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Food deserts: Governing obesity in the neoliberal city

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Abstract
Studies of 'food deserts', neighborhoods in which healthy food is expensive and/or difficult to find, have received much recent political attention. These studies reflect the popularity of a social ecology in public health, rising concerns over an obesity 'epidemic', and the increasing ease of spatial analysis using geographic information systems (GIS). This paper critically examines these areas, arguing that work on food deserts is a spatialized form of neoliberal paternalism that bounds health problems within low-income communities. Alternative analyses of the urban food landscape, based on work in political ecology and critical GIS, may suggest more equitable paths forward.

Keywords
critical GIS, food deserts, food studies, governmentality, health geography, neoliberalism, urban studies

I Introduction

At their January 2012 meeting, the US Conference of Mayors announced the formation of a Food Policy task force (Shute, 2012). The chairs of this group, Thomas Menino of Boston and Stephanie Rawlings-Blake of Baltimore, pledged work on a range of issues, including input on the US farm bill, stronger local food systems, and improved food access (Boston Mayor's Office, 2012). This task force reflects a rising interest in food system governance by public officials in the USA, Canada, and the UK at several levels over the last decade. In the specific case of food access, much recent action has focused on so-called 'food deserts', low-income areas in which healthy foods are expensive, of poor quality, or inaccessible, thus contributing to rising rates of obesity and diet-related chronic disease. One statewide project, the Pennsylvania Fresh Food Financing Initiative, provided funds for new grocery stores in underserved rural and urban areas in the mid- to late 2000s. It has been singled out by the Obama administration, which at the time of this paper is pushing for a US$400 million initiative at the national level modeled after the program. Similar initiatives to incentivize new food retail are already underway in several other states (The Food Trust, 2011).

This paper argues that current work on food deserts research can be historically situated at the intersection of three lines of research. First, interest in food deserts draws from a body of work seeking to 'place' public health in a geographical context (Kearns and Moon, 2002; King, 2009). Beginning in the late 1960s, public health research increasingly questioned the

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commonplace focus on educational efforts to change individual behavior. Instead, increased interest in a social ecological model placed more emphasis on the neighborhood environment as a driver of health-related behaviors (Emery and Trist, 1972; Stokols, 1995). Work in this area has advocated for interventions designed to 'cure the environment' (Hill and Peters, 1998: 1373) and stem public health problems.

Second, a dramatic rise in rates of obesity beginning in the late 1980s created deep concern about an obesity 'epidemic', particularly among low-income populations. Public health officials encouraging action to reduce obesity cited its health risks as well as the high costs of treating diet-related disease (Gallagher, 2006; Seidell, 1998; Wolf and Colditz, 1998). The consumption of sugar-laden drinks, highly processed snacks, and fast food has been most closely linked to this trend. The comparative abundance of such foods in low-income urban neighborhoods, combined with a corresponding lack of fresh produce and other healthy foods, has led to research on the role of 'obesogenic environments' and food deserts in causing obesity.

Third, research on food deserts has relied heavily on spatial analyses utilizing geographic information systems (GIS). The majority of current studies analyze the distance to and density of healthy and unhealthy food stores within particular communities, comparing the accessibility of healthy foods against underlying demographics (Beaulac et al., 2009). The maps that result from this research, including the US Department of Agriculture's own Food Access Research Atlas,[1] present food deserts as areas with clearly defined boundaries and a more or less uniform definition. The conception of both food deserts and urban spaces provided by increasingly ubiquitous GIS software provides clear goals for spatial governance, allowing non-profits, community groups, and policymakers to propose solutions targeted at problematic areas.

This paper argues that the combination of these three lines of research – public health's embrace of social ecology, anti-obesity efforts, and GIS-enabled neighborhood analyses – marks food desert work as a distinctive form of neoliberal governance. Rather than simply fostering self-governing individuals (Braun, 2007; Rose, 2001), food desert work is more indirect, focusing on the creation of environments that in turn encourage healthy behaviors. Though ostensibly designed to reduce stigma on individuals, these projects pathologize low-income communities – and their residents, by extension – by locating the cause of obesity within their geographic boundaries. Food deserts, and efforts to utilize urban design to reduce obesity more generally, can thus be read as an expanded, spatialized form of 'neoliberal paternalism' (Soss et al., 2011), a set of policies meant to restore social order to dysfunctional communities and 'mismanaged lives' (Brown, 2005: 42). Furthermore, by normalizing middle-class 'foodscapes' as a model for low-income areas, projects combating food deserts close off a more systemic interrogation of both food production systems and processes of urban economic and racial segregation. The paper concludes by considering how other approaches, including work in political ecology and critical GIS, suggest alternatives that may avoid the above pitfalls.

II The rise of social ecology

Social ecology came to prominence during a roughly two-decade period beginning in the late 1960s (Binder, 1972; Bronfenbrenner, 1979; McLeroy et al., 1988).[2] Its early roots are in the Chicago School and its focus on applying ecological methods used to study natural ecosystems to human communities. Early human ecology stressed the importance of economic and biological processes in shaping human communities, but proponents of a *social* ecology have included social structures more explicitly in

their analyses, such as relational networks and civic institutions (Alihan, 1964; Binder, 1972). In health, social ecology began as a critique of approaches which focused on individuals as discrete actors, emphasizing instead the contextual factors which shape behavior. In doing so, it represents a mode of governance somewhat different from the standard goals of neoliberal governmentality (Foucault, 1991; Rose, 2001). Rather than creating self-governing individuals, social ecology governs individuals through changes to their everyday environment, shaping behaviors by changing the 'choice landscape' of a given neighborhood.

Early work in social ecology emphasized holistic analyses of human behavior. Prizing the goal of 'living spaces conducive to the achievement of optimum human satisfaction' (Binder, 1972: 906), this early work advocated multiscalar analyses, understanding how environmental factors affect human behavior and emphasizing 'individual adaptation, adjustment, and coping' (Moos, 1976). Catalano (1979), for instance, studied how the stress and air pollution that characterizes working-class urban housing leads to lower disease resistance, critiquing a purely germ-based explanation of sickness focused only on individual bodies. Bronfenbrenner's ecological theory, developed in the late 1970s, conceptualized the social environment as a series of concentric spheres, ranging from the microsystem of home, neighborhood, and family to the macrosystem of culture, values, and laws within a community (Bronfenbrenner, 1979, 1989). The focus on individuals as organisms constantly adapting to their environment was key to this line of thought, an alternative to treating individuals as discrete rational actors. As one early author stated bluntly, the latter approach:

> instructs people to be individually responsible at a time when they are becoming less capable as individuals of controlling their total health environment . . . What must be questioned is both the effectiveness and the political uses of a focus on life-styles and on changing individual behavior without changing social structure and processes. (Crawford, 1979: 256)

For social ecologists, neighborhoods deserved recognition as actors in their own right, not only as a container for individuals with similar characteristics. This is evident in studies focused around neighborhood effects on health, which has broadly considered the role of both *context* (the characteristics of a given area) and *composition* (the traits of its population) on health outcomes. The effects of social class on health, for example, are not just seen in demographic characteristics such as levels of education or household income. Rather, low-income neighborhoods affect health independent of these individual traits:

> In the same way that education, occupation, income, and/or car ownership may be mediating factors in the relationship between social class position and health, so too social, economic and cultural features of areas may be some of the mediating factors in the relationship between class and health. (Macintyre et al., 1993: 219)

Some recent work in this area by Macintyre and others has also called for more complex understandings of the relationship between populations and their environment, questioning the efficacy of the context/composition distinction (Cummins et al., 2007; Macintyre et al., 2002). Still, by consistently concentrating on the relationship between people and their neighborhoods, social ecology has supported research that places public health in its geographical context.

While social ecology has been an effective critique of individual-focused interventions, it has its own problematic areas. Because of its increased emphasis on place, as McLeroy et al. (1988: 351) have stated, 'The [ecological] model assumes that appropriate changes in the social environment will produce changes in

individuals'. Despite Bronfenbrenner's insistence that the individual should be viewed 'not merely as a tabula rasa on which the environment makes its impact, but as a growing, dynamic entity that progressively moves into and restructures the milieu in which it resides' (Bronfenbrenner, 1979: 21), much social ecological work has treated the environment-individual relationship as a unidirectional one. For instance, the use of multilevel models to measure neighborhood influences on health behaviors implies a strictly one-way relationship (Black et al., 2010; Inagami et al., 2009). Such an approach precludes attention to the complex, endogenous processes that connect individuals and neighborhoods. As one example, Guthman (2011) has recently critiqued research on obesogenic environments for failing to consider how both the production of such neighborhoods and individuals' decisions to live in them may be part of a broader process of class formation.

Another problematic area of this work is the sharp dichotomy between neighborhood residents, treated as largely predictable organisms responsive to their environment, and analysts who, with a 'view from above' (Haraway, 1988: 589) provided by large data sets, can engineer this environment to improve the overall health of the population. This perspective often misses the complexity and significance of everyday practices (Scott, 1998). This power differential between analyst and organism, combined with a focus on optimal health, resonates with Foucault's description of neoliberal governmentality and its efforts to produce self-governing citizens whose conduct optimizes the general welfare of the state. While much of Foucault's work examined particular spaces dedicated to the disciplining of deviant bodies at specific sites, such as the school, hospital, army, or prison (Foucault, 1995), social ecology focuses on the manipulation of the physical and social environments in which individuals live.[3] By focusing on the neighborhood environment, social ecologists could shift the behavior of the population.

By the late 1990s, social ecology had secured a firm footing within public health research. Daniel Stokols' much-cited 1995 article applying social ecological principles to research on community health placed the former framework alongside existing approaches as first among equals. Rather than attempting to justify social ecology's place in health research, Stokols provided several principles for its application, such as the need to 'enhance the fit between people and their surroundings' (Stokols, 1995: 288). This article, and others like it, presented social ecology as essential lens for understanding the health of communities (Egger and Swinburn, 1997; Macintyre et al., 1993; Swinburn et al., 1999). For researchers particularly concerned about rising rates of obesity, social ecology was a particularly promising analytical tool.

III Curing the obesogenic environment

Researchers studying rising obesity rates increasingly saw social ecology as an alternative to traditional epidemiological approaches. In the USA, rates of obesity (measured by a body mass index, or BMI, of over 30) increased from 15% in the late 1970s to 30.9% at the end of the 1990s (Flegal et al., 2002). The effectiveness of behavioral approaches to reducing obesity had been questioned by empirical studies since the late 1970s, and these rising rates only further contributed to this skepticism (Garner, 1991). By the late 1990s, several authors had applied social ecology specifically to this issue by studying the potential role of so-called 'obesogenic environments' (Egger and Swinburn, 1997; Swinburn et al., 1999). As one piece framed this approach, 'To combat the epidemic of obesity, we must first *cure the environment*' (Hill and Peters, 1998: 1373, emphasis added). In keeping with Bronfrenbrenner's multiscalar framework, an early review framed environ-

mental influence in broad terms, including automobile sales, fast food advertising, and television viewing time (French et al., 2001). Swinburn et al.'s ANGELO framework explicitly classifies research in this area by its scale (micro or macro) and domain (physical, economic, political, and sociocultural) (Swinburn et al., 1999). Using this framework, certain environments, broadly defined, can be labeled as either obesogenic or, conversely, 'leptogenic' based on their tendency to work against or promote healthy weights in individuals.

Work on obesogenic environments has exploded in the last decade, with a 2010 review finding nearly 150 published studies addressing it in some form (Kirk et al., 2010). These studies are most common in the USA and the UK, with smaller bodies of research in other Anglophone countries (Hemphill et al., 2008; Hinde and Dixon, 2005; Spence et al., 2009). Studies have counted the number of neighborhood amenities present within a buffer around low-income housing (Lee et al., 2003), reported on self-reported feelings of safety (Timperio et al., 2005), and created disparity indexes based on census data (Black et al., 2010). In most cases, the results of these neighborhood analyses were analyzed along with rates of obesity drawn from large-scale community surveys. Policy drawing from this research has pushed for improvements to school lunches, safer and more walkable environments, and greater regulation of food advertising and nutritional claims to improve the environment in which individuals make dietary decisions (Sallis and Glanz, 2009; Story et al., 2008).

Research in this area has concentrated on the failure of both governments and corporations to provide equitable access to neighborhood amenities. However, policy solutions based on this research tend to fixate primarily on the neighborhood scale. Sallis and Glanz (2009) list several such initiatives, noting one California program's efforts 'to demonstrate that by transforming the food and physical activity environments of resource-poor, low-income communities, it is possible to change norms that foster unhealthy food choices and inactivity' (p. 141). Another similar effort in the USA includes as goals 'installing bike racks, getting more fruits and vegetables on the shelves of corner stores, building walking paths and bike trails, supporting school cafeteria reforms, offering physical education in schools, and making health considerations part of planning and development decisions' (p. 141). Responses in the UK have been broadly similar, with a focus on creating spaces for urban agriculture, strengthening local food systems, and ensuring that safe environments more conducive to physical activity are found in all neighborhoods (Ashton et al., 2010; Greater London Authority, 2013). The goal of these projects is thus engineering the ideal physical environment, one where healthy eating and physical activity are the most accessible and attractive choice.

While these initiatives have value, the focus on neighborhood space minimizes the place of structural reform. While some authors suggest reforming the practices of large food producers, processors, and distributors, political efforts to do so have encountered greater political resistance and achieved more modest results (Lee et al., 2011; Malhotra, 2012; Nestle, 2002). Similarly, while studies have found links between perceived neighborhood safety and physical activity, few policy responses have connected obesity with efforts to lessen the economic and racial segregation that may contribute to high crime rates (Cutts et al., 2009; Franzini et al., 2010; Peterson and Krivo, 2010). Certainly, metrics which both identify problems and assess solutions are more difficult to create at a systemic level, complicating efforts to argue for political action at a larger scale. Still, the disjuncture between research and policy in this area is worth noting.

The identification of obesity as a core problem in work is itself also problematic. The use of individuals' BMI, for example, has been

questioned even within public health for its sometimes dubious correspondence with health outcomes (Evans and Colls, 2009; Franzosi, 2006; Guthman, 2011). While recent studies pay more attention to the influence of the physical and social environment, action to reduce obesity and promote healthy eating (variously defined) still stigmatizes fat bodies in what Rawlins (2008: 138) terms 'body fascism' (see also Guthman, 2007; Longhurst, 2005). Evans et al. (2012) argue that anti-obesity educational programs now exist alongside efforts to create healthier environments, making clear which bodies are desirable in urban redevelopment and which are to be 'designed out'.

Obesity also can act as a marker of both class and racial distinction, normalizing fit, white, and middle-class bodies against non-white and/or poorer fat bodies lacking the self-control or ability responsibly to govern themselves. In her review of research on food and race, Slocum (2010) notes the tendency to conflate race, obesity, and poor eating habits in both health and alternative food efforts. This tendency is especially acute in the USA, where rates of obesity differ most sharply across racial groups (Clarke et al., 2009; Gatineau and Mathrani, 2011). Whatever correlations exist between self-identified race and rates of obesity, though, to argue that this relationship is the result of collective socialization, a lack of social capital, or culturally specific foodways pathologizes already marginalized populations (Boardman et al., 2005; Franzini et al., 2010; Herrick, 2008).

This is true of social class as well. When celebrity chef Jamie Oliver's televised 'food revolution' targeted the working-class white community of Huntington, West Virginia, it leveraged the shame that individuals felt at their body status to encourage healthier eating, rather than the conditions that encouraged consumption of highly processed foods (Slocum et al., 2011). As another example, a planning document from the UK City of Westminster advocating for increased governmental action on public health suggests tying welfare benefits to compliance to exercise programs proscribed for weight reduction, explicitly targeting low-income populations (BBC News London, 2013). At the neighborhood level, as Guthman (2011) has argued, the amenities most often promoted in anti-obesity policy – parks, bike trails, walkable streets, healthy food retailers – are most often found in upscale urban neighborhoods. Anti-obesity and healthy eating efforts thus connect with neighborhood gentrification and the social reproduction of self-managing individuals (see also Pudup, 2008).

In research on obesogenic environments, then, race and class can easily become conflated with neighborhood space. Herrick's (2008) study of an anti-obesity effort in Austin, Texas, notes how high rates of obesity on the city's predominantly Hispanic east side resulted in the 'elision of Hispanic and East Austin under the banner of "high risk"' (p. 2730), medicalizing racial and class-based inequalities. While Herrick focuses on how the Austin project targeted specific populations, a similar point could be made about efforts that draw from social ecology's emphasis on environmental change. By stigmatizing neighborhoods as 'obesogenic', anti-obesity programs legitimate reinvestment and neighborhood redevelopment meant to encourage healthier forms of life, 'reinstrumentalizing' neighborhood space to produce desirable bodies that place few demands upon the state (Herrick, 2009). This 'spatial pathologization' (Craddock, 2000: 10) targets areas as much as bodies, seeking to quarantine threats to the general health, destroy their source, and create healthier solutions in their place. This governance of bodies demonstrates what some authors have called the biopolitical tendency of anti-obesity efforts, their work to produce forms of life that are politically and economically productive (Evans and Colls, 2009; Julier, 2008; Wright and Harwood, 2009).

In coalescing around obesity as a major health threat, policy-makers have sought to govern bodies in ways that reduce obesity's

perceived negative social and financial costs. While anti-obesity efforts often champion a positive message of health promotion, they also necessarily include a stigmatization of obese bodies and the spaces that produce them, a process that conflates obesity with non-normative class and/or racial identities. Neighborhood redevelopment intended to eliminate obesity-generating factors may be well intentioned, but in its emphasis on recreating the normative spaces of middle-class communities (e.g. green space, walkability, and new retail), it can act as a pathway to gentrification. The increasingly common use of GIS in this research, discussed in the next section, is a third piece of this puzzle, as it locates and bounds food problems within specific pathologized spaces.

IV Putting food deserts on the map

Food deserts are perhaps best understood as a subset of research on obesogenic environments. In contrast to the latter, which may be found in middle-class suburbs as well as core urban areas, food deserts explicitly include low household incomes as a definitional criterion. In addition, obesogenic environments work emphasizes the abundance of obesity-promoting environmental features, while food deserts are defined by a lack of healthy food options. Still, the two concepts share a common ideological heritage: emerging work in public health on social ecological models of obesity.[4]

The term 'food desert' came to prominence through UK government sponsored studies in the late 1990s (Cummins and Macintyre, 2002). The first major academic studies on British food deserts were published by geography and public health researchers in a 2002 edition of *Urban Studies* (Clarke et al., 2002; Cummins and Macintyre, 2002; Whelan et al., 2002; Wrigley, 2002). Consistent with broader Third Way policies, initiatives focused on food deserts worked from a model of 'the state as enabler, or the state as animator' (Rose, 2000), incentivizing the relocation or renovation of private food retailers and encouraging the work of non-profits working on alternative food projects including community gardens.

Though the study of food deserts was first popularized in the UK, the USA has not lagged far behind. Several notable US studies were published only a few years after the first in the UK (Block, 2006; Zenk et al., 2005). The 2008 US Farm Bill contained a provision specifically mandating study of food deserts, and in 2010 First Lady Michelle Obama introduced the Healthy Food Financing Initiative, designed to 'to eliminate food deserts across the country within seven years' (US Department of Health and Human Services, 2010). Retailers including Walmart and Target have argued for access to core urban markets in part by framing their stores as the solution to food deserts (D'Innocenzio, 2010; Jones, 2011). Conversely, neighborhood activists and non-profit agencies have used food desert research to frame the need for increased urban agriculture and the development of small, community-based enterprises, framing them as an issue of food justice (Bybee, 2009; Smith, 2012). The vast majority of work on food deserts has focused on urban neighborhoods, although a small but growing set of studies do consider rural communities (Hubley, 2010; McEntee and Agyeman, 2010). Work on food deserts has to this point been almost completely confined to Anglophone countries (Battersby, 2012).

Methodologically, most research on food deserts has followed one of two tracks, what one recent review termed either *market basket* or *geographic studies* (Beaulac et al., 2009). Early research largely used the market basket approach, in which all food stores in low- and/or moderate-income neighborhoods are surveyed for the price, amount, and quality of certain healthy foods. Comparison across store types and neighborhoods identifies how accessibility and affordability may differ. Cummins and Macintyre (2002), for example, measured the prices of 57 different food items in several Glasgow

neighborhoods, concluding that store types were the best predictor of food prices, although stores in which processed food was cheapest were most common in low-income areas. Block and Kouba's (2007) study in Chicago also found lower prices in suburban Oak Park compared to Austin, a low-income urban neighborhood.

Recent work falls more commonly into the category Beaulac et al. (2009) term 'geographic studies'. These analyze the proximity and density of retail food outlets in specific neighborhoods, often but not always focusing on supermarkets as markers of access to affordable, healthy food. Zenk et al. (2005) were among the first to use this method of analysis, computing the distance between the centroid (center point) of Detroit neighborhoods and major supermarkets, which often function as a proxy for cheap, healthy foods. By regressing this measure on race and income data for these neighborhoods, they highlighted several areas with low access to healthy food. Subsequent studies have combined several such measures, such as distance to the nearest store and number of stores within a certain buffer distance (Apparicio et al., 2007; Larsen and Gilliland, 2008). Those areas which combine poor access to large food retail with high measured social disparities are marked as food deserts. These methods continue to be refined, with one recent project combining market basket and geographic studies to map the 'nutritional terrain' (Goldsberry et al., 2010).

On a practical level, the recent popularity of geographic food desert studies has been aided by the increasingly common use of geographic information systems (GIS) technology by geographers and non-geographers alike. The adoption of ESRI's desktop software ArcGIS by many academic institutions and planning agencies over the last decade has eased the process of spatial analysis for many researchers. By combining listings of food retailers from private databases with publicly available demographic data, an analysis of the distance to and density of neighborhood food stores is now a relatively simple project. Online maps of food deserts are now available from both the USDA and PolicyLink, a national non-profit focused on equitable development.[5]

As a result, GIS-based analyses have made food access calculable in a spatial sense, defining the boundaries of at-risk neighborhoods at a fine scale. They present a 'god's eye' view representing food deserts as objective, calculable spaces rather than as sites of everyday practices (de Certeau, 1984; Haraway, 1988; Scott, 1998). These maps are also easily translated into action. PolicyLink's maps of limited access are created to allow policy-makers easily to target areas where new retail development should be prioritized (Treuhaft and Karpyn, 2010). Gallagher's (2006) much publicized analysis of food deserts in Chicago goes further, setting the stakes of fixing food deserts as years of life lost to neighborhood residents and campaigning for more supermarkets as a way to reclaim those lives. In contrast to market basket studies, which focus on the presence, quality, and price of particular foods, geographic studies treat stores as proxies for the foods that they carry, uniformly endorsing large supermarkets as the best solution to poor food access.

In this way, the preponderance of current research on food deserts treats them as discrete, pathologized spaces outside of an otherwise healthy urban 'foodscape'. By presenting individuals living in these neighborhoods mainly with inexpensive, nutritionally poor food options (it is argued), food deserts contribute to rising levels of obesity. The social ecological emphasis on individuals as adaptive organisms is evident here in analytical models that treat neighborhood residents as passive and immobile, with food consumption habits determined largely by their nominal place of residence, a site that itself may often change for low-income households lacking financial security.

As Cummins et al. (2007) have noted, this approach also neglects a consideration of food deserts as relational sites comprised by the daily mobility of residents and their migration

history, affective attachments between individuals and particular foods and food sources (based on life history, cultural preference, or class status), and broader patterns of economic and racial segregation across metropolitan areas. While work on food deserts in the USA has mainly been done by epidemiologists, geographers have played a more significant role in the UK and Canada, placing low-access neighborhoods within the context of retail economic restructuring or providing longitudinal analyses of changes in supermarket access (Clarke et al., 2004; Cummins, 2005; Donald, 2013; Larsen and Gilliland, 2008; Wrigley et al., 2002). The more nuanced conceptualization of the relationship between various actors and their neighborhood context shown in these pieces, while more the exception than the rule, demonstrates the potential breadth and geographical richness of this line of research when done in a more interdisciplinary manner.

Still, the reliance on strict measures of distance in most food desert research naturalizes food deserts, treating them as anomalies in an otherwise functional food system. In the USA specifically, most work on food deserts concentrates on methods by which to locate them, measure their effects, or assess proposed solutions, such as the opening of new supermarkets. Only a handful of projects study *how* food deserts emerge over time (Black et al., 2011; Larsen and Gilliland, 2008; McClintock, 2011). As a result, these projects focus primarily on creating environments that promote healthy choices and less on the political and economic decisions which shaped these environments to begin with.

V Food deserts: disciplining poor bodies

Reflecting a confluence of social ecological approaches to public health, action to reduce obesity rates, and advances in GIS technology, initiatives to study and address food deserts are at the forefront of work addressing place effects on health (Riva et al., 2007; Roux, 2001). The use of this work to create a new and healthier urban food landscape operates as a spatialized form of 'neoliberal paternalism'. As described by Soss et al. (2011) in their book *Disciplining the Poor*, neoliberal paternalism asserts as a founding assumption that 'the poor lack the competence to manage their own affairs' (p. 25), reflecting a view of social dysfunction as the product of what Wendy Brown terms the 'mismanaged life' (Brown, 2005: 42). To remedy this, neoliberal paternalism revises the Keynesian welfare state in order to restore social order to low-income communities. The 1996 welfare reform legislation in the USA, for example, sought to end what critics saw as dependency on government largesse by tying benefits to work requirements and setting lifetime limits on the amount of benefits individuals could receive. The goal of such policies is not simply to encourage more constructive social behavior, but 'to change a person's basic values and self-conceptions, reconstructing the citizen as a different kind of self-regulating subject' (Soss et al., 2011: 26). The ideal neoliberal subject valued through these projects is first and foremost 'a consumer, worker, and taxpaying customer of the state' (p. 22).

The 'neoliberal' in neoliberal paternalism is most evident in the casting of individuals as calculative consumers, capable of a self-regulative morality that is largely cast in market terms. In Brown's description, 'neoliberalism equates moral responsibility with rational action; it erases the division between economic and moral behavior by configuring morality entirely as a matter of rational deliberation about costs, benefits, and consequences' (Brown, 2005: 42). In other words, within neoliberalism, the moral citizen is one who optimizes their health and productivity through deliberate, rational self-management. Although *Disciplining the Poor* primarily focuses on policy and practice in welfare programs, food desert policies demonstrate a similar concern with increasing individuals'

capacity to govern rationally their own appetites and bodies. In this way, they can be read as an expanded, spatialized form of governance that builds upon the system of sanctions and incentives described by Soss et al. (2011), one that reforms the poor choices made by low-income populations. Interventions to address obesity specifically advocate policies which 'nudge' individuals to make healthier choices. This focus on choice highlights how individuals are primarily treated as consumers in this approach, not as citizens who may demand better working conditions, greater or different forms of food assistance, or alternatives to industrialized food production systems.

However, a tension exists between this emphasis on consumer choice and the social ecological insistence that individuals ultimately are adaptive to their environment, necessitating the paternalism of the state and health experts. This is perhaps most clearly evident in the related push for 'libertarian paternalism' or, as it is often more simply known, the 'nudge' (Ariely, 2010; Jones et al., 2010; Thaler and Sunstein, 2003). Thaler and Sunstein, the two most vocal advocates of this view, cite work in behavioral economics to argue against the assumption of the pure rational actor in economic theory (Kahneman and Tversky, 1979; Simon, 1955). In their view, individual choices are always responsive to context and contain 'systemic blunders' tied to the heuristic schemes and information processing hard-wired into the brain (Thaler and Sunstein, 2003: 176). Rather than continue a pointless pursuit of rational choice models, advocates of libertarian paternalism argue instead that 'choice architects' should embrace their role in shaping individual choices and seek to nudge individuals in directions that lead to both their own benefit and that of society as a whole (Thaler and Sunstein, 2008a, 2008b). A common example is the decision to make enrollment in a retirement plan the default choice rather than an opt-in for employees, resulting in a more financially secure old age that is in turn less burdensome for society as a whole. This approach preserves individuals' freedom to choose, and is hence 'libertarian', but also paternalistically stacks the deck to encourage certain choices over others.

In her appraisal of nudge policies in the UK, Pykett (2011) notes how they neglect 'embodied subjectivity' (p. 229). A focus on the brain's neural pathways alone, she argues, can homogenize populations and minimize the importance of 'deeply ingrained social norms, expectations and aspirations pertaining to the specific historical and discursive experiences of both men and women alike' (p. 230). The 'universal, irrational subject' (p. 233) posited by libertarian paternalist approaches is ungendered (and also unraced, unclassed, and unaged), lacking any kind of social history or affective attachments. Neurology can help explain the relationship between cognition and embodiment (Gibbs, 2006) but, in practice, research on environmental influences has largely assumed a uniform effect on residential populations. As a result, public health experts can rationalize the food environment through analysis of key metrics. In the case of food deserts, interventions are designed through the work of what we might call *choice landscape architects*[6] who create the environments that frame everyday food consumption decisions. In this sense, the spatial politics of food deserts are an expansion of the neoliberal paternalism identified by Soss et al. (2011), producing urban landscapes that result in moral behavior.

The Foucaultian insistence that individual choices are unavoidably situated within fields of power is highly relevant here. That is, the choice between a fried chicken and fruit salad is never simply a matter of nutrition. Rather, reforming food consumption is about socialization into foodways that are inextricably tied up in social positions defined through race, class, and gender. As Soss et al. (2011) argue, low-income populations under neoliberal paternalism are seen as 'undisciplined and irresponsible; their work ethic is underdeveloped;

their sexuality is unrestrained; and, as a result, their communities are plagued by disorder and pathology' (p. 81). They note the connection between these perceptions of poverty and racial stereotypes. This point could be extended to the obesity debate, which focuses on undisciplined eaters similarly typified by stigmatized class and race identities.

However, rather than the disciplining system of welfare program penalties detailed in *Disciplining the Poor,* initiatives to solve food deserts act only indirectly upon the individual. These projects thus aim to produce new kinds of citizens through their neighborhood spaces, slim-bodied consumers whose rational, nutritious food shopping demands little of the state. In this sense, policies designed to ameliorate food deserts *enhance* individuals' ability to make good choices, overcoming the limitations of a body that 'has excellent physiological defenses against the depletion of body energy stores, [but] has weak defenses against the accumulation of excess energy stores when food is abundant' (Hill and Peters, 1998: 1371). Each person's ability to choose, to be a consumer, is both a fundamental right and fundamentally flawed, requiring the actions of the state and private actors to reach its fullest potential. In this sense, Thaler and Sunstein's contradictory framing of 'libertarian paternalism' is simply an extension of a deeper contradiction within neoliberalism itself, one which treats the market as both natural and constructed, liberated from state control but also fashioned by it. While this paper lacks the space to consider how food deserts may represent a broader shift in urban poverty governance toward such environmental approaches, the popularity of the 'nudge' certainly suggests the possibility of such a shift.

In addition, locating the source of obesity within specific neighborhoods both pathologizes these spaces and potentially excludes a more systemic critique of both the conventional food system and urban development patterns. Certainly, there is value in highlighting the lack of resources and amenities in low-income neighborhoods. Yet geographic studies of food deserts often define these areas through their absences, particularly the lack of major supermarkets. As a result, the problem of food deserts is a neatly bounded one, solved by creating new food retail where none currently exists. A more sophisticated conceptualization of spaces as fundamentally relational in nature calls this approach into question (Cummins et al., 2007; Massey, 2005). Supermarkets flourished in the suburbs, for example, precisely because of white flight in the 1960s and 1970s and zoning policies that encouraged suburban sprawl. Normalizing them as a model of a healthy food system implicitly sanctions the policies and processes that led to their creation. In addition, incentivizing new supermarkets implies that these stores provide a net social and environmental benefit, a questionable assertion given the reliance on low wages and input-intensive agricultural practices in conventional food production. The identification of certain neighborhoods as food deserts may thus identify the symptoms of a dysfunctional food system and patterns of economic and racial segregation, but do little to shed light on the more geographically expansive processes that cause them. The result is to *place* the blame (in multiple senses of the term) in poor neighborhoods, rather than in policies and actors which shape both urban development and food systems.

Emerging work in the area of food justice contests this framing of low food access (Alkon and Agyeman, 2011; Gottlieb and Joshi, 2010). Primarily based in the USA and explicitly building off environmental justice work, food justice considers how efforts to create an alternative, more sustainable food system intersect with broader efforts to empower communities of color. Recognizing that 'race and class play a central role in organizing the production, distribution, and consumption of food' (Alkon and Agyeman, 2011: 4), food justice efforts focus around projects that improve the food sovereignty of low-income communities through initiatives

ranging from urban agriculture to improving working conditions for farm workers (Bybee, 2009; Common Dreams staff, 2012). The saliency of race in discussions of food access and poverty in the USA may be responsible for the vibrancy of this movement there, though it is certainly not limited to that national context (Food and Fairness Inquiry, 2010; Haddad et al., 2012). This more systemic perspective resists spatial compartmentalization of food access as a problem, advocating instead for communities of color to have a greater voice in all areas of the food system. Rather than simply bringing 'good food to others' (Guthman, 2008), these efforts ground alternative food efforts within the traditions of the communities they serve.

As Guthman has argued, solutions to food deserts too often involve redesigning low-income communities to be more like middle-class neighborhoods through the creation of new retail and neighborhood amenities, primarily new grocery stores but also 'foodie' destinations such as community gardens, farmers' markets, and food cooperatives (Guthman, 2011). Funding to improve food access flows not to community members themselves but in most cases to retailers, who become purveyors of food assistance through their low-priced goods and their provision of jobs for the community. As a result, it is private industry that becomes the agent of revitalization. By governing through neighborhood space, the majority of these projects seek to encourage thin bodies, but also the spaces of middle-class urbanity, in which problematic bodies marked by weight, and to a significant extent race and class, no longer exist.

VI Alternatives: embodied subjectivities, mapping subjects, and political ecology

By examining the rise of social ecology as a primary model of how individuals relate to their environments and its application to the 'problem' of obesity, this paper argues that work on food deserts does little to lessen the stigma on low-income communities and their residents. Because it presents poor food access as a spatially bounded phenomenon, research on food deserts normalizes the 'foodscape' of middle-class neighborhoods and thus makes a more systemic evaluation of the conventional food system more difficult. Drawing on a model that emphasizes individuals' adaptivity to their environment, work in social ecology treats individuals as 'universally irrational', necessitating the intervention of choice landscape architects who can shape environments to promote optimal choices. Initiatives to improve the 'food environment' thus represent a spatialized form of neoliberal governance aimed at producing slim consumers less burdensome to the state.

Despite its political currency, the future of research on food deserts and neighborhood influences on health more generally remains open. A front-page *New York Times* story in April 2012 cited two longitudinal studies questioning the connection between neighborhood food environments, food consumption, and rates of obesity (Kolata, 2012; see also An and Sturm, 2012; Lee, 2012). Similarly, a much publicized review of food desert literature found no clear link between supermarket access and BMI (Boone-Heinonen et al., 2011). The widespread interest in these findings demonstrates both the popular appeal of food deserts as a concept and the possibility for crafting alternative definitions of low-access areas that avoid the problems outlined in this paper.

One path forward may entail recognizing the multiple ways in which individuals value and interact with their food environment, rather than elevating a single optimized rationality defined primarily through nutrition and cost. Rather than designing interventions meant to rationalize supposedly irrational food behaviors, greater attention to how these embodied differences matter in individuals' everyday provisioning practices may help fashion a more nuanced and less stigmatizing portrait of low-income neighborhoods.

These could emphasize the multiple normative frameworks that shape these practices, such as how family relationships, concerns over class status, or cultural norms influence food procurement.[7] Opening up the definition of health itself beyond the measurement of BMI is also an important step. Work in this area may also involve picking up on an early thread of attention to the food procurement habits and values of individuals in low-income areas that has been markedly less emulated than GIS-based geographic studies (for exceptions, see Park et al., 2011; Shaw, 2006; Whelan et al., 2002). Such an approach may forefront more structural concerns, including access to transit or the effects of racial and/or economic segregation on overall mobility (Ledoux and Vojnovic, 2012).

Indeed, breaking down the divide from social ecology between analyst and organism can draw from work under the broad umbrella of critical GIS (Sheppard, 2005). This work concentrates particularly on increasing the visibility of informal or affective dimensions of social life, such as feelings of safety while traveling through urban space (Kwan, 2008) or the household economies of post-Soviet Russia (Pavlovskaya, 2004). Similar recent work on mobilities has stressed the importance of understanding the body's relationship to the city, mapping its movements and connectivities (Conradson and Latham, 2005; Cresswell, 2006). By questioning the widespread 'god's eye' view of GIS, work on participatory GIS has stressed community involvement in the research process, shifting research subjects from a 'missing object to a mapping subject' (Pavlovskaya and Martin, 2007; see also Elwood, 2006), a phrase that resonates with the critique of food desert work outlined in this paper. Rogalsky's (2010) use of GIS to map the daily mobility of working poor women, for example, highlights how aggregated data on transportation options in low-income communities present a 'too-optimistic' picture of the transition from welfare to work. Approaches such as these, especially those which incorporate research subjects as co-investigators, would heed the call from food justice researchers and activists to include more explicitly the concerns and voices of marginalized populations in food systems work.

Lastly, while political ecology shares the emphasis on human-environment relations also common in social ecology, the former has more thoroughly included work interrogating the production of urban environments (Heynen, 2006; Keil, 2007; Robbins, 2004; Swyngedouw and Heynen, 2003; Walker, 2007). Political ecology's framing of 'place not as a location or portion of geographical space, but as being constructed and reconstructed out of a particular set of social relations, experiences, and understandings' might provide a basis for other kinds of geographic analyses (King, 2009: 42). Taking a broad view to understand the political ecology of food consumption – how varying food sources come to be located in particular sections of the city – might question the naturalizing language of market relations that positions low-income neighborhoods as just another emerging market. Instead, such an approach would highlight how patterns of food access are determined through the action of state and market actors in the zoning or evaluation of potential store sites, regulations around agricultural use of urban land or direct sales by growers, or the routing of public transit networks. The large body of work on commodity chains is another resource, potentially highlighting the systems of production that bring goods into urban neighborhoods (Cook, 2004; Hartwick, 1998; Jackson et al., 2006). This approach would frame food deserts as produced by (and symptomatic of) the broader workings of a capitalistic, highly centralized food system, rather than simply aberrations in an otherwise functional market economy.

Food deserts are emblematic of new, geographically aware public health approaches aimed at creating healthier, more livable cities. In current practice, most research in this area continues to pathologize both neighborhoods and their residents, positioning them as hapless victims in

need of paternalist intervention. By better situating these neighborhoods within their geographic context and opening up strict definitions of healthy neighborhoods and bodies, better alternatives for understanding the relations between neighborhoods and their residents may be developed. As Jones et al. (2010) recognize, the incorporation of the environment as an actor in everyday behavior need not necessarily entail experts who:

> deploy novel, even manipulative, psychological techniques in their spatial machinations ... It is possible to see how it could be a tool of place-building, where acts of community consultation and engagement co-constitute techniques associated with libertarian paternalism to form inclusive and creative places of deliberative psychological action. (Jones et al., 2010: 497)

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Notes

1. This tool is available at http://www.ers.usda.gov/data-products/food-access-research-atlas
2. While the same term was also used by Murray Bookchin to describe his communalist vision of nature-society relations (Bookchin, 1990), 'social ecology' as described here has a different lineage with a less radical political message. The two do share an interest with the Chicago school in an ecological framing of social relations.
3. In *The Birth of Biopolitics* (2008), Foucault does briefly refer to a similar type of spatial governance, which he terms 'new techniques of environmental technology or environmental psychology' (p. 259) which motivate individuals to particular forms of action by means of incentives in their environment. Unfortunately, this is a subject to which Foucault never returns.
4. Research on food access, of course, has a long history. In the USA, Progressive era settlement houses, community gardens, school lunch programs, and anti-poverty programs have all tackled the perceived inaccessibility of food to low-income populations (Caplovitz, 1967; Lawson, 2005; Levine, 2008; Poppendieck, 2010; Shapiro, 1986). By specifically encouraging private-sector solutions to encourage healthy consumer choices, food deserts are a neoliberal addition to this history.
5. PolicyLink's map of limited supermarket access is available at http://www.policymap.com/maps.
6. Thanks to Joe Soss for suggesting this phrasing.
7. Barnett et al. (2008) make a similar point in their extension of Sayer's concept of 'lay normativity'. They argue that individuals constantly engage in everyday reasoning that represents a continued refashioning of the self as a moral agent – 'ongoing elaborations of the self' (p. 649).

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