

6

Poverty, Food Insecurity, and Health among Youth

DON WILLIS AND KEVIN M. FITZPATRICK

Health is intimate. It is a matter of life and death, as well as quality of life. Not only does it impact how we navigate our daily lives, but it can dramatically affect relationships, jobs, and sense of self. Simply put, we experience health on a deeply personal level. And while there is an extant body of literature that documents this connection, we also know that, good or bad, health is not evenly distributed (Wilkinson 2005; Marmot 2004). Some people are more likely to experience healthy lives than others and, in turn, have significant social and cultural advantages contingent on that good health. Moreover, these health inequities do not happen by chance; they are achieved through a particular way of relating to one another and the places we both inhabit and construct. The result: unequal lives in the most literal sense.

Thus, health is not just intimate and personal; rather, it epitomizes the intersection of biography and history. Health is an alchemy of unique personal factors and social forces operating beyond the individual. Therefore, understanding health requires what C. Wright Mills called a “sociological imagination,” that is, a capacity to trace the “ways in which personal troubles are connected to public issues” (Mills 2000, 185). With this connection in mind, the goal of this chapter is to spark the sociological imagination in a way that might complicate the common understanding of health as the result of individual choices and behaviors by clarifying its linkages to poverty, and, a particular indicator of poverty, food insecurity.

Who Is at Risk?

Poor health closely follows patterns of socioeconomic disparity and concentrated poverty (Fitzpatrick and LaGory 2011). Families with lower incomes and limited education can expect shorter, less healthy lives than those higher up the socioeconomic ladder. Unequal health is related to unequal exposure to risks for poor health, and socioeconomic status can be considered a fundamental cause of disease because it determines who becomes “at risk of risk” (Link and Phelan 1995, 85). For example, fewer than 10 percent of households above 185 percent of the poverty line

were food insecure in 2014. That is in stark contrast to the nearly 40 percent of households below the poverty line who experienced food insecurity the same year (Coleman-Jensen et al. 2015). Food insecurity, for children especially, is a serious health risk. The seriousness of diet-related diseases such as obesity, diabetes, and cardiovascular diseases is clear as they continue to be leading causes of premature death in the US population as a whole (Mokdad et al. 2004; US Burden of Disease Collaborators 2013). These patterns of unequal health and risk exposure cannot be explained by differences in choices and behavior; rather, they require an understanding of the context that encompasses everyday lives.

Poverty, like health, is also unevenly distributed. Some are more likely to experience poverty than others, namely children, and especially minority children. Since the mid-1970s up to 2010, poverty rates for children (under age eighteen) have been higher than any other age group (DeNavas-Walt and Proctor 2015). This disproportionate burden of poverty on youth makes them a particularly vulnerable population when it comes to health and well-being. For young people experiencing poverty, it is not just general life chances (e.g., learning basic skills, getting a degree, getting a job, etc.) that are at stake, but life itself. Indeed, the odds of an infant dying before his or her first birthday are heightened for those born into lower socioeconomic status. Moreover, childhood is an especially crucial period in the overall development of health and well-being across the life course. Experiences of poverty and insecurity in childhood can have lasting effects on health and well-being well into adulthood.

Linking Poverty, Food, and Health

Context matters. Everyday choices and behaviors impact our health, but those everyday choices and behaviors do not occur in a vacuum—they happen within, and are shaped by, a complicated, multidimensional environment. Part of what makes up that environment are other human beings, that is, the social context. Social contexts can either constrain or enable healthy living. Constraints may operate indirectly through their influences on choices and behaviors or directly through effects on the body (i.e., air or water pollution). As we have already described, poverty is a particularly constraining context to live and (sometimes literally) breathe in.

Among the many constraints of living in poverty are the strains placed on household food budgets. Moreover, housing costs limit the types of neighborhoods where low-income families can afford to live in relation to healthy foods. If access to food is primarily limited to the convenience store where there is no fresh produce or vegetables, place matters with profound effects on nutrition and health. There is a material reality of poverty that puts its inhabitants at a higher risk of bad health, in part owing to less nutritious diets. However, to paint a complete picture of poverty and how it impacts health we must also acknowledge the psychosocial dimensions of food insecurity. Of course, separating out the material from the psychosocial can be a difficult and, at times, pointless endeavor. But in the case of food insecurity the point is crucial to understanding the depth at which it, and poverty in general, operate when they impact health and well-being. The sections below provide some insight

into how material as well as the psychosocial dimensions of food insecurity as a form of poverty act to stunt what might otherwise be healthy lives.

Material Dimensions of Food Insecurity

The most obvious and direct impact of food on health is through its nutritional value, or lack thereof. Meals for the food insecure might decrease in size, frequency, or quality. Food insecure children tend to experience diets higher in sugar, fiber, and fat, and lower in vegetable consumption; moreover, they report more perceived barriers to physical activity and, subsequently, less actual physical activity (Fram, Ritchie, et al. 2015). While some conflate food insecurity and hunger with a lack of calories, it is the deficiency in basic nutrients that is most harmful to health and even more difficult to see. Globally, nearly two in three deaths of children are attributed to nutritional deficiencies (Caballero 2002). Carolan refers to micronutrient malnutrition as “hidden hunger” (2011, 63), because it does not necessarily look like the sunken-in bodies of starving children that many associate with hunger. Children in the United States with calorie-rich diets and low vegetable consumption remain food insecure, and worse, their bodies remain hungry for proper nutrition regardless of weight status.

Given the insight that food insecure children have worse diets and more barriers to physical activity than their food secure counterparts, we have one logical explanation for the relationship between food insecurity and obesity. This suggests that food insecurity poses a serious nutritional/material risk for children’s physical health. But the impact of food insecurity on physical health goes far beyond obesity. Research has shown relationships between household food insecurity and children’s physical function (Casey et al. 2005), hospitalization (Cook et al. 2006), asthma (Kirkpatrick, McIntyre, and Potestio 2010), oral health (Chi et al. 2014), and cardiovascular health such as hypertension, hyperlipidemia, and diabetes (Seligman, Laraia, and Kushel 2010). Clearly there are significant nutritional/material pathways through which food insecurity directly impacts physical health.

In addition to the *consequences* of material conditions of food insecurity, there are also certain physical realities, such as geographic location, that might be considered part of what *causes* food insecurity. This claim, however, is contentious—as highlighted near the end of the following section.

Insecure Spaces

A privilege uncommon to the poor is the ability to choose where to live. Both economic position and life-course position play significant roles in determining the spaces we inhabit. Being both a child and poor, therefore, significantly constrains people’s ability to choose where they live and the spaces they may occupy on a daily basis. Not only are the poor priced out of certain neighborhoods, but the act of moving is itself an expensive endeavor. This limited mobility of poor and youth populations has serious implications for their health. While poverty and age constrain the spaces we inhabit, the spaces we inhabit subsequently constrain a number of other daily activities (e.g., diet and exercise) that shape health over time. Thus, while

space impacts everyone's health, low-income youth are at a heightened vulnerability to experience this "spatial disadvantage."

The spaces we occupy are important predictors of health outcomes. Simply put, "space imposes bounds on both our access to resources and knowledge of the resources available" (Fitzpatrick and LaGory 2011, 69). As noted earlier, some spaces have limited access to grocers carrying fruits and vegetables. Food insecure households tend to be further from supermarkets, but closer to convenience stores (Thomas 2010). Supermarkets tend to be located in or near white, wealthy neighborhoods as opposed to poor, black neighborhoods, which are home to a disproportionate number of convenience and liquor stores (Morland et al. 2002). Adolescents whose school neighborhoods are characterized by higher availability of convenience stores tend to have a higher BMI (Body Mass Index), while neighborhoods with more supermarkets are associated with lower BMI among adolescents (Powell et al. 2007). The spaces we occupy when we are at home, school, or work can expose us to either healthy or unhealthy foods, and this exposure can make a significant difference in our nutritional health.

Spaces with limited access to healthy foods are often referred to as "food deserts." One might reasonably suspect that food deserts represent a breakdown in the US industrial food system, or a failure of the free market. This view of the problem misses the point; that is, these spaces are void of healthy food precisely *because* of the existing US food system, which treats food as primarily a commodity. When controlling for the purchasing power of zip codes within the Chicago area, Alwitt and Donley (1997) found that there was no difference in the number of supermarkets between high-income and low-income areas. Supermarket owners are responding rationally given the profit-driven logic of capitalism. This reveals one of the major reasons why market-based solutions are limited in their capacity to feed the poor in a way that would support their health and well-being. Treating food as a commodity in a free market (that is, primarily based on its exchange value from which profit is to be extracted) rather than as a substance intended for human health (its use value) is part of what drives healthy food away from those who need it the most. As economist Amartya Sen pointed out over thirty years ago, "there is nothing extraordinary in the market mechanism taking food away from famine-stricken areas to elsewhere. Market demands are not reflections of biological needs or psychological desires, but choices based on exchange entitlement relations" (1981, 161). From this view, spaces such as food deserts are seen as *achievements* of market mechanisms, rather than a failure or accidental outcome.

Moreover, the distance between a family and the nearest supermarket matters little if they lack the money to purchase food. Scarcity is simply not the fundamental *cause* of hunger or food insecurity (Sen 1981; Lappé and Lappé 2002; Scanlan, Jenkins, and Peterson 2010). A poor family surrounded by a cornucopia of food remains food insecure. A wealthy family living at the center of a food desert remains capable of accessing most any food they please. The barrier between the poor and healthy food is partly geographical, but it is absolutely social—even the geographic barriers are deeply related to the social structuring of residence by class and race. When we treat a vital source of health and well-being like food as a commodity,

we have put in place an economic structure that inherently favors the health of the wealthy over that of the poor.

Psychosocial Dimensions of Food Insecurity

Food insecurity is partially a material condition—an empty refrigerator, a neighborhood with nothing but gas station food and liquor stores, the physical pangs of hunger or stunting of development—but it also has deeper, less obvious, consequences. Food is not just a material thing with solely nutritional purposes—food carries social meaning. For example, sharing a meal can signify to those involved that, at that time and place, no competition exists for vital resources such as food. Another example is the act of feeding, which is linked to traditional gender roles for women in the United States (DeVault 1994). Because of this linkage between feeding and gender roles, mothers in food insecure households may experience more than economic and nutritional strain, but also social strain related to the gendered expectation for women to be caretakers (e.g., food shoppers and preparers, and increasingly family nutritionists). This added social strain may in part be why food insecurity is so consistently related to obesity for women as opposed to men, for whom there is rarely any connection (Franklin et al. 2012).

Food can also signify social status. As Pierre Bourdieu (1984) has argued, feeding and eating practices are a key part of how distinctive social classes are reproduced in everyday acts, and how class ultimately inhabits our bodies. Lifestyle differences in food and eating may be one way that people become aware of, or actively distinguish, their social status from others. This is important for health because perceptions of disparity can impact health through psychosocial factors such as stress, self-esteem, stigma, and depression (Wilkinson 2005; Marmot 2004), and perceived differences in eating and food access may also signal those distinctions. Complicating this link between status and health even further is that social class is not experienced in the same way across all social contexts; moreover, it may not be experienced the same way across various stages of the life course. Children rarely, if ever, balance a checkbook or know the dollar amounts of their parents' bank accounts; they are, however, often aware of the food to which they do, or do not, have access (Fram, Frongillo, Jones, et al. 2011). Food may be one of the primary materials through which children experience social status, which would make inconsistent access or limited access to healthy food a particularly salient stressor.

In sum, there are at least two possible ways in which food insecurity may expose youth to stressors: (1) through its indication of lower social status and the stress that follows, and (2) through the worry and anxiety related directly to the inconsistency, limited quantity, or poor quality of meals. A psychosocial framework can help us better understand how these stressors impact children's health.

A Psychosocial Framework

The psychosocial approach to health disparities focuses on disproportionate exposure to both risk and protective factors within our environment. Psychosocial factors impact health through the physiological responses to stress, which is why the major

risk factors—depression, anxiety, isolation, and insecurity—tend to be either sources or symptoms of chronic stress or major life events (Wilkinson 2005). Central to the psychosocial approach is an understanding of how stress develops in the body. First, this means identifying various sources of stress. Food insecurity, for example, is a source of stress for both caretakers and children (Fram, Frongillo, Jones, et al. 2011). Second, we must understand what other factors might mediate or moderate the influence of these stressors on the body, such as social support or social capital. Friends and family members might act as buffers, somehow softening the blow of stressful events like running out of money for food. Finally, attention is given to the manifestations of stress in physical and mental health (e.g., obesity). “Allostatic load” is a term referring to the physiological changes in the body after long periods of exposure to chronic stress (McEwen 1998). Most importantly, the concept illustrates that the impact of stress is cumulative over time—stress leaves lasting marks on our minds and bodies. Taken together, these three conceptual domains—sources, mediators, and manifestations of stress—make up what is referred to as the “stress process” (Pearlin et al. 1981), which provides a general framework for understanding and talking about the influence of stress on health.

Research has drawn clear lines between food insecurity and stress or anxiety among youth (Fram, Frongillo, Jones, et al. 2011), as well as between obesity and a host of psychosocial factors (Fitzpatrick, Willis, and O’Connor 2014). We might deduce from these studies that food insecurity is likely to be impacting weight status, in part, through the psychosocial stressors that accompany it; however, few studies have yet to draw this more complete picture of the stress process as it relates to food insecurity and weight status. Some research has found an interaction between maternal stress and food insecurity with childhood obesity (Lohman et al. 2009). This would suggest that a mother’s experience of stress could moderate the impact of food insecurity on children’s weight status, but it cannot tell us how the child’s own experiences of food insecurity and stress are impacting their weight status.

Insecure Places

We have discussed how stress impacts health, but we have not yet examined the role that environmental factors play in determining exposure to stressful stimuli. There is a temptation to characterize stress as naturally occurring in some places more than others. While in some instances this may be true, stress is also closely related to social context. How humans interact with one another and the social structure, culture, and history that provides the context for those interactions all play a major role in shaping our exposure to stress. For example, perceived threats or even exposure to disrespect have real consequences for population health. Kennedy and colleagues (1996) provide evidence that exposure to disrespect based on race is an environmental risk associated with significant increases in state-level mortality rates for both black and white populations, though more severely for black populations. In this example, stress is not a natural phenomenon at all, but related to the contextual impact of racism.

In the section on material dimensions of food insecurity, we discussed the unequal distribution of health foods across space. But spaces, like food, are not purely material. Spaces have meaning and are more than just physical/material—they are places, they have

stories, they are interpreted and felt in ways beyond their physical/material characteristics. Spaces are filtered through human interpretation, leaving them rife with symbolic nuance. While food deserts are typically defined by some degree of physical distance to healthy food, they might also be characterized by the *feelings* someone has when moving through, interacting with, and inhabiting such a space. Thinking about food deserts as places rather than just spaces provides a framework for examining the psychosocial impacts of living in these environments rather than just their nutritional risks.

On a smaller scale than a food desert, the household is also a social environment, and a food insecure household is one that elicits an overwhelming wave of mixed feelings and emotion. Qualitative evidence from Canada suggests that adults in food insecure households tend to feel a sense of alienation as well as a lack of control over their daily life (Hamelin, Beaudry, and Habicht 2002). These are indicators of stress that are associated with a number of health risks. Moreover, this sense of a lack of control was paired with an acute sense of inequity among adults and their children. For example, one parent noted the disappointment expressed by the parent's own kids when served a breakfast that was different than their friends. Parents, feeling ashamed of their difficulty in accessing food, often worked hard to hide this struggle so as to soften their children's sense of alienation. Ultimately, the context of food insecurity in the household was leading to physical pangs of hunger and illness, modified eating habits, but also deep psychological suffering marked by feelings of a loss of dignity (Hamelin, Beaudry, and Habicht 2002). The act of entertaining guests over a meal—often done to signify social status among friends and neighbors, and to build supportive social networks, was not an option for these families, and they felt that deeply. These are stories of inequality felt in ways that social epidemiologists have shown to have profound impacts on health (Wilkinson 2005; Marmot 2004).

An Intersection of the Material and Psychosocial

While there are some important theoretical and conceptual distinctions between the material and the psychosocial, it must also be recognized that phenomena we describe as fitting into one category often feed off of, and into, phenomena in the other category. Food insecurity is a particularly unique phenomenon in the sense that it does not fit neatly into either category; rather, food insecurity exemplifies one of the many instances where the material and the psychosocial conditions of poverty seem to intersect. This intersection is highlighted by one health outcome in particular that is often associated with food insecurity: obesity.

Food Insecurity and Obesity

In 1995, Dr. William H. Dietz proposed a causal relationship between two seemingly incompatible phenomena, hunger and obesity. His argument was based on an observation he had made concerning a family of obese patients who, counterintuitively, repeatedly experienced a lack of money for food near the end of each month. In response to this strain on their food budget, the family tended to rely on foods high in fat to prevent hunger. This initial observation incited a wave of research examining the association of food insecurity/hunger with weight status/obesity. From this body of

research, we have learned a lot about the nuances of food insecurity and hunger, and that these phenomena do often result in unexpected consequences (i.e., overweight or obesity). But we have also learned that the association is inconsistent across groups. For example, women who experience food insecurity are especially likely to be overweight or obese while the same relationship rarely exists among men. Moreover, results for youth populations remain mixed (Dinour et al. 2007; Franklin et al. 2012; Larson and Story 2011).

What makes the food insecurity–obesity relationship seem paradoxical is a general focus on the material reality of food insecurity as a condition where access to food is inconsistent. To think of it as a paradox, however, misses the fact that part of the material reality is lack of access to *healthy* foods, as well as the psychosocial elements of food insecurity. There is evidence to suggest, for example, that while food insecure children do not have access to healthy food, they do have access to calorie-rich foods that may leave their bodies hungry for better nutrition (Fram, Ritchie, et al. 2015). Other explanations include a focus on the adapted eating habits of those who experience periodic insecurity (Franklin et al. 2012), as well as an argument that food insecure children are buffered from the lack of access to food but still experience some of the anxiety that can exacerbate weight status (Hamelin, Beaudry, and Habicht 2002). This is consistent with psychosocial theories of health as well as a body of research that links both obesity and food insecurity to various indicators of psychological and social well-being (Lohman et al. 2009). The buffering hypothesis, however, gives the impression that parents are the only actors in the story of food insecurity and child health. Moreover, it maintains parents as the unit of analysis, acting as spokespersons on behalf of youth experiences. An improved line of research would be to maintain the focus on psychosocial mechanisms linking food insecurity to obesity, but to survey children directly. While some research suggests that there is indeed a relationship between food insecurity and obesity among children, other researchers have found no association between the two. All these studies to date, however, rely on the reports from parents on their children's food insecurity despite evidence that youth experience food insecurity differently than adults (Fram, Frongillo, Jones, et al. 2011) and respond differently to questions about food insecurity status (Fram, Frongillo, Draper, and Fishbein 2013).

This methodological limitation leaves a considerable gap in the literature and our understanding of the association between food insecurity and weight status. However, new cross-sectional survey data collected from middle school students (fifth through seventh grade) in Northwest Arkansas allows us to fill this gap by utilizing a food insecurity survey instrument developed by Connell and colleagues (2004), who used cognitive interview methods to modify the US Department of Agriculture adult instrument for use by children. For the most part, the questions remain the same with only slight changes that make the survey accessible to youth. For example, the phrase “low-cost” is replaced by the word “cheap.”

Case Study: Evidence from Northwest Arkansas Middle School Students

To answer the question of whether food insecurity and obesity are associated among youth populations, individual-level data with reports from children themselves was

required. In 2011, we collected such data from students, including their own reports of food insecurity, self-reported height and weight from which BMI and weight status can be determined, basic demographic information (i.e., age, sex, race, class), and other social and psychological information (i.e., social relationships, self-esteem, depression); no personal identifiers were collected. From a sampling frame that included 361 eligible fifth- through seventh-grade students attending a single middle school, 334 students completed the survey, leaving us with a completion rate of 92 percent.

Preliminary analyses of descriptive statistics suggest that, like the rest of the country, this middle school is an environment where both obesity and food insecurity coexist. Over half (57 percent) of the students reported experiencing at least one of the five indicators of food insecurity within the past year. At the same time, nearly one in three (29.6 percent) reported a combined height and weight that would place them within the category of overweight or obese according to the Centers for Disease Control guidelines. But are any of these students experiencing food insecurity while also overweight or obese? The answer is yes. Nearly 40 percent of food insecure students are also overweight or obese (37.7 percent). While this shows that the majority of food insecure students are still in the healthy weight category, the prevalence of overweight and obesity among food secure students was comparatively much lower (23.5 percent). Further statistical testing reveals that this difference is significant at the $p < .01$ level. Given that result, we feel confident that these numbers represent real differences in weight status between food insecure and food secure students.

This data, therefore, suggests that a relationship between food insecurity and overweight/obesity among youth does exist. The data also provides some hints at what might explain this relationship. A more detailed multivariate analysis shows a positive association between food insecurity and weight status: as the severity of food insecurity increases, so does weight status. However, when psychosocial factors such as depression, perceived social status, self-esteem, and a measure of social capital are introduced into the model, the relationship between food insecurity and weight status disappears. This implies that psychosocial factors may be playing some mediating role in the relationship between food insecurity and weight status; that is, food insecurity might be operating through psychosocial factors to influence weight status among children. This could have significant policy implications for organizations aimed at alleviating the negative health effects of food insecurity. For example, if food insecurity increases weight status partly because of lower perceived social status, increased depressive symptoms, low self-esteem, or reduced social capital, then food pantries might be an important location for outreach by mental health professionals or mentorship programs.

While this evidence is compelling, the analyses are preliminary. Further statistical testing is needed to confirm that psychosocial factors are indeed mediating the relationship. Regardless, there appears to be a clear relationship between food insecurity and obesity among these middle school students. Results of our preliminary testing run counter to conclusions made by Gundersen, Garasky, and colleagues (2009) and Gundersen, Lohman, and colleagues (2008) for similar age groups; however, this may be due to the use of responses from children themselves in our own study. As these authors themselves point out in their own work, the use of parents as spokespersons for children's experiences is a serious limitation. Some of our previous work also confirms

that this relationship exists but notes that parent responses to the food insecurity measure are not predictive of students' weight status (Fitzpatrick and Willis 2015). Had we not asked children to give their own reports of food insecurity, we may have been led to similar conclusions as Gundersen and colleagues.

Food insecurity is a particularly risky condition because it involves the combinative effects of material/nutritional risks of poverty and the psychosocial risk factors related to perceived distinctions in social status. Moreover, when material conditions do not lead to the expected outcomes, psychosocial factors may provide some insights for explaining what appear to be contradictions. Additionally, it is likely that psychosocial and material dimensions interact with one another to create a multiplicative effect on health outcomes.

"Poor choices" has become the default explanation for social problems. The poor are poor, we are told, because they make bad choices. Similar arguments are made when it comes to health and well-being. Not only is this myopic, but it is inherently flawed because it assumes everyone has the same choices/options to begin with, that we all *started* climbing the socioeconomic ladder from the same rung. Kids, and low-income kids especially, are afforded very few choices when it comes to residence, where they will go to school, what ends up in the refrigerator, or how often they will get to go outside (in unsafe neighborhoods it may not be an option). When we see disparities in health at very young ages we must think harder about what might be at the root of the problem. Kids offer an opportunity to get ahead of what can be a cyclical relationship between poverty and poor health. Because early life experiences can have a significant impact on health in later life, the lives of youth are crucial to the effort of breaking that cycle.

While we know that youth typically have limited opportunities to make important decisions (e.g., where to live, what to eat, etc.), we acknowledge youth as actors within the environments they inhabit—limited choices do not equate to zero choices, and it certainly does not equate to a lack of awareness about those limited choices. Youth experiences are simply different from adult experiences. To obtain a direct source of information about youth experiences, we must ask youth directly. Because of this, we feel it is crucial for researchers to, within reason, allow youth to speak for themselves when it comes to issues of poverty and inconsistent access to food. As demonstrated in this chapter, allowing youth to respond to surveys themselves can provide crucial insights into the impact of food insecurity and our understanding of health disparities in general.

Although the focus of this chapter has been on the experience of poverty and food insecurity, its psychosocial and material elements, and the consequences of those conditions for human health, we also recognize that these experiences are shaped by factors further "upstream" in the causal chain, and that the existence of poverty and food insecurity are not natural but achieved through a particular political and economic structuring of society. While tackling the immediate symptoms of poverty (i.e., hunger, homelessness, etc.) is necessary, it is also important to address the underlying cause. To do this we can look to examples from other places that have redefined what it means to be a citizen. Frances Moore Lappé and Anna Lappé describe in their book *Hope's Edge* (2002) a city in Brazil known as Belo Horizonte, which decided that citizenship entails

a right to food. The programs implemented by the city are credited with lowering the very high mortality rate (35.3 per thousand births) for children by 72 percent in less than a decade (FAO 2015).

To determine that citizenship comes with a right to food, as the city of Belo Horizonte has done, is a fundamentally different approach to distributing food than the consumer-commodity relationship that characterizes food distribution in the United States. Questions of how to solve hunger and food insecurity inherently involve questions about how the state views and treats both food and its citizens. In other words, political leaders must ask themselves if their citizenry is to be viewed first as consumers and second as humans with vital needs or vice versa. Moreover, they must ask themselves whether food is primarily a commodity or a resource of vital nutritional and social importance. Hopefully, the view of citizens as humans with a right to vital nutritional and social resources such as food will begin to take hold in places beyond Belo Horizonte.

REFERENCES

- Alwitt, Linda F., and Thomas D. Donley. 1997. "Retail Stores in Poor Urban Neighborhoods." *Journal of Consumer Affairs* 31 (1): 139–64. doi:org/10.1111/j.1745-6606.1997.tb00830.x.
- Bourdieu, Pierre. 1984. *Distinction: A Social Critique of the Judgement of Taste*. Cambridge, MA: Harvard University Press.
- Caballero, Benjamin. 2002. "Global Patterns of Child Health: The Role of Nutrition." *Annals of Nutrition and Metabolism* 46 (Supplement 1): 3–7. doi:10.1159/000066400.
- Carolan, Michael. 2011. *The Real Cost of Cheap Food*. New York: Earthscan.
- Casey, Patrick H., Kitty L. Szeto, James M. Robbins, Janice E. Stuff, Carol Connell, Jeffery M. Gossett, and Pippa M. Simpson. 2005. "Child Health-Related Quality of Life and Household Food Security." *Archives of Pediatrics and Adolescent Medicine* 159 (1): 51–56.
- Chi, Donald L., Erin E. Masterson, Adam C. Carle, Lloyd A. Mancl, and Susan E. Coldwell. 2014. "Socioeconomic Status, Food Security, and Dental Caries in US Children: Mediation Analyses of Data from the National Health and Nutrition Examination Survey, 2007–2008." *American Journal of Public Health* 104 (5): 860–64. doi:10.2105/AJPH.2013.301699.
- Coleman-Jensen, Alisha, Matthew P. Rabbitt, Christian Gregory, and Anita Singh. 2015. "Household Food Security in the United States in 2014," ERR-194, US Department of Agriculture, Economic Research Service, September.
- Connell, Carol L., Mark Nord, Kristi L. Lofton, and Kathy Yadrick. 2004. "Food Security of Older Children Can Be Assessed Using a Standardized Survey Instrument." *Journal of Nutrition* 134 (10): 2566–72.
- Cook, John T., Deborah A. Frank, Suzette M. Levenson, Nicole B. Neault, Tim C. Heeren, Maurine M. Black, et al. 2006. "Child Food Insecurity Increases Risks Posed by Household Food Insecurity to Young Children's Health." *Journal of Nutrition* 136 (4): 1073–76.
- DeNavas-Walt, Carmen, and Bernadette D. Proctor. 2015. US Census Bureau, Current Population Reports, P60–252, "Income and Poverty in the United States: 2014," Washington, DC: US Government Printing Office.
- DeVault, Marjorie L. 1994. *Feeding the Family: The Social Organization of Caring as Gendered Work*. Chicago: University of Chicago Press.
- Dietz, William H. 1995. "Does Hunger Cause Obesity?" *Pediatrics* 95 (5): 766–67.

- Dinour, Lauren M., Dara Bergen, and Ming-Chin Yeh. 2007. "The Food Insecurity–Obesity Paradox: A Review of the Literature and the Role Food Stamps May Play." *Journal of the American Dietetic Association* 107 (11): 1952–61. doi:10.1016/j.jada.2007.08.006.
- FAO (Food and Agriculture Organization of the United Nations). 2015. "Belo Horizonte: Growing Greener Cities in Latin America and the Caribbean." www.fao.org/lag/agp/greenercities/en/ggclac/belo_horizonte.html.
- Fitzpatrick, Kevin M., and Mark LaGory. 2011. *Unhealthy Cities: Poverty, Race, and Place in America*. New York: Routledge.
- Fitzpatrick, Kevin M., and Don Willis. 2015. "Parent/Student Risk and Protective Factors in Understanding Early Adolescent's Body Mass Index." *Journal of Early Adolescence*, February, 0272431615570058. doi:10.1177/0272431615570058.
- Fitzpatrick, Kevin M., Don Willis, and Gail O'Connor. 2014. "Circumstances, Resources, and Weight Status Outcomes among Middle School Students." *Journal of Early Adolescence* 34 (8): 1058–74.
- Fram, Maryah Stella, Edward A. Frongillo, Carrie L. Draper, and Eliza M. Fishbein. 2013. "Development and Validation of a Child Report Assessment of Child Food Insecurity and Comparison to Parent Report Assessment." *Journal of Hunger and Environmental Nutrition* 8 (2): 128–45. doi:10.1080/19320248.2013.790775.
- Fram, Maryah Stella, Edward A. Frongillo, Sonya J. Jones, Roger C. Williams, Michael P. Burke, Kendra P. DeLoach, and Christine E. Blake. 2011. "Children Are Aware of Food Insecurity and Take Responsibility for Managing Food Resources." *Journal of Nutrition* 141 (6): 1114–19.
- Fram, Maryah Stella, Lorrene D. Ritchie, Nila Rosen, and Edward A. Frongillo. 2015. "Child Experience of Food Insecurity Is Associated with Child Diet and Physical Activity." *Journal of Nutrition* 145 (3): 499–504. doi:10.3945/jn.114.194365.
- Franklin, Brandi, Ashley Jones, Dejuan Love, Stephane Puckett, Justin Macklin, and Shelley White-Means. 2012. "Exploring Mediators of Food Insecurity and Obesity: A Review of Recent Literature." *Journal of Community Health* 37 (1): 253–64.
- Gundersen, Craig, Steven Garasky, and Brenda J. Lohman. 2009. "Food Insecurity Is Not Associated with Childhood Obesity as Assessed Using Multiple Measures of Obesity." *Journal of Nutrition* 139 (6): 1173–78.
- Gundersen, Craig, Brenda J. Lohman, Joey C. Eisenmann, Steven Garasky, and Susan D. Stewart. 2008. "Child-Specific Food Insecurity and Overweight Are Not Associated in a Sample of 10- to 15-Year-Old Low-Income Youth." *Journal of Nutrition* 138 (2): 371–78.
- Gundersen, Craig, Brenda J. Lohman, Steven Garasky, Susan Stewart, and Joey Eisenmann. 2008. "Food Security, Maternal Stressors, and Overweight among Low-Income US Children: Results from the National Health and Nutrition Examination Survey (1999–2002)." *Pediatrics* 122 (3): e529–40.
- Hamelin, Anne-Marie, Micheline Beaudry, and Jean-Pierre Habicht. 2002. "Characterization of Household Food Insecurity in Québec: Food and Feelings." *Social Science and Medicine* 54 (1): 119–32. doi:10.1016/S0277-9536(01)00013-2.
- Kennedy, B. P., I. Kawachi, K. Lochner, C. Jones, and D. Prothrow-Stith. 1996. "(Dis) Respect and Black Mortality." *Ethnicity and Disease* 7: 207–14.
- Kirkpatrick Sharon I., Lynn McIntyre, Melissa L. Potestio. 2010. "Child Hunger and Long-Term Adverse Consequences for Health." *Arch. Pediatr. Adolesc. Med.* 164 (8): 754–62. doi:10.1001/archpediatrics.2010.117.
- Lappé, Francis M., and Anna Lappé. 2002. *Hope's Edge: The Next Diet for a Small Planet*. New York: Jeremy P. Tarcher/Putnam.
- Larson, Nicole I., and Mary T. Story. 2011. "Food Insecurity and Weight Status among US Children and Families: A Review of the Literature." *American Journal of Preventive Medicine* 40 (2): 166–73.

- Link, Bruce G., and Jo Phelan. 1995. "Social Conditions as Fundamental Causes of Disease." *Journal of Health and Social Behavior* 35: 80–94. doi:10.2307/2626958.
- Lohman, Brenda J., Susan Stewart, Craig Gundersen, Steven Garasky, and Joey C. Eisenmann. 2009. "Adolescent Overweight and Obesity: Links to Food Insecurity and Individual, Maternal, and Family Stressors." *Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine* 45 (3): 230–37.
- Marmot, Michael. 2004. *The Status Syndrome: How Social Status Affects Our Health and Longevity*. New York: Henry Holt.
- McEwen, Bruce S. 1998. "Stress, Adaptation, and Disease: Allostasis and Allostatic Load." *Annals of the New York Academy of Sciences* 840 (1): 33–44. doi:10.1111/j.1749-6632.1998.tb09546.x.
- Mills, C. Wright. 2000. *The Sociological Imagination*. New York: Oxford University Press.
- Mokdad, Ali H., James S. Marks, Donna F. Stroup, and Julie L. Gerberding. 2004. "Actual Causes of Death in the United States, 2000." *Journal of the American Medical Association* 291 (10): 1238–45.
- Morland, Kimberly, Steve Wing, Ana Diez Roux, and Charles Poole. 2002. "Neighborhood Characteristics Associated with the Location of Food Stores and Food Service Places." *American Journal of Preventive Medicine* 22 (1): 23–29. doi:10.1016/S0749-3797(01)00403-2.
- Pearlin, Leonard I., Elizabeth G. Menaghan, Morton A. Lieberman, and Joseph T. Mullan. 1981. "The Stress Process." *Journal of Health and Social Behavior* 22 (4): 337–56. doi:org/10.2307/2136676.
- Powell, Lisa M., M. Christopher Auld, Frank J. Chaloupka, Patrick M. O'Malley, and Lloyd D. Johnston. 2007. "Associations between Access to Food Stores and Adolescent Body Mass Index." *American Journal of Preventive Medicine: Bridging the Gap Research Informing Practice and Policy for Healthy Youth Behavior* 33 (4, Supplement): S301–7. doi:10.1016/j.amepre.2007.07.007.
- Seligman, Hilary K., Barbara A. Laraia, and Margot B. Kushel. 2010. "Food Insecurity Is Associated with Chronic Disease among Low-Income NHANES Participants." *Journal of Nutrition* 140 (2): 304–10.
- Scanlan, Stephen J., J. Craig Jenkins, Lindsey Peterson. 2010. "The Scarcity Fallacy." *Contexts*. contexts.org/article/the-scarcity-fallacy/.
- Sen, Amartya. 1981. *Poverty and Famines: An Essay on Entitlement and Deprivation*. Oxford: Clarendon.
- Thomas, Brian J. 2010. "Food Deserts and the Sociology of Space: Distance to Food Retailers and Food Insecurity in an Urban American Neighborhood." *International Journal of Human Social Science* 5 (6): 400–409.
- US Burden of Disease Collaborators. 2013. "The State of US Health, 1990–2010: Burden of Diseases, Injuries, and Risk Factors." *Journal of the American Medical Association* 310 (6): 591–606. doi:10.1001/jama.2013.13805.
- Wilkinson, Richard. 2005. *The Impact of Inequality: How to Make Sick Societies Healthier*. New York: New Press.