated railroad track on Manhattan's West Side that was converted into a public park in 2009, with Pelham Bay Park in the Bronx, which is NYC's largest park. They also raise the question of public-private partnerships in the maintenance of parks across the city and essentially ask why the city is not more invested in Pelham Bay Park and other parks in the Bronx: "Why can't we get that stuff in the Bronx? […] New York is not just Manhattan. It just isn't." Further, they point out that Pelham Bay Park "isn't maintained," the animals "take control of the park," and that it is full of "garbage" and litter. This lack of care and maintenance of urban nature in their communities, such as litter, graffiti, and empty lots, were prominently featured sources of shame in the *Sense of Shame* mission:

> It disappoints me to see that **some people don't care about what our neighborhood looks like.** I have nothing against graffiti, and I have seen some really nice graffiti art in New York but this is not art. **I wish people would have more respect for our community.** (Margie, *Sense of Shame Mission*)

> There's an empty lot across the street from my building and I think it could be so much more beautiful. Some people clean it up and use it every once in a blue moon but **if th community would get together and clean it up and make it into a garden that would make it so much more beautiful.** When I'm walking to the train from school I see **growing trees with trash all on and in the dirt and I just wonder why?** When there's a trash can half a block down. **People complain about living in the Bronx but they are part of the reason it's so dirty.** (Nafisah, *Sense of Shame Mission*).

As demonstrated by the excerpts cited earlier, the participant-researchers showed increasing awareness of the systemic socio-spatial disparities affecting their lives in later photo missions. However, as we can see from Nafisah's and Margie's excerpts earlier, while considering the structural inequalities affecting their lives, the students did *not* deprive their communities of the agency they have over how urban nature is maintained. We do not want to deprive their communities of agency, either, in our interpretation of the data, but we need to point at the connection that exists between structural disinvestment and individual (disengaging) behavior (Blokland, 2008) (Fig. 4).

Ideal community: Green, but distant

Before we delve into the "Ideal Community" photo-mission, we first provide the reader with a brief overview of the topics explored leading up to the topic of "Ideal Community." Toward the end of the project, we set on a mission to explore "Photo Not Taken," which prompted the students to think about a *photograph(s) not taken* and *why they didn't take a photo*. The subsequent meeting revealed that the most common reason for deciding not to take a photograph was a sense of shame—they chose not to take photos of things that bring them shame.

Fig. 4. Urban nature as shameful: Margie's photo Graffiti playground photo (top); Nafisah's empty lot and littered tree (both on bottom).

Naturally, "Sense of Shame" became the next photo-mission we explored. A few weeks later, our photo-mission was "Things I Want to Change." Again, we provide this context so that the reader has a better understanding of the conditions before the topic of "Ideal Community," which came next, was explored. "Ideal Community" seemed to be our collective effort to counter the conversations about shame and discontent during the previous weeks.

The main takeaways from this photo-mission were that students' ideal communities were often not only defined by urban nature, but they are also farther from their everyday communities. Overall, the exploration of this topic appeared to instigate students' insights about inequities and community engagement. For example, in participant-researchers' narratives about their ideal community, urban nature was regarded as central to the health and prosperity of individuals as well as of the surrounding community and broader society:

> My ideal community is environmentally conscious … **We would live in a world where even in cities the people have some experience with nature.** This photo represents a small yet effective contribution my community has that helps the environment. This solar compactor increases the trash capacity of the bin and reports steps can be taken to help better our environment. An ideal community would have this on every corner along with other environmental projects that **help make the public work together and be more engaged, overall making a healthier and cleaner place to** live. (Jason, *Ideal Community Mission*)

> The first photo is of roof tops. I feel like in my neighborhood or even my campus **we should have some kind of access to the roofs.** It can be a chill zone, **have some plants up there, chairs, and maybe a radio** … The second photo is a community garden. This could be for either school or neighborhood. **I feel like a lot of communities should have gardens.** (Nafisah, *Ideal Community Mission*)

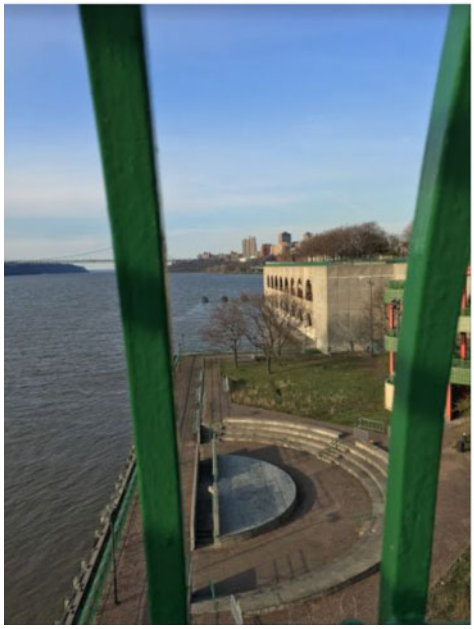
Jason and Nafisah's narratives cited earlier are illustrative of the participant-researchers' positioning of urban nature as valuable parts of their ideal community, not only as a place to "experience" nature together but also as a way to promote healthier communities through members' active and collective engagement for the greater good. Further, elements of urban nature featured in the earlier narrative

excerpts are both conventional (e.g., plants, community gardens) and unconventional (e.g., roof tops, a solar compactor), and they include elements of social interaction. This aligns with previous research that suggests that young people's conceptions of nature are often unconventional and tied to sociocultural activities (Kelley et al., 2012).

Interestingly, photos for the "Ideal Community" mission were geo-located not within their community, but farther outside of it and more spread out across Lower Manhattan compared with previous missions. Overall analysis of geotagged maps revealed that 250 out of 283 photographs were taken above 110th Street in Manhattan, also known as Central Park North. Stretching from the East River to Hudson River, 110th Street extends along the Northern border of Central Park.

This street roughly demarcates Upper Manhattan (Harlem, Washington Heights, and Inwood neighborhoods) and the Bronx ("the one side of the two cities") from the rest of Manhattan. Central Park North is a relatively good predictor of race and income in NYC, with a higher percentage of People of Color and lower-income neighborhoods north of 110th Street (refer to Fig. 2). The COVID-19 pandemic provided further unfortunate evidence of Central Park North drawing an outline of disparity, with the number of COVID-19 cases, hospitalizations, and deaths being drastically higher above 110th Street (New York City Government, 2021; Tribby & Hartmann, 2021).

Most photographs were taken above this symbolic (and material) border throughout the project, except in cases of three photo-missions. The three occasions when participant-researchers ventured outside of their communities and



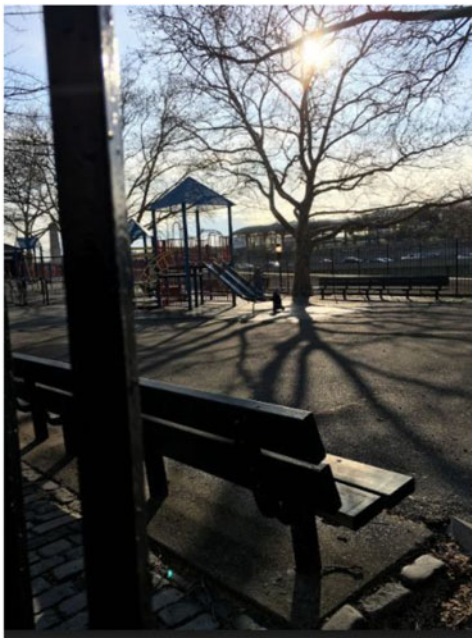


Fig. 5. Ideal community: Yeny's photos of parks and gardens near her apartment.

crossed over to the "other side of the city" were when they explored what brings them a sense of *pride*, *serenity*, and how their *ideal community* would look. Further, two of these three missions were the ones that featured the highest proportion of urban nature: "Serenity" (15 out of 24 photos) and "Ideal Community" (16 out of 26 photos).

Although these spatial findings speak to material disparities in the scale, aesthetics, and maintenance of urban nature across different areas of NYC, we also believe that it is an illustration of the importance of people's sense making about what nature *is* and what it *should be*. Throughout this project, we witnessed the young people actively asserting power over their communities' image; however, our participant-researchers still subscribed to some commonly accepted notions about how an ideal community *should be*.

Thus, if they seldom hear messages about their communities being beautiful, clean, and safe, it is understandable they may go outside of their community to evoke feelings of pride and content. However, over the course of this project, it appears that our participant-researchers began to see their communities differently. Yeny's narrative joined with her photos in Figure 5 speak directly to this point:

> The ideal places that already have become part of my ideal community are the gardens, the development constructions of community and residential facilities, the parks and amphitheater area renovated in the Riverbank State Park. These are ideal things that have made up the community that **I am becoming more aware of,** like for example **I did not know there were gardens; so near my apartment**, which is fascinating and looks beautiful. [...] Lastly, in the photography sequencing I focused on the theme of following lines and frames to give a focal point of the ideal places that create my ideal community in Hamilton Heights. (Yeny, *Ideal Community*)

Yeny's words illustrate what we observed as one of the overarching project outcomes: the participant-researcher's increased awareness of urban nature in their community. Considered alongside the aforementioned excerpts from Jason and Nafisah's "Ideal Community" narratives, our findings suggest that over the course of the project, participant-researchers developed an ecological sense of place (Russ et al., 2015) in that they began to see the value of urban nature within a community context.

Although it is important not to conflate increased awareness of nature and its value with feelings of belonging, we argue that increased awareness is an important first step to belonging and recognition, which can lead to meaningful change. For example, near the end of the project, a stronger sense of agency was enacted in team discussions:

> ... inequality seems like something we can't control. But garbage is something we make and we can control.
>
> there are little things we can do [e.g., community gardens; trash]

Overall, the participant-researchers showed increased cognizance of their individual and collective responsibility over their immediate environments. At one of our last meetings, the young people collectively defined community as, "community means that you care about something and that you have the power to change something about it"; and, to care about something, one needs to be aware of and knowledgeable about it. Participant-researchers started developing a stronger sense of belonging through a stronger sense of ownership. We see this as the beginning of a movement toward disrupting the current state of recognitional inequity, with the young people gradually asserting more agency and showing greater motivation to be civically engaged.

Conclusion

Overall, our photo-narrative exploration of socio-spatial disparities in New York City raises questions about how urban green (in)equity within and across multicultural urban landscapes may translate into landscapes of in/exclusion (Sibley, 1995). The young participant-researchers' perceptions of themselves and their communities as "the one side of the two cities" suggest that inequalities of capital that flow through the city may be reflected back to them and translated into feelings of "otherness" (Tatum, 2014).

The feeling of being other, or of not belonging, is not only a consequence but also a contributing factor to socio-spatial inequality in urban environments. Although it was beyond the reach of our project to impact distributional equity of urban nature, challenging the notions that may contribute to recognitional equity was a plausible goal worth pursuing. The impetus of using a PAR approach to explore young people's sense of belonging and what community means to them seems to have moved us closer to the goal of fostering a sense of ownership, and consequently of promoting the civic engagement of our participant-researchers.

We hope that our exploratory study will inspire future urban environmental education programs to engage young people through participatory and photographic methodologies with a goal of increasing a sense of belonging and urban green equity. This may be particularly relevant considering recent calls for urban environmental education programs to shift away from the goal of promoting pro-environmental behavior and instead explore what issues are relevant to urban youth (Bellino & Adams, 2017).

Further, we want to recognize that distributional and recognitional inequities are not just about class and socioeconomic deprivation of some urban areas. It would be remiss to not at least acknowledge—if not prioritize—racism as a leading factor in environmental injustices, which are intimately connected to health and well-being. The recognition of non-class factors as the basis of environmental inequities necessitates an approach that goes beyond the purely social-democratic distributional framework and enters the realm of an expanded notion of citizenship and political rights (Keil, 2003).

Nonhuman actors such as human-built environments, including urban nature, have to be seen as part of the political universe as they are actively and historically produced, in terms of both physical–environmental qualities and sociocultural content and meaning (Castree and Braun, 2001; Cole, 2003; Swyngedouw, Kaika, & Castro, 2002). When we consider notions of urban nature in this light—as socially, culturally, and historically constructed, rather than given—they become subject to political definition and articulation.

All that is politically defined and articulated can be redefined and rearticulated. Therefore, with the right actions, even ones as nonambitious as our project, people's sense-making about urban nature can be reframed so it does not serve as a means for deepening the feelings of not belonging in one's own city, but as an entryway toward an enhanced sense of ownership and empowerment to make decisions and contribute to positive change in one's immediate communities and beyond.

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Authors' Contributions

J.M.P.: Conceptualization, writing—original draft preparation. S.J.: Conceptualization, methodology, writing, and funding acquisition.

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