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## Original Research

## Has New York City fallen into the local trap?



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## ABSTRACT

**Objectives:** Municipal policies aiming to improve equity in food access and health often rely on the assumption that neighborhoods with limited healthy food availability and high levels of diet-related illness should be the subject of targeted policy-driven change. This study explored this assumption in the context of recent food policy developments in New York City with the objective of empirically examining the geography of everyday food behavior in high- and low-income neighborhoods.

**Study design:** This research used a multi method comparative design. Areas at the poles of income inequality in New York City were identified using census data and geographic information systems. Qualitative and geographic data were collected from individual eaters living and/or working in those areas.

**Methods:** A review of food policies in New York City from 2005 to 2012. Qualitative and geographic data were collected using space-time food diaries and mental mapping interviews.

**Results:** People living in the low-income study area had more localized food geographies than residents of the high-income study area. Individual-level qualitative data revealed that eaters with the least financial resources, those with physical disabilities, and those who were unemployed reported all or nearly all of their food events taking place within their neighborhoods. Eaters from the low-income area suggested that the barriers to healthy food that policy incentives should address were the high price of food and the consumer environment within stores, not the number of supermarkets in their area.

Residents of the high-income area also expressed dissatisfaction with food prices and the in-store environment of their local supermarkets. These eaters leveraged their financial, technological, and transportation resources to overcome those barriers to fresh food. **Conclusions:** The policy review found that New York City's recent nutrition and food policies are to a great extent geographically targeted to low-income areas. As such, they miss opportunities for citywide interventions that would create food environment changes welcomed by residents of both high- and low-income areas. The recent nutrition and food policies also have the potential unintended negative consequence of promoting gentrification.

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## Introduction

*Critical urban theory is (thus) grounded on an antagonistic relationship not only to inherited urban knowledges, but more generally, to existing urban formations. It insists that another, more democratic, socially just and sustainable form of urbanization is possible.*<sup>1</sup>

There is, at best, mixed and limited evidence for the effectiveness of urban food-policy interventions that aim to transform local environments with limited availability of healthy foods and high levels of diet-related illness.<sup>2,3</sup> The local trap refers to ‘the tendency of researchers and activists to assume something inherent about the local scale... [it] equates the local with the ‘good’; it is preferred presumptively over non-local scales’.<sup>4</sup> Researchers in food systems planning have used the local trap to caution against assuming that local foods or initiatives have the greatest potential for improving the social justice, ecological sustainability, or public health outcomes of food systems.<sup>4,5</sup> Some food geographers further argue that localization advances a neoliberal agenda of decentralization that naturalizes inequality.<sup>6</sup> This paper examines the local trap argument in the context of food policy developments from 2005 to 2012 in New York City. It argues that in New York, food policy has fallen into the local trap. And, that as a strategy, localization in urban food policy is useful, but that without complementary strategies at other and intersecting scales it may prove ineffective at reducing inequalities in food access and health.

### *The local trap, food systems, and public health*

Born and Purcell<sup>5</sup> discuss the local trap in the context of food systems planning and highlight how discussions of food system localization inappropriately treat scale as an entity and end goal. They and Allen<sup>7</sup> stress that as a strategy, localization can promote social, economic, and health justice and it can just as easily maintain the status quo of the global agri-industrial food system. Sonnino<sup>8</sup> adds to this critique noting that the cultural diversity of cities complicates discussions of food system localization since ensuring adequate and culturally appropriate food for urban populations may require global supply chains. While research and policy typically emphasize neighborhoods as the most appropriate unit of analysis and intervention, the local trap argument cautions against assuming that neighborhoods, or small-scale residential areas are the most meaningful scale of analysis and action.<sup>5,9</sup> Public health researchers further caution that this focus on neighborhoods may overlook other important routine contexts such as school, work, and along commuting routes.<sup>9–11</sup> Thus, two sides of the local trap emerge. One, focused on localization of food supply chains. Another, central to this paper, addresses the geographic scale of food behavior and the scale of the governance structures that shape urban food environments.

While ample evidence shows that local food environments play an important role in food choices,<sup>12</sup> the political and economic drivers of these environments may be more

effectively modified through changes at other levels. Falling into the local trap presents two key threats to the project of creating more democratic, socially just, and sustainable cities. First, privileging can lead to unintended negative consequences. And secondly, by treating localization as an end unto itself, the local trap prevents researchers and activists from seeing other scalar strategies that may be more effective for reaching their goals.

### *Universal and targeted intervention approaches*

The local trap dovetails with ongoing debates in public health about the risks and benefits of targeted versus universal intervention approaches. Geographically targeted and means-tested interventions aim to create the most social benefit possible with limited available resources.<sup>13</sup> These initiatives aim to reduce health disparities by improving outcomes for those at the bottom of such gaps. But, the administrative costs of targeted programs can be substantial, reducing resources available for beneficiaries. These costs are associated with the two essential elements of targeted interventions, defining to whom or where benefits should be directed and identifying and enrolling those participants. Leakage refers to resources lost when benefits are conferred outside the intended program focus. Undercoverage is the extent to which a targeted program falls short of reaching its intended beneficiaries. Leakage and undercoverage challenge the logic and mechanics of targeted approaches. Local perceptions, favoritism, misunderstood selection criteria, political interests, and implementation problems all contribute to leakage and undercoverage.<sup>14</sup> Finally, targeted interventions can be challenging to advance politically because they have a limited base of potential beneficiaries who are often poor and who have lower rates of political participation.

A universal intervention approach seeks to change the determinants of health for an entire population, recognizing that benefits may concentrate in some groups more than others. The inequality and prevention paradoxes highlight some strengths of a universal approach. The inequality paradox describes how targeted interventions that make health-promoting resources more widely – but not universally – available will disproportionately benefit advantaged groups, thus reinforcing the disparities they aim to reduce.<sup>15,16</sup> The solution is to apply interventions that promote health regardless of personal effort and resources, or directly increase socio-economic resources for resource-poor groups.<sup>17</sup> The prevention paradox articulated by Rose, illustrates how targeted benefits to a sub-population yield more modest public health benefits when compared to a universal approach that delivers a small benefit to individuals across a whole population.<sup>18</sup> While universal schemes entail high leakage, they carry lower administrative costs and a greater base of political support. The universal approach is also aligned with a human rights perspective. For example, enacting the human right to healthy food requires social policies that fulfill this right for the entire population and ensure that such policies are retained in the face of budget declines.<sup>19</sup> The potential for high financial costs is a major drawback of universal interventions.

## Food policy for health promotion and equity in New York City

This section provides a brief, geographically focused review of diet and health related food policy in New York City between 2005 and 2012. During that period, the city's approach to addressing diet-related health inequalities used a combination of universal and targeted policies, aiming to make healthy food more available and accessible, especially to residents of its poorest neighborhoods. Although some policies were presented as universal, this paper argues that in practice they targeted the city's low-income residents in geographically defined areas.

Around 2008 New York shifted its focus on food from policies that view food safety as protection against food-borne contaminants to one that also addresses chronic health conditions such as obesity and diabetes.<sup>20</sup> Its public health officials emphasized the Health Code and other standard setting instruments to improve nutrition citywide. In an effort to address health inequalities, the Department of Health and Mental Hygiene (DOHMH) created three District Public Health Offices (DPHOs) located in upper Manhattan, the south Bronx, and central Brooklyn, areas with the highest burden of diet-related disease and poverty. The DPHO areas are contiguous with several programs and policy targets discussed below. For now, it is worth noting that this strategy for addressing health disparities targets specific social groups and spatial areas.

The Health Code was used in 2006 to eliminate transfat from all restaurant food and again in 2007 to require chain restaurants to post calorie counts for their products on menus and menu boards.<sup>21</sup> In 2007 Mayor Bloomberg and the City Council created the Office of the Food Policy Coordinator, charged with promoting access to affordable, healthy food for low-income New Yorkers. In 2008, the Mayor announced an executive order setting nutritional standards for all food purchased or served by city agencies. These standards apply to the approximately 270 million meals served annually in public schools, jails, hospitals, as well as senior and childcare centers, ensuring that the food served by municipal agencies does not exceed specified proportions of fat, sugar, and salt. This focus on food served by public agencies effectively targets these policies at low-income New Yorkers, even though they might otherwise appear to be universal. Similarly, the calorie labeling regulation mainly targets down-market eaters because most up-market restaurants tend to be unaffiliated with chains, and are thus exempt from this law.

A number of New York's policy and program initiatives focus on increasing the availability of healthy foods in DPHO areas where there are high concentrations of diet-related disease and more limited food retail options. Through the Healthy Bodega initiative, the DOHMH staff work with owners of small corner stores in these areas to improve the quantity, quality, and display of fresh foods while reducing the promotion of alcohol and tobacco. The city has also issued 1000 new licenses for Green Carts; street vendors who sell fresh produce in low-income areas, including those served by DPHO areas. Also focusing on making health-promoting foods like fresh vegetables more accessible to low-income residents, the

city is working to ensure that vendors at farmer's markets are equipped to accept electronic benefits transfers from the Supplemental Nutrition Assistance Program (SNAP) and Women Infants and Children (WIC), two national programs that provide food benefits to individuals or families with low incomes. The Health Bucks program provides financial incentives for SNAP and WIC recipients to purchase produce at farmer's markets by giving them \$2 bonuses for every \$5 they spend. These are targeted to reach low-income residents across the city receiving SNAP and WIC benefits, illustrating a spatially universal but socially targeted approach.

On May 16 2009, New York City presented a plan for promoting supermarket development in areas with high rates of diet-related disease and limited food retail, again covering lower-income areas including the three DPHO areas. The plan, Food Retail Expansion to Support Health (FRESH) includes both zoning and financial incentives for supermarkets. To qualify for these incentives, supermarkets must dedicate at least 30% of their retail space to perishable goods and meet minimum requirements on square footage devoted to fresh produce. FRESH is another example of a socially and spatially targeted food policy intervention; one rooted in the assumption that eaters are constrained by food availability in their local neighborhoods.<sup>22</sup>

Bearing in mind that the New York City's food policies and programs targeted the city's low-income residents, to a great extent in geographically defined areas, the local trap begs three questions. To what degree does procuring food and eating take place in the home neighborhoods of low-income New Yorkers? Is the geography of these food behaviors different from that of residents in high-income areas? And, are there other scales of intervention that could better address food environment and health inequalities?

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## Methods

Using a comparative mixed-method design, this research compared the everyday geographies of food for people living or working in high- and low-income areas of New York City. The research methods were selected to describe the spatial and experiential qualities of food behavior, with the aim of determining the extent that food behavior is happening in and affected by the food environments in socially and economically different areas. Study sites were selected to represent the highest- and lowest-income census tracts. Data from 2000 was used because the site selection process began before the release of 2010 census data. Using ArcGIS the high-income study site was located in the Upper East Side of Manhattan, and the low-income area identified was in Brownsville, Brooklyn. Fig. 1 shows the results of a cluster analysis of census tract-level income data from 2000. The analysis and map demonstrate that the areas selected were located within a wider area of similar income, supporting their representativeness of experiences in neighborhoods at either end of the city's income gap.

Space-time food diaries and semi-structured mental mapping interviews were used to gather data that capture details about both the eating events and the flow of everyday experience. Three-day food diaries are a traditional method

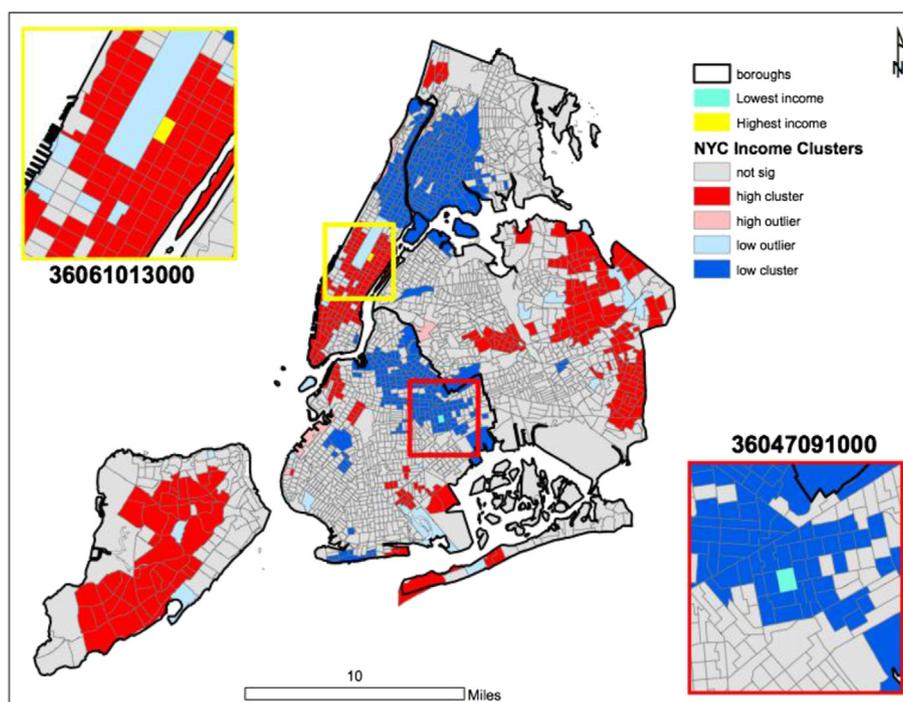


Fig. 1 – Cluster analysis of census tract income distribution.

for recording dietary intake.<sup>23</sup> In this study participants kept three-day food diaries that also included recording where and when they ate, as well as reflective notes about the social and environmental context for food events. Participants for the semi-structured and mental mapping interviews were recruited from the pool of space-time food diary participants. After completing their food diaries 92% of participants elected to also be interviewed. These semi-structured interviews lasted from 30 minutes to 2.5 hours. Participants discussed their perceptions of the selected study area, its influence on their diet, how they interact with this area in their day-to-day activities, what facilitators and barriers to food they experience in their day-to-day lives. They were also asked to narrate the activities surrounding selected eating events from their food diaries. All interviews were recorded, transcribed, and thematically analyzed. During this phase of the research a closed-ended survey was also administered to participants to gather sociodemographic data that was later used to characterize the sample and support a segmented data analysis. This survey included questions about race, ethnicity, income, educational attainment, income, employment status, profession, gender, age, marital status, housing tenure, household size, as well as self-reported height and weight which were later used to calculate body mass index and ascertain weight status.

Mental mapping is a type of cognitive mapping methodology used to elicit contextual information about how individuals perceive and use the environment in their everyday lives.<sup>24</sup> With this research method participants draw, or visually annotate maps, with information about a given phenomenon of interest. As an insert in their food diary, participants received a base map of the selected study area. Participants

were asked to annotate these maps with the locations of food places that were featured in their diaries, and later in the semi-structured interview to further annotate the maps with information about their neighborhood's boundaries. Food diary and mental-mapping data were cross-analyzed to calculate the percentage of in-neighborhood food events for each participants' three days of self-observation. The in- or out-of-neighborhood distinction was determined based on the location of the event in relation to the individuals' definitions of their neighborhood boundaries as illustrated on their mental maps. Table 1 shows the number of participants for each method of data collection and by study area.

### Recruitment

Participants for the food diary and mental mapping portion of this research were recruited through a variety of channels. Fliers inviting participation in the study were posted in public places in the selected study areas. These included store fronts, libraries, bus stops, senior centers, and parks. In all areas door-to-door leafleting was also conducted. No fliers were placed on cars because this might have biased the sample toward including more individuals with access to this kind of

Table 1 – Study sample size.

	Brownsville	Upper East Side	Total
Food diaries	12 total (10 residents two workers)	10 total (nine residents one worker)	22
Mental mapping interviews	10	10	20

transportation that may have bearing on their food shopping behavior. In New York the author also attended community board meetings in each of the study sites and left fliers in the locations that hosted those meetings. In Brownsville, the author also guest taught two classes on the subjects of “diet-related health inequalities” and “conducting research” in a public high school. Students from these classes were given fliers to take home to their parents. The author used snowball sampling to increase my pool of participants beyond those that responded to the initial leafletting efforts. Only individuals who were 18 years of age or older and live or work in one of the selected study sites were eligible to participate. Participants maintained their food diaries in a booklet the author provided. Participants received a \$25 (£15) incentive for completed food diaries. Most often participants also took part in the interview portion of this study, and the author would bring the incentive to the interview and give it to the participant in person before beginning the protocol. If they did not participate in the interview the author gave them the incentive when they met for the author to collect the diary.

## Results

Analysis of the mental mapping interviews investigated the assumption that individuals eat most of their meals and purchase food where they live by measuring the percentage of food events that occurred within the areas participants identified as ‘their neighborhood.’ Fig. 2 provides a visual example of the mental maps produced by study participants. Table 2 presents the results of this analysis. The percentages are used only to describe the proportions of in versus out of neighborhood food events, thus comparisons are descriptive. They do not reflect any statistical significance.

The disparity between the percentage of in-neighborhood food events reported by residents in Brownsville (83.9%) and

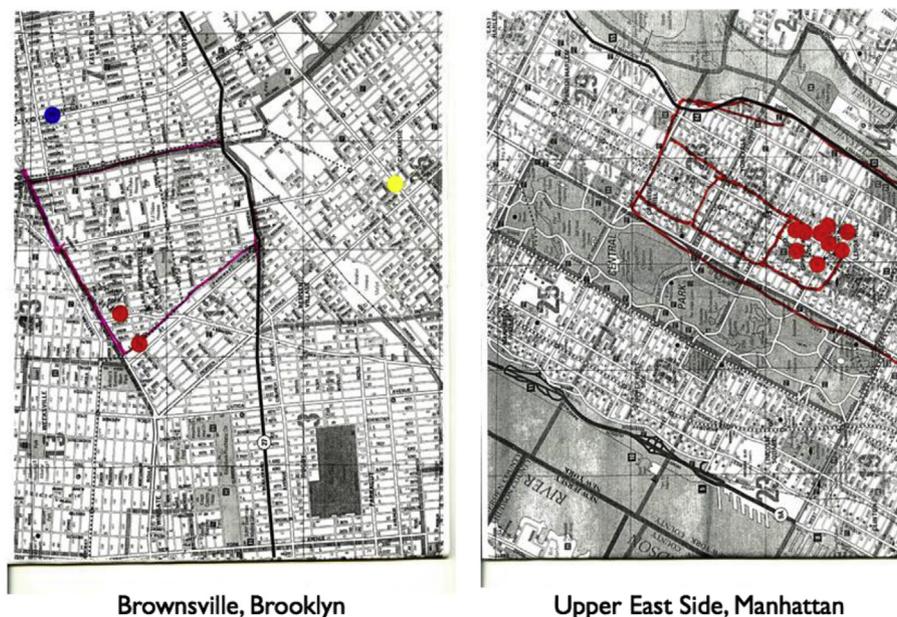
**Table 2 – Mean number of in-neighborhood food events by study site and category of eater.**

	Brownsville	Upper East Side
Residents	83.9% (n = 10)	63.4% (n = 9)
Workers	37.6% (n = 2)	38.1% (n = 1)

the Upper East Side (63.4%) suggests that people living in lower-income areas of that city are somewhat more constrained in their food geographies than residents of wealthy areas. This resonates with the neighborhood characterizations presented earlier. Upper East Siders are more likely to own or have access to a car and this is likely to contribute to their expanded food range. Closer examination of individual-level data confirmed that eaters with the least financial resources, with physical disabilities, and those that were unemployed report all or nearly all of their food events taking place within their neighborhood of residence. This finding supports the assumption that local food environments are especially important for many disadvantaged urbanites. However, policies that target areas with higher concentration of such residents still may not be the most efficacious strategy for improving food availability in these locales. Regarding workers, these eaters tended to have about a third of their food events take place in the areas where they were employed irrespective of the income level of those areas.

### *Not just a supermarket, a good supermarket*

While discussing the city's responses to inequalities in food availability and health with a teacher in Brownsville, the author asked if she was supportive of the FRESH policy. A wife and mother, this woman lived in a neighborhood adjacent to Brownsville and felt that food availability in the area was lacking. She and her husband traveled weekly by car to a



**Fig. 2 – Examples of mental maps from this study.**

Trader Joe's (an up-market chain of supermarkets in US) halfway across the borough to find affordable organic foods sold with convenience in mind.

*Yes and it would, but not just the regular Key Food Associated pack (down-market and mid-market chain supermarkets in the US)... No, no, I was thinking about the good supermarkets... It would be good to give them incentives to lower their costs and encourage them to set up shop in good neighborhoods – poor neighborhoods. So absolutely, tax incentives will lower their costs so they can make the food affordable for people who are in a pinch and need healthy food. I do not agree with giving incentives to supermarkets that are just your typical run of the mill supermarkets that don't care about what they're serving people.*

Her response indicates that her understanding of why supermarkets would merit financial incentives for locating in poor neighborhoods was not rooted in a perception that there are not enough supermarkets in the area. Rather in her observation, the barriers to access that the incentives should address were the high price of food and the consumer environment in the 'run of the mill supermarkets that don't care about what they're serving people.' This contradiction calls into question the logic behind FRESH. Will adding more stores to the area improve access to fresh food? Or, is there something other than a reliance on market competition that could more effectively address this issue?

Participants living on the Upper East Side were also dissatisfied with their neighborhood's supermarkets and unsurprisingly used their resources to procure foods elsewhere. Most striking was one participant's description of Manhattan supermarkets as part of 'the 11th circle of hell.' To avoid such torture, this eater and others (described in the excerpt below) shop not just outside their neighborhood, but when possible outside of the city.

*There are an X number of supermarket chains and frankly I don't like any of them. When I go out of town almost anywhere, shopping in a grocery outside of Manhattan is really a pleasure. Shopping in these places, with their tiny little constrained aisles, is horrible. It may be on the 11th circle of hell. And it's incredibly expensive.*

*When I used to live on 92nd Street there was a building right across from my place – it was a very expensive luxury building. They [luxury building residents] would come in on Sunday nights, bring their laundry all done, bring all their groceries for the week. I would see the license plates, either Maine or Connecticut or New York. They're putting it all down on the street and the doorman's helping them take everything in.*

E-retailing grocery services, like Fresh Direct, which allows people to order groceries to be delivered to their homes, were another way that Upper East Siders described procuring food to eat at home. One recurrent reason for ordering groceries over the internet was to save time. Others appreciated not having to lift or carry heavy items. Some evidence suggests that these services are unwilling to serve low-income communities.<sup>25</sup>

### **Bodegas<sup>a</sup> and fast food**

Participants' experiences of convenience stores in Brownsville suggest potential limitations in the effectiveness of policies that aim to improve the healthfulness of these stores. A resident in her mid-twenties described her experience of a choice point regarding food that took place in her corner store. It also raises the issue of perceived inequality in neighborhood food environment.

*I didn't eat dinner that day. I actually had milk duds and popcorn from the corner store. When I got home I just walked over there and was gonna get a sandwich... I was already tired and didn't feel like waiting, so I was like 'let me just get this and get out.' If there was something I could have grabbed, I would have... like in the city they have that (prepared sandwiches) all the time, and I have that while I'm there, I have no problem with that, so if it had been there, I'm pretty sure that's what I would have grabbed that because a meal would have been better.*

This woman works outside Brownsville and draws on her understanding of the difference between her bodega and stores 'in the city.' To her, having a fresh and fast option would have led to eating dinner. It also demonstrates one reason that adding low-fat milk and fresh produce may not improve the diets of people who live nearby.

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## **Discussion**

The local trap provides a lens to antagonize *inherited urban knowledges* about the locality and mobility of food behavior, and the *existing urban formations* of food environment and health inequalities. The results of this study demonstrate that New York City takes a largely targeted approach to addressing food environment and diet-related health disparities. Data examining geography of food behavior in the context of urban income inequality show that neighborhood food environments feature prominently in the everyday lives of eaters in both study areas. Interviewees in both areas expressed dissatisfaction with supermarkets. Those with resources and motivation to do so shop at preferred stores in other locations or use a grocery delivery service. Interview data also identified some missed opportunities and unintended consequences of universal and regulatory interventions at other scales.

### **Missed opportunities**

By focusing on the local, policymakers miss opportunities for intervention that work synergistically with the everyday mobility of city residents. For example, based on a community survey of its poorest residents, San Francisco addressed the issue of disparities in food availability by intervening in its transit systems to improve connectivity between eaters and major food retail establishments. By failing to consider mobility-based strategies, New York misses the opportunity

<sup>a</sup> Bodega is a Spanish word used colloquially in New York City to refer to convenience stores.

to use a municipal resource and service, the public transit system, to address issues of food access and health.

Similarly, opportunities for universal interventions or those at other scales, like city- or state-level policy, can be overlooked. For example, in an informational interview, a policymaker in New York commented that the problem with supermarkets was that they *don't do what McDonalds does*. He noted the brand's strong emphasis on training franchise owners, maintaining rigorous standards for cleanliness, customer service, as well as food safety. In his view, the problem wasn't that there weren't enough stores, it was that supermarket chains were failing to support franchise owners and store managers to ensure a consistent and positive customer experience. A universal approach would use city or state regulation of supermarkets to set standards that may improve supermarkets for everyone, with stronger effects in areas of high need. Toward the goal of promoting public health, regulations could address workforce training and wages, store cleanliness, and percentage of retail space allocated to fresh foods. A universal strategy might have a greater impact on improving food availability in poor areas than the FRESH program that relies substantially on market forces.

In both high- and low-income areas people expressed interest and concern about inequalities in food availability and health. Yet, they felt that there were few routes for them to become more involved in citywide food politics. From a political perspective, this study's results indicate that residents from a range of income levels would welcome such change. When food governance and policy rely on geographic and social targeting, they miss opportunities to bring together a broader constituency of eaters; and fail to address the full gradient of health inequality – not just addressing the lower end of the city's gravest disparities.

#### Unintended negative consequences

In New York City concern about gentrification, food businesses, and justice invoke a cautionary stance toward the supermarket incentives in FRESH.<sup>26,27</sup> Supermarkets make historically poor areas of the city more desirable places for wealthier people to live. In and of itself this may not seem detrimental to public health. However, in the context of historic serial displacement of communities of color and poor communities, another picture emerges where those bearing the greatest burden of diet-related diseases are again systematically pushed into living where resources for health are scarce.<sup>28,29</sup> By perpetuating this pattern of displacement and unequal access to resources, FRESH has the potential to maintain if not exacerbate income and racial disparities in health. It remains to be seen how the FRESH program will impact neighborhoods and the city as a whole.

#### Limitations & applications

There are limitations to the generalizability of this study's findings. Due to the study's limited scope, findings may not be generalized to the entire populations of this or other cities. As an observational and cross-sectional study, results cannot be used to demonstrate causality. Census data used for site selection was from 2000 and thus some urban change may have

occurred. The sample size is small relative to the populations of the study sites, and sample characteristics are not fully representative of those populations. Also, because participants voluntarily responded to fliers about this research, they may be more interested in food and health than most members of the general population. The \$25 participation incentive is likely to have contributed to the greater number of participants in low- as compared to high-income study areas because this financial benefit was more significant for people with fewer resources.

This paper presents a resonant, rather than representative, perspective on the problematic inequities in urban food environments and health, and current policy approaches to their elimination. This study suggests a need to explore the feasibility and potential costs and benefits of universal approaches to food environment and health interventions. Geographically targeted policies should be a strategy, but not the only strategy for addressing food environment and health inequalities.

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#### Author statements

##### Ethical approval

This research was approved by the Institutional Review Board of the City University of New York Graduate Center.

##### Funding

None.

##### Competing interests

None declared.

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#### REFERENCES

1. Brenner N. What is critical urban theory? *City* 2009;13(2):198–207.
2. Cummins S, Petticrew M, Higgins C, Findlay A, Sparks L. Large scale food retailing as an intervention for diet and health: quasi-experimental evaluation of a natural experiment. *J Epidemiol Community Health* 2005 Dec 1;59(12):1035–40.
3. Wrigley N, Warm D, Margetts B, Whelan A. Assessing the impact of improved retail access on diet in a 'food desert': a preliminary report. *Urban Stud* 2002;39(11):2061.
4. Purcell M. Urban democracy and the local trap. *Urban Stud* 2006;43(11):1921–41.
5. Born B, Purcell M. Avoiding the local trap: scale and food systems in planning research. *J Plan Educ Res* 2006;26(2):195–207.
6. Guthman J. Neoliberalism and the making of food politics in California. *Geoforum* 2008;39(3):1171–83.
7. Allen P. Realizing justice in local food systems. *Camb J Reg Econ Soc* 2010;3(2):295–308.
8. Sonnino R. Feeding the city: towards a new research and planning agenda. *Int Plan Stud* 2009;14(4):425–35.
9. Cummins S. Commentary: investigating neighbourhood effects on health—avoiding the "Local Trap". *Int J Epidemiol* 2007;36(2):355–7.

10. Widener MJ, Farber S, Neutens T, Horner MW. Using urban commuting data to calculate a spatiotemporal accessibility measure for food environment studies. *Health Place* 2013 May;21:1–9.
11. Burgoine T, Monsivais P. Characterising food environment exposure at home, at work, and along commuting journeys using data on adults in the UK. *Int J Behav Nutr Phys Act* 2013 Jun 27;10(1):85.
12. Cummins S, Macintyre S. Food environments and obesity—neighbourhood or nation? *Int J Epidemiol* 2006;35(1):100.
13. Besley T, Kanbur R. *Principles of targeting*. University of Warwick Development Economics Research Discussion Papers No. 85; 1993.
14. Houssou N, Zeller M. To target or not to target? The costs, benefits, and impacts of indicator-based targeting. *Food Policy* 2011 Oct;36(5):627–37.
15. Frohlich KL, Potvin L. Transcending the known in public health practice. *Am J Public Health* 2008 Feb;98(2):216–21.
16. Marmot M. Social determinants of health inequalities. *Lancet* 2005;365(9464):1099–104.
17. Blacksher E, Lovasi GS. Place-focused physical activity research, human agency, and social justice in public health: taking agency seriously in studies of the built environment. *Health & Place* 2012;18(2):172–9.
18. Rose G. Strategy of prevention: lessons from cardiovascular disease. *Br Med J Clin Res* 1981 Jun 6;282(6279):1847–51.
19. Anderson MD. Rights-based food systems and the goals of food systems reform. *Agric Human Values* 2008;25(4):593–608.
20. Silver L, Bassett MT. Food safety for the 21st century. *JAMA J Am Med Assoc* 2008;300(8):957.
21. Farley TA, Caffarelli A, Bassett MT, Silver L, Frieden TR. New York City's fight over calorie labeling. *Health Aff (Millwood)* 2009;28(6):w1098–109.
22. Queens Ledger. *Some NYC neighborhoods could get very FRESH*. [Internet]. Available from: [http://www.queensledger.com/view/full\\_story/3848943/article-Some-NYC-neighborhoods-could-get-very-FRESH-](http://www.queensledger.com/view/full_story/3848943/article-Some-NYC-neighborhoods-could-get-very-FRESH-) [cited 02.02.11].
23. Johnson RK. Dietary intake: how do we measure what people are really eating? *Obesity* 2002;10:635–8.
24. Lynch K. *The image of the city*. The MIT Press; 1960.
25. WNYC News. *In Fresh Direct move to the Bronx, food delivery to borough not a priority*. [Internet]. Available from: [http://www.wnyc.org/articles/wnyc-news/2012/feb/27/fresh-direct-deal-no-requirement-south-bronx-food-delivery/?utm\\_source=sharedUrl&utm\\_medium=metatag&utm\\_campaign=sharedUrl](http://www.wnyc.org/articles/wnyc-news/2012/feb/27/fresh-direct-deal-no-requirement-south-bronx-food-delivery/?utm_source=sharedUrl&utm_medium=metatag&utm_campaign=sharedUrl) [cited 10.09.13].
26. Checker M. Wiped out by the “greenwave”: environmental gentrification and the paradoxical politics of urban sustainability. *City Soc* 2011 Dec 1;23(2):210–29.
27. Zukin S, Trujillo V, Frase P, Jackson D, Recuber T, Walker A. New retail capital and neighborhood change: boutiques and gentrification in New York City. *City Community* 2009;8(1):47–64.
28. Saegert S, Fields D, Libman K. Mortgage foreclosure and health disparities: serial displacement as asset extraction in African American populations. *J Urban Health*; 2011::1–13.
29. Fullilove M. *Root shock: how tearing up city neighborhoods hurts America, and what we can do about it*. New York: One World/Ballantine; 2005.