ABSTRACT

MACNELL, LILLIAN HILDA. Exploring Race, Class, and Food Access across Different Geographic Scales. (Under the direction of Dr. Sarah K. Bowen).

Many studies have found that low-income and predominately minority areas in the U.S. have fewer supermarkets and are subject to higher food prices in their immediate surroundings. Yet while there is some consensus regarding unequal access to food, there is a lack of consensus as to how this impacts the health, dietary patterns, or shopping behaviors of residents of these areas. Recent research suggests that this may be because consumers often bypass their nearest supermarket, particularly to reach more affordable options at farther stores. In response, some scholars have argued that earlier research on food access fails to accurately represent the realities of living in areas with low food access. Thus, scholars have increasingly called for multi-level studies that consider interactions between larger-scale neighborhood, and smaller-scale individual or household, characteristics.

In this dissertation, I respond to the call for mixed-methods, multilevel research on food access and its potential outcomes. I employ multiple methods at three different geographic levels—a large-scale national spatial analysis, a regional geo-ethnography, and a local case study—to gain a more comprehensive understanding of how people navigate their food environments, experience poor food access, and attempt to challenge and overcome food injustice. My findings suggest that one outcome of poor food access, food insecurity, is affected less by food environments and more by household resources. Further, these effects are not generalizable in all places, but vary geographically. My research also demonstrates that low-income residents in areas of poor food access traveled significantly farther than their nearest supermarket to reach preferred stores, providing evidence that the food environment is not deterministic. Rather, residents actively engaged with their food environments, and
often employed complex, time-intensive strategies to feed their families. Finally, my findings demonstrate how discourse in the food justice movement often reproduces race and class inequalities, through participant observation of a developing food cooperative in an urban area with poor food access. Participants often conceptualized “good food” in a way that reinforced Whitened interpretations of food justice. Further, they struggled to address the needs of a low-income community that could not afford to keep the co-op afloat on its own.

Together, these three projects highlight the value of research on food access that considers the physical environment as a context in which individuals interact with each other and with their surroundings. The different scales of this research allowed me to examine issues of food access from multiple perspectives, resulting in a more comprehensive understanding of the topic. More importantly, it demonstrates how important it is to consider individuals’ and communities’ experiences and agency into account when conceptualizing food access and food environments.
Exploring Race, Class, and Food Access across Different Geographic Scales

by
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A dissertation submitted to the Graduate Faculty of North Carolina State University in partial fulfillment of the requirements for the degree of Doctor of Philosophy

Sociology

Raleigh, North Carolina

2016

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DEDICATION

“I have loved the stars too fondly to be fearful of the night.”

- Sarah Williams, *The Old Astronomer to His Pupil*
BIOGRAPHY

Lillian MacNell was born to parents Theresa and Bob O’Connell in 1986. She grew up with her two siblings, Abigail and James, in Montclair, New Jersey. In 2008, she completed a Bachelor’s in Environmental Studies at the University of Central Florida, where she remained to complete a Master’s in Environmental Sociology in 2010. She moved to Raleigh to attend North Carolina State University, where she earned her PhD in Sociology in 2016. She currently lives in Raleigh with her partner, Nat, and their two cats, who remain unimpressed.
ACKNOWLEDGMENTS

Thank you to my mom, Theresa, for being a path-breaking role model of a woman, and to my dad, Bob, for being my best student and the reason I wanted to teach in the first place. Thank you to my sister, Abby, and my brother, James, for believing in me when I didn’t, and for not being too embarrassed by me. Thanks to all of you for listening to my interesting facts and only making fun of me most of the time. Thank you to all of my other family, blood or otherwise, for their support and love.

Thank you to my advisor and mentor, Sarah. You frequently gave me tools and then let me loose to see what I could do with them. At the same time, you have always provided me with guidance and support when I needed it. With this room to grow, but the knowledge of a secure net beneath me, I felt comfortable pushing my limits and trying new things, and have now accomplished many things I wouldn’t have believed I could have.

Thank you to Sinikka, whose guidance has not only helped my work, but has helped me to be more reflective of my own feelings and beliefs, and become a more thoughtful, caring researcher. Thank both you and Sarah for the defining opportunity to work with Voices into Action, which I am not really going to ever leave.

Thank you to Steve, whose quiet confidence in me was reassuring in a time when I often felt unsure. I often thought that I must be capable of something because you seemed to think that I was.

Thank you to Michael, both for your incredible expertise and your genuine care for me and my work. In every conversation, you invariably gave me a citation or suggestion that was exactly what I had been missing; when you told me things I needed to work on, it felt
like an area for growth rather than a criticism. I left every interaction with you feeling better than when I had entered it.

Thank you to Penelope, for your extraordinary mentorship. You properly introduced me to sociology and took care of me while I was at UCF. When I teach, your personality and techniques are there. When I write, your voice is present. All the work I have done since we met is built upon what I learned from you and the work we did together. Ichi-go, ichi-e.

Thank you to all members of the Voices into Action team, past and present, who work together like one very efficient centipede, dozens of legs on the ground moving forward together to do amazing work. It is not an overstatement when I say that working with you all has been transformative. In particular, thank you to Maddi, for tirelessly working behind the scenes, and coming to my rescue on many occasions, and to Cassandra, for her unwavering support and the occasional research adventure in the wee hours of the night or across state lines.

Thank you to my friends, and my fellow graduate students, who have listened, advised, commiserated, shared, and encouraged: Nick, Aysha, Anneliese, Katie, Morgan, Rachel, Galen, Sarah, Patrick, Erin, Michele, Mari Kate, Blake, and Hannah. Thank you to Evan; so much of my work, academic and personal, comes from me striving to be the person you believed I could be. And thank you, of course, to Erin Marie, who talked me through every step of the way with patience, intelligence, and, when necessary, tough love.

Thank you to John, Linda, Carletta, Jenny, and Marcie. I have come to each of you many times with “urgent” questions, which you have answered skillfully and with a smile, and I truly appreciate you all watching out for me and keeping me on track.
Thank you to Liza, Rachel, Daniel, and every anonymous member of my graduate student support groups at the NC State Counseling Center for their outstanding support, and thank you to Dr. Mary Bengtson, the best doctor I’ve ever had. I am confident I would not have made it to this point without each of you.

Thanks to Lin-Manuel Miranda, for keeping me company as I learned exactly how to write like you’re running out of time.

Finally, thank you to my partner, Nat, the most talented, most interesting, and most extraordinary person in the universe. You are my special, you are my hero.
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CHAPTER 1: INTRODUCTION

Research on disparities in food access has proliferated rapidly since a U.K. government report first coined the term “food desert” in 1995 (Barratt 1997; Beaumont et al. 1995). The report was prompted, in part, by a series of studies in the United Kingdom which highlighted disparities in food access between low-income and more affluent areas (Mooney 1990; Sooman et al. 1993). Empirical evidence of disparities in food access has been especially prevalent in the United States (Beaulac et al. 2009). Many studies have found that low-income and predominately minority areas in the U.S. have fewer supermarkets and are subject to higher food prices in their immediate surroundings (Dunkley et al. 2004; Morland et al. 2002; Powell et al. 2007; Zenk et al. 2005a). Yet while there is some consensus regarding the existence of food deserts, much of this research has utilized a narrow, proximity-based definition of food access. In response, scholars have argued that this work fails to accurately represent the realities of living in areas with low food access (Alkon et al. 2013; Capsi et al. 2012a; Larson et al. 2009; Lytle 2009).

Early studies explored how to measure “food deserts” and documented whether and where food deserts existed. These questions were largely geographic: Do some places have fewer supermarkets than others? What types of neighborhood characteristics are common in such areas? These studies often employed proximity-based definitions, measuring how far residents had to travel to reach a supermarket, or how many supermarkets existed within a certain radius of a neighborhood. Alwitt and Donley (1997) found that poor residents had to travel a greater distance to access the same food resources as non-poor residents. Many
studies have found that non-poor areas have a greater number of supermarkets than poor areas (Cotterill and Franklin 1995; Morland et al. 2002a; Powell et al. 2007); in some places, non-poor neighborhoods were home to three or even four times as many supermarkets than poor neighborhoods (Morland et al. 2002b; Moore and Diez-Roux 2006). Similarly, several studies have found that predominately White neighborhoods have more large supermarkets than predominately Black or Latino neighborhoods (Morland et al. 2002b; Moore and Diez-Roux 2006; Powell et al. 2007; Raja et al. 2008). Even when compared to the most impoverished White neighborhoods, Zenk et al. (2005) found that Black neighborhood centroids were 1.1 mile farther from the nearest supermarket. Overall, these studies are indicative of a general consensus that low-income communities and communities of color in the United States have fewer supermarkets and large chain grocery stores thanwealthier and predominately White neighborhoods.

This work on food deserts has been very successful at calling attention to spatial inequalities in the distribution of large retail food stores. However, some scholars have speculated that the lack of access to supermarkets and large grocery stores might be offset by networks of smaller corner and convenience stores that sell food within low-income neighborhoods. These critics argue that studies should go beyond looking solely at large chain supermarkets. Raja et al. (2008) found that while large supermarkets were less prevalent in neighborhoods of color compared to White neighborhoods, small, non-chain grocery stores were more prevalent. Other scholars similarly found that low-income neighborhoods and predominately non-White neighborhoods have substantially more small, non-chain grocery stores than wealthier, White neighborhoods (Block and Kouba 2006;
Moore and Diez-Roux 2006). Short et al. (2007) argue that small full-service food retailers can increase the food security of a community even when larger stores are lacking (Short et al. 2007). Zick et al. (2009) further found that the presence of multiple food options within a low-income neighborhood reduced the risk of obesity, relative to no food options. This suggests that corner and convenience stores could mediate, to an extent, some problems with a lack of large grocery stores. Raja et al. (2008) argue that it may therefore be inaccurate to characterize neighborhoods as food deserts when they have multiple smaller grocery stores.

A second wave of food desert literature focused not on the presence and location of food stores, but on what types of food stores had to offer. Numerous studies have found that supermarkets tend to offer greater variety, higher quality, and lower cost food than small stores. Chung and Myers (1999), for example, found that food prices at large chain stores were 10-40% lower than at convenience stores. Corner and convenience stores are also more likely to stock larger quantities of unhealthy products, including tobacco and alcohol, while offering fewer healthy choices and less fresh produce (Freedman 2009; Short et al. 2007; Zenk and Powell 2008). Bodor et al. (2010) found significantly lower availability of fresh fruits and vegetables in neighborhoods with only small stores, as opposed to neighborhoods with large supermarkets, yet no difference in the availability of energy-dense snack foods. In addition to the higher prices and limited availability of healthy foods at many smaller stores, these items may also be of poorer quality than at supermarkets (Cannuscio et al. 2013; Dunkley et al. 2004; Gittelsohn and Sharma 2009).

A third body of work has looked at the health implications of living in a food desert. Some studies found that residents without supermarkets near their homes are significantly
less likely to have a healthy diet than those who have high supermarket access (Lewis et al. 2005; Moore et al. 2008). Many scholars found a correlation between living in a food desert and higher BMIs or levels of obesity (Booth et al. 2005; Larson et al. 2009; Lopez et al. 2007; Schafft et al. 2009). More specifically, some studies found a lower prevalence of obesity and overweight in areas with high access to supermarkets, and a higher prevalence in areas with many convenience stores (Morland et al. 2006; Morland and Evenson 2008). However, several recent studies question the assumed relationships between neighborhood food environments and dietary and health outcomes, and there is little consistent or clear evidence that food desert residents are at higher risk of other diet-related diseases such as diabetes, high cholesterol, or hypertension (Caspi et al. 2012a; Cummins and Macintyre 2006; Holsten 2008; Morland et al. 2006).

One reason that there is an unclear relationship between food environments and health outcomes may be that access to healthy foods does not necessarily correlate with their consumption. Some studies do suggest a correlation; for example, Morland et al. (2002b) found a 32% increase in fruit and vegetable consumption among Black residents for each additional supermarket in their census tract. Zenk et al. (2005a) found that shopping at supermarkets, rather than at corner and convenience stores, is related to a higher intake of fresh fruits and vegetables. However, the authors also noted that this may be the result of an indirect relationship between income and diet, as people with higher incomes were more likely to shop at supermarkets than at other grocery stores. In contrast to these findings, several recent studies have found no relationship between proximity to supermarkets and fruit and vegetable intake (Capsi et al. 2012a; Freedman 2009; Pearson et al. 2005). Recent
research suggests that a reason for this may be that people do not necessarily shop at the store that is closest to where they live; several recent studies found that consumers often bypassed their nearest supermarket for a variety of reasons, particularly to reach more affordable options at farther stores (Cannuscio et al. 2013; Hillier et al. 2014; LeDoux and Vojnovic 2013). A recent nationally representative study of nearly 5,000 U.S. households supported these results, finding that shoppers in the average household bypass their nearest store and travel as much as an additional 1.5 miles to reach their primary shopping location (Ver Ploeg et al. 2015).

Existing research on food access has focused largely on identifying and describing food deserts. Some studies have looked at the health effects of living in food deserts, though with little consensus. Few studies, however, consider how individual preferences or household characteristics interact with food environments to influence food access, a notable gap given that research on the effects of food deserts has been largely inconclusive. Thus, scholars have increasingly called for multi-level studies that consider interactions between larger-scale neighborhood, and smaller-scale individual or household, characteristics (Alkon et al. 2013; Larson et al. 2009; Lytle 2009). In an example of one such study, Alkon et al. (2013) interviewed or surveyed 581 food desert residents in two different locations about their shopping preferences and strategies. They found that, while food environments played a role, many individual considerations and household factors were as or more important to participants, including food prices, quality of food, and available transportation options. In their interviews with 66 low-income residents of different urban neighborhoods, Tach and Amorim (2015) likewise found that, while the available stores did influence where people
shopped for food, economic constraints were as or more important, and a number of other factors including health and symbolic value mattered, as well.

Similarly, Smith and Morton (2009) found that rural Midwestern food desert residents’ shopping behaviors were not determined solely by their food environments, but also by individual preferences and household characteristics, like taste and appearance of food, family size, health status, and food security. Smith and Miller (2011) later conducted focus groups with a mix of rural and urban food desert residents, and found that urban and rural residents faced different challenges in navigating their food environments and had different strategies for food provisioning. These latter two studies in particular underscore how the outcomes of living in a food desert are likely to vary considerably across places, based on a variety of individual and neighborhood factors (Alkon et al. 2013; Lytle 2009). This type of finding could help to explain why the literature on outcomes of living in a food desert have been largely inconclusive thus far, and demonstrate the need for research that moves beyond measuring food environments to incorporate the lived experiences of food desert residents. In fact, Alkon et al. (2013:128) argue that qualitative analysis is required to “further understand the complicated sets of variables that go into food choice, and the varied food landscapes that low-income residents navigate.”

The authors also note the value of mixed-methods studies in contributing to further understanding of food environments (Alkon 2013). Very few studies, however, have applied mixed-methods approaches to questions of food access. Of the two notable exceptions, only one (Hillier et al. 2011) was conducted in the U.S. (see Whelan et al. 2002 for a U.K. example). Hillier et al. (2011) surveyed 198 low-income WIC participants about where they
shop for food, perceptions of their food environment, and demographic information. The authors also mapped the stores at which participants shopped to answer such questions as whether residents actually shopped at their closest available store, and how far participants traveled to get to their preferred stores. By combining survey data with geographic data, the authors clearly demonstrated how purely proximity-based studies on food environments can fail to consider how individual agency plays a role in food shopping decisions. There is therefore a clear need for mixed-method research that utilizes a variety of means to approach similar issues.

Though both qualitative and quantitative research methods have well-documented strengths and weaknesses, many social scientists position the two as opposing, either/or paradigms (Johnson and Onwuegbuzie 2004). Ragin (1987) argues, however, that research methods should be chosen based on stated research goals, rather than on any bias about “ideal” research. Johnson and Onwuegbuzie (2004) similarly advocate for mixed-methods research as a third paradigm that takes advantage of the strengths of both qualitative and quantitative methods while mitigating the weaknesses of both. Both types of methods could be applied to the same research question and yield different results; rather than accepting one answer as correct while rejecting the other, a mixed-methods approach considers that both answers may be a small part of a larger, more complex answer that no single method can tease out alone. In the case of food access, there are many examples of valuable research studies using both quantitative and qualitative methods, yet many questions about how food deserts affect residents remain. As previous research demonstrates, this is partly due to the complexity of such questions—as Lytle (2009) points out, individuals are not randomly
assigned to neighborhood (and by extension food environments), but select them based on a host of factors, and ultimately both the individual and the neighborhood affect each other. It is therefore worth tackling issues of food access with every possible tool. Further, given the inherent geographic nature of neighborhoods and food environments, it is important not only to engage with a variety of methods, but also a variety of geographic scales, to more fully understand how individual, household, and neighborhood characteristics all work to influence the relationship between residents and their food environments.

In this dissertation, I respond to the call for mixed-methods, multilevel research on food access and its potential outcomes. My work is a three-part study that demonstrates how individual, household, and neighborhood factors interact, to create a more complete picture of the relationship between food environments and food access. To do this, I employ multiple methods at three different geographic levels—a large-scale national spatial analysis, a regional geo-ethnography, and a local case study—to gain a more comprehensive understanding of how people navigate their food environments, experience poor food access, and attempt to challenge and overcome food injustice.

In Chapter 2, I argue that understanding poor food access is important because of the way in which food access contributes to food security status in the United States. Current research on food insecurity focuses mostly on two main questions: what types of people are most likely to be food insecure (e.g. Barrett et al. 2010; Rose 1999), and how food insecurity affects dietary and health outcomes (e.g. Campbell 1991; Kendall et al. 1996). There is a dearth of research on how food environments might affect food security status, however. Using data from the USDA’s National Household Food Acquisition and Purchase Survey
(FoodAPS), I employ spatial statistical analyses to examine whether food environments influence food security differently based on other household and neighborhood factors. Is household food insecurity affected by area-level food insecurity? Are certain places more prone to food insecurity? Do the effects of food access, race, and class on food insecurity vary from place to place? Standard types of regression models operate under the assumption that the effect of independent variables is consistent across place, and therefore cannot answer these questions. Spatial statistical analyses, however, are uniquely suited to these questions, because they can control for space and place, and allow the effects of explanatory variables to vary geographically.

In Chapter 3, I combine quantitative mapping techniques with qualitative interviews to challenge a common assumption in the literature that food access is primarily a function of proximity to food stores. Along with other researchers working with Voices into Action, a USDA-funded study on families and food, I collected information about the three food stores at which 100 rural and urban low-income mothers preferred to shop, and mapped these stores to situate residents’ food shopping decisions into their food environments. Where do low-income residents of food poor areas actually shop for food? How and why do they make these choices? While a few other scholars have addressed one of these questions with either quantitative or qualitative studies, the use of complementary mixed-methods allows me to answer both to gain a fuller understanding of these decisions.

In Chapter 4, I demonstrate the ways in which a food justice project to address poor food access in one low-income neighborhood is often unintentionally raced and classed. I conducted participant observations with a developing food cooperative initiative in an urban
food desert. Though a few other scholars have examined raced and classed discourses surrounding food justice projects, none have had the opportunity to observe how these discourses are negotiated as they emerge in the first place. What underlying assumptions do food justice proponents have about community, alternative food, and health? How are race and class concerns addressed in a setting that is designed to be sensitive to them? How do leaders negotiate working with allies who are financially and racially distinct from the community? These questions are best examined with in-depth qualitative methods that provide insight into behavior and motivations that cannot easily be captured with quantitative analyses. Further, qualitative methods allow for greater flexibility, allowing me to respond to and participate in discourses as they emerged.

Taken together, these projects offer three different methodological lenses with which to approach questions of food access and insecurity, contributing to the literature on food deserts by responding directly to a call for mixed-method, multilevel research. Research on food deserts is continually evolving, and debates over their definition and consequences continue. The negative health outcomes of life in a food desert, as well as its related potential to contribute to food insecurity, make it an important issue to understand. As discussed above, some of the inconsistencies within food desert literature may be due to too narrow of a concept of “access.” Though proximity-based measures of food desert dominate the literature, a growing number of scholars are calling for research that considers other factors as well, including price of food, transportation, and the preferences and experiences of food desert residents themselves. This dissertation incorporates these considerations to reevaluate the ways in which we conceptualize food access. Furthermore, the experience of life in a
food desert cannot necessarily be generalized from place to place, and so the need for research at different scales is clear. This dissertation begins at a broad scale to understand national-level patterns in the consequences of food access, and then considers how local factors may uniquely affect the experience of poor food access for food desert residents.

These three projects highlight the value of research on food access that considers the physical environment as a context in which individuals interact with each other and with their surroundings. The different scales of this proposal allowed me to examine issues of food access from multiple perspectives, resulting in a more comprehensive understanding of the topic. In Chapter 2, I demonstrate that food insecurity is affected less by food environments and more by household resources, and that these effects are not generalizable in all places. In Chapter 3, I make a case for expanding the concept of food access to include the actual needs and wants of food desert residents, geographically representing that people rarely shop at the stores closest to their homes and explaining why in residents’ own words. Finally, in Chapter 4, I provide insight into the ways in which a community facing poor food access works to overcome this within the context of institutional discrimination.
CHAPTER 2: HOW DETERMINANTS OF FOOD INSECURITY VARY ACROSS SPACE AND PLACE

INTRODUCTION

Nearly 15% of U.S. households are food insecure, which amounts to about 49 million Americans, or one in every six people (Bread for the World 2014; USDA ERS 2014). Broadly defined, food security means access at all times to enough food for an active, healthy life; more specifically, it includes both the ready availability of nutritious and safe foods, as well as an assured ability to access these foods (Campbell 1991). Food insecurity, therefore, exists whenever access to food is limited, uncertain, or restricted. Most of the literature on the causes or risk factors for food insecurity deals with compositional factors—for example, what types of people are more likely to be food insecure, or how specific household characteristics lead to food insecurity (Barrett et al. 2010; Rose 1999). Food insecurity rates are higher among households with children, African-American households, and Latino households (Bread for the World 2014; USDA ERS 2014). In addition, over half of the food insecure counties in the United States are in rural areas of the country (Feeding America 2013).

Less research, however, has examined the potential relationships between food environments and food insecurity. Food environments encompass the available food retail stores and restaurants, area food prices, food assistance programs, and any other features of a person’s surroundings that relate to food provisioning (USDA 2015). Thus, in food environments with low access to food, it may be more difficult for residents to get enough food, and as mentioned above, people are food insecure when their access to food is limited.
or restricted. Lytle (2009), for example, hypothesizes that the more restricted a food environment is in terms of food access, the greater its effect on a resident’s shopping and eating habits. Many scholars therefore consider food access to be a necessary contributing factor to food security (Barrett et al. 2010; Campbell 1991). And in fact, the people who are most likely to live in areas with poor food access track closely with the people most likely to be food insecure. Low-income communities, communities of color, and rural areas tend to have lower access to food (Caspi et al. 2012b, Larson et al. 2009, Walker et al. 2010). Thus, given the range of individual, household, and neighborhood characteristics that may interact to influence food security status, there is a need for more research on the relationship between food access and food security.

*General trends in food insecurity*

Scholars have found that certain populations are more likely to experience food insecurity than others. Black American households experience food insecurity at nearly three times the rate of White households (Chilton and Booth 2007). Higher rates of food insecurity are also associated with single-headed households, larger households, and Latino households (Alaimo et al. 1998; Mauldon 1996; Rose et al. 1998). People who rent their homes rather than own them are more likely to experience food insecurity (Cristofar and Basiotis 1992), as are households in which the head of household has not completed high school (Rose 1999). Several major national studies, including the Third National Health and Nutrition Examination Survey (NHANES III) and the Survey of Income and Program Participation (SIPP), have also demonstrated negative correlations between food insecurity
and household income (Furness et al. 2004; Rose 1999). As household incomes increase, the percent of households that experience food insecurity or hunger declines (Rose 1999). Other scholars have found that neighborhood social disadvantage is also negatively correlated with food security (Walker et al. 2010). Economically disadvantaged areas, for example, are less likely to attract chain supermarkets, due to corporate concerns that these stores would not be profitable enough; this can lead to a dearth of food stores in these areas, and also increase travel time and cost to food stores for residents of these areas (Chung and Myers et al. 1999; Zenk et al. 2005).

There are a variety of negative effects associated with food insecurity, as well. Some scholars have considered how dietary quality and health are worse among food insecure populations. For example, research suggests that food insecure individuals consume fewer servings of fruits and vegetables (Kendall et al. 1996; Tarasuk 2001) and may rely more on less expensive, less nutritious energy-dense foods (Drewnowski and Specter 2004; Townsend et al. 2001). Food insecurity is also associated with hypertension and risk of cardiovascular disease (Seligman et al. 2010). Several scholars have also found that food insecurity is correlated with increased risk or prevalence of obesity for women, and especially for Black and Latina women (Adams et al. 2003; Martin and Ferris 2007; Martin and Lippert 2012; Olson 1999; Townsend et al. 2001). In addition to physical effects, food insecurity may also affect mental health, contributing to increased stress, depression, and anxiety (Adams et al. 2003; Frongillo 2003). Food insecure children are also at higher risk of physical and mental health effects, including diabetes, high cholesterol, and anxiety (Jyoti et al. 2005). Further, food insecure children are more likely to have difficulty in school, due to higher levels of
hyperactivity, absenteeism, difficulty concentrating, and retaining new memories (Alaimo et al. 2001). These potential effects of food insecurity are especially concerning for children, whose bodies and brains are undergoing maximum growth (Rose-Jacobs et al. 2008).

Food access and food insecurity

Prior to the 1990s, food insecurity was often defined in terms of food availability. Sen (1981), however, argued that people are often food insecure because their access to food is restricted, not because there is no food available. Since that time, definitions of food insecurity have shifted to incorporate food access as an important contributing factor. Areas of poor food access are characterized by limited food options, especially healthy food options. Again, food security means having access at all times to enough nutritious and safe food for an active, healthy life; therefore, it follows that food insecurity rates would be higher in areas with low food access.

Many studies demonstrate that neighborhoods with poor food access are much more likely to be found in lower-income, predominately minority areas when compared to higher-income, predominately white areas (Dunkley et al. 2004; Morland et al. 2002; Powell et al. 2007; Raja et al. 2008; Short et al. 2007). These same areas most likely to have poor food access are also at higher risk for food insecurity. This could be because resident in low-access food environments have to spend more time or financial resources traveling farther to find food (Morton et al. 2005). Residents may also have a harder time finding nutritious food, also important for food security. For example, areas with low food access tend to have more small grocery stores, corner stores, and convenience stores than areas with high food access.
(Block and Kouba 2006; Moore and Diez-Roux 2006), but these types of stores are more likely to stock more unhealthy products and fewer healthy choices and fresh produce (Freedman 2009; Short et al. 2007; Zenk and Powell 2008). The health effects of living in a food-poor area also track closely with those of being food insecure. For example, some studies have found that food-insecure women, in particular, have higher obesity rate; living in an area with low food access is also correlated with higher BMIs and obesity (Booth et al. 2005; Larson et al. 2009; Lopez et al. 2007; Schafft et al. 2009).

The cost of the food that is available in areas of poor food access could also limit residents’ food security (Jetter et al. 2006). The small corner and convenience stores that are more prevalent in food deserts tend to be significantly more expensive than supermarkets, and cost is an especially salient concern for the low-income residents who are most likely to live in food-poor environments (Alkon et al. 2013; Hendrickson et al. 2006; Walker et al. 2011). If food is technically available in a given neighborhood, but beyond the means of nearby residents, then that neighborhood must still be classified as having low food access (Breyer and Voss-Andreae 2013; Cassady et al. 2007; Krukowski et al. 2010).

Spatial variation in food insecurity

Access to food, both physically and financially, is necessary to maintaining food security, and is also more likely to be limited in food-poor environments. Because of this, there is reason to suggest a relationship between food environments and food insecurity. At the same time, the current research on food insecurity highlights the importance not only of neighborhood factors, but also individual and household factors in influencing food security.
status. It is likely, therefore, that factors at all three levels—individual, household, and neighborhood—actually interact to influence food security status in a given area. For example, food insecurity and food access can affect people differently in urban versus rural neighborhoods, for a variety of reasons that may include the availability of transportation, lower cost of living in rural areas, and cultural differences (Kendall et al. 1996; Nord 2000). Rural food desert residents, for example, tend to have less access to food pantries and public transportation to help them access food (Piontack and Schulman 2014), but are more likely to engage in reciprocal food sharing within their community and have access to food from gardens (Morton et al. 2007; Morton et al. 2005). Being a racial minority can also influence other factors differently depending on where one lives; for example, Alkon (2013) found that the southern heritage of African-Americans vendors at a farmers market in California—including a legacy of racism, exploitative sharecropping, and discrimination by the government and private entities that systematically stripped southern Blacks of their land and autonomy—strongly influenced the cultural norms and expectations at the market. One manager of the farmers market noted that even though the area’s Latino and Asian communities also face high food insecurity, fresh produce is abundant in their communities, which he attributed to the fact that they still have farmers. In contrast, he links African-Americans’ exclusion from food production to their lack of access to healthy foods; both processes are linked to institutional racism (Alkon 2013).

Each of these studies suggests interplay between different dimensions of food access, and further suggests that this may vary in different geographic areas. Much of the research on food insecurity is cross-sectional or qualitative in nature, however, focused on a specific
subset of the population or a case study of a specific area (Gorton et al. 2010). Few studies have incorporated a multilevel approach that considers how individual and household characteristics might interact with neighborhood or environmental features. This is crucial because compositional factors vary across space and time, and the effect of an individual or household level variable could vary depending on neighborhood or regional characteristics (Cotter et al. 2007). If a high proportion of households in a given area are food insecure, for example, how can the researcher know if this is due to an individual or household factor, such as race or income, or to neighborhood characteristics like rurality or the presence of supermarkets? Furthermore, it is possible that certain factors matter more in some areas than in others, in other words, that compositional factors interact with contextual ones with different results in different places (Lobao et al. 2007; Lobao et al. 2008).

RESEARCH QUESTIONS

This project is a spatial analysis of food insecurity in the United States, designed to illustrate how compositional and contextual factors influence food insecurity in different ways across different places. While food insecurity may be more likely in places with poor food access, this may also be compounded by characteristics of residents which also place them at risk of food insecurity. A standard OLS regression could identify certain factors that influence food security status, but it would fail to capture whether these influences were consistent across places. Spatial analyses are especially appropriate for these questions because they are able to measure whether differences in food security across places are due to characteristics of the areas themselves or to differences between the types of people who live in those areas.
If there were no inequality in the distribution of food insecurity, then food insecurity would appear to be randomly distributed throughout the United States. Some evidence already demonstrates that this is not the case, since we know that food insecurity is higher in certain places, for example minority neighborhoods and rural areas (Chilton and Booth 2007; USDA ERS 2014). What we do not know is whether this is more a result of the places themselves, or of the people who live there. Spatial analysis allows me to examine the relationships between determinants of food insecurity in a way that no other studies have done, to answer the following questions: Are people more likely to be food insecure if they live near other people who are food insecure? How much of the effect of neighborhood factors on food insecurity is driven by residents’ characteristics as opposed to geographic place? How do determinants of food insecurity vary across place? In reality, some variables may “matter more” for food security status in different neighborhood contexts, depending on the food environment and other neighborhood-level factors.

DATA AND METHODS

This project utilizes data from the USDA’s National Household Food Acquisition and Purchase Survey (FoodAPS), a nationally representative, stratified sample of 4,826 U.S. households regarding the food acquisition and purchasing behaviors of all members of sampled households over a 7-day period. Participants were also surveyed regarding household characteristics, demographic information, food shopping preferences, and food security status. In addition, FoodAPS collected data on each participant’s food environment, based on proximity to grocery stores, availability of food, and regional prices of food. Due to
missing data from some households, the final analytic sample for this study was 3,878 households. Descriptive statistics for the sample can be seen in Table 2.1.

My dependent variable was household food insecurity, operationalized according to the USDA food security continuum. Heads of households were asked a series of questions about their experiences meeting their food needs for the past year, for example, “In the last 12 months, did you ever cut the size of your meals or skip meals because there wasn’t enough money for food?” There are 10 questions for households without children and 18 for households with children. Based on their responses, households were placed on a continuum that included high, marginal, low, and very low food security; for this analysis, I used a binary measure of food security, where marginal and high food security equal food secure, and low and very low food security equal food insecure, because this is the most common way that the USDA analyzes and reports this variable.

At the household level, I began with the following explanatory variables: total household income over the last month, household size, number of children under the age of 12, whether the home is owned or rented, whether the household has a car, and whether the household is in a rural area, defined by the USDA as a place with fewer than 2500 people (USDA 2016). I also included a self-reported measure of financial condition; heads of households could choose from five responses ranging from “very comfortable and secure” to “in over your head.” In addition, I included race of the head of household and whether the head of household had below a high school education; these variables captured individual characteristics but at the household level. Finally, I wanted to include a variable to measure food access in the food environment. The majority of the literature on food access defines
access in terms of the availability of food stores, both their proximity and quantity (Morland et al. 2002b; Moore and Diez-Roux 2006; Powell et al. 2007; Zenk et al. 2005). Thus, I included a variable to measure food availability, operationalized as the number of supermarkets within one mile of urban homes and ten miles of rural homes, with supermarkets classified as food retail establishments with greater than 20 employees or over $2 million in annual sales; this variable is a measure of the neighborhood food environment but at the household level.

Because some studies have shown that there is a heightened risk of food insecurity in households that recently experienced budgetary stressors (for example, a reduction or loss in Supplementary Nutrition Assistance Program (SNAP) benefits), I initially included SNAP participation and the amount of SNAP benefits received as an explanatory variables. Ultimately, however, the SNAP variables were highly collinear with household income and so were excluded from the final models. Similarly, I excluded whether the home was single-headed because this variable was highly collinear with household size and number of children.

Previous research has also demonstrated a correlation between food security and neighborhood disadvantage (Walker et al. 2010). Greves et al. (2010) articulate five variables that collectively measure neighborhood social disadvantage: percent Black population, percent of people who own their homes, percent single-headed households, percent of population with a high school or greater education, and median household income. I therefore included each of these variables in my models, as well. These variables are at the block group level, and I obtained them from the U.S. Census Bureau Five-year American
Community Survey centered on 2010. As mentioned above, food access is often defined in terms of availability of food stores. Caspi et al. (2012a) further note that affordability is another important element of food access. Therefore, I also included a variable to measure food affordability, operationalized as a regional average “basket price” of minimally nutritionally-adequate food for a family of four. Basket prices were calculated using the Thrifty Food Plan (TFP). The TFP, constructed by the USDA’s Center for Nutrition Policy and Promotion, estimates how much a household of four would need to spend to purchase a diet that meets the Dietary Guidelines for Americans (CNPP 2007). The cost of the TFP is also used to calculate SNAP benefits. For FoodAPS, data were collected from stores in and around all 50 counties in the study over the course of one year, then averaged to create regional basket prices. This variable is at the county level, the smallest unit available.

I first estimated a logistic regression to help determine which variables were appropriate for inclusion in the spatial models. I used backwards stepwise elimination to evaluate the relationship between each independent variable and the dependent variable in a multivariate context. This standard regression also serves as a point of comparison for the geographically weighted regression, to demonstrate the value of including place in the model. After determining which variables should remain in the spatial models, I used Moran’s I, a spatial descriptive statistic, to determine whether there was spatial autocorrelation between the explanatory variables and household food security status. Based on those results, I used exploratory spatial models, spatial lag and spatial error models, to estimate the effect of place, neighborhood contextual factors, and household compositional factors on food insecurity.
Spatial lag and error models are similar to a standard regression, but each add an additional, unseen spatial variable. This can be conceptualized by thinking of magnetic filings on a piece of paper, clustered in a few groups rather than randomly scattered. It might be that the filings themselves are magnetized, and are therefore attracted to each other into clusters—in other words, they are affected by their neighbors. But it could also be that there are magnets underneath the paper drawing the filings to different spots—in other words, they are affected by a characteristic (a hidden magnet) of specific places of the paper. Looking at the filings, it is impossible to know which process is at work, or if both are, but spatial statistics help determine this. Spatial lag models measure neighbor effects, as in the case of magnetized filings, while spatial error models measure place-specific effects, as in the case of hidden magnets.

In my spatial lag model, the additional variable represents the average value of the food insecurity among neighbors; in this case, “neighbors” is defined as people in the study who live in neighboring block groups. This allows the model to estimate the strength of “spillover” effects from neighbors’ food insecurity for each household. This term could represent an actual, direct spillover effect occurring in the world—for example, in a neighborhood with strong social ties, people could share food at social events or church functions. Neighbors who are food secure might be more likely to donate to food banks, which would help increase the food security of neighbors. In this way, communities with a high overall food security could directly help improve the food security of community members who otherwise have poor access to food. Conversely, communities with few social ties and fewer resources could feel the opposite effect; if there are few food-secure
households in the neighborhood, there might be fewer donations and higher demand for food at food banks leading to fewer resources provided per household.

Importantly, however, the spillover term in a spatial lag model does not necessarily imply this kind of direct effect. Other indirect factors that influence food insecurity at an area level would also influence estimates produced by this method. While a spatial lag model does not attempt to model these factors explicitly (the spatial error model described below uses this approach), it indirectly assesses these factors based on their neighborhood-level impacts. For example, while donations to a food bank might depend on neighbors’ food security, a community garden could have an effect independent of neighbors’ food security. A spatial lag model cannot distinguish between a true spillover effect from neighbors and a separate, but community-wide, effect from an unmeasured variable. In either case, however, the model estimates the effect of space, operationalized as average household food security status among neighbors. It can be distinguished from the spatial error model described in the next section because a spatial lag model considers communities with a similar level of food insecurity as being the same type of “place.”

The average level of food insecurity in each unit in a spatial lag model is calculated using an adjacency matrix, which identifies a list of neighbors for each participant, and weighting scheme. For this analysis, I used a Queen’s Case adjacency, which uses the broadest terms to define neighbors; block groups touching at any point are considered to be neighbors. A weighting scheme is then applied to the adjacency matrix to determine how neighbors’ information should be entered into the model. For example, the number of food insecure neighbors could be added as a variable, or the rate of food insecurity among
neighbors could be added as a variable. I used the latter approach for this analysis because it allows for meaningful comparisons within different community sizes.

Spatial error models attempt to capture the effects of place. Instead of using the average value of food insecurity in the neighborhood, as in spatial lag models, this method uses a latent-variable approach. In a traditional regression, measured independent variables cannot ever fully predict the dependent variable, partly because the relationship between two variables is never perfectly linear, and partly because there are typically many other variables that have effects that are not measured. This results in small differences between the actual measured outcomes and the outcomes predicted by the model, called residuals, and there is a different value for the residual for each individual, or in this case household, in the study. These residuals are interpreted as the effects of other unmeasured variables on the dependent variable under study. For example, a household with a large and successful garden (a variable not considered in the model) might have higher food security than would be expected; this person would have a large positive residual. A household without a working refrigerator would likely have lower food security than would be predicted by the model, which does not take this into account, and would have a negative residual.

In the spatial error model, these residuals are split into two components: individual effects and place-based effects. In effect, the average residual value in each area is calculated, and then individual residuals are expressed as individual deviations from this mean area-level residual. This enables estimation of neighborhood-level effects that are place-specific, but uncorrelated with the measured variables; in other words, the effect of unmeasured neighborhood factors, or characteristics tied to place itself.
Finally, I employed geographically-weighted regression to determine how the effects of place varied differentially based on various neighborhood (contextual) and household (compositional) factors. This method runs a separate regression for each household in the dataset. In each household regression, neighbors within a given search distance, or bandwidth, are included. Nearby observations are given greater weight and farther observations are given lower weights. The model returns a distribution of values for each regression coefficient across the study area.

Spatially naïve model

Table 2.2 presents the result of the non-spatial logistic regression model, with the variables that were included a priori or because they were statistically significant. At the household level, household size and self-reported financial condition had the largest effects on household food security status; each increased the odds of a household being food insecure by 1.2 times and 3.2 times, respectively. These effects were also highly significant. Household income was also significantly related to food security status; as income rose, the odds of being food insecure dropped. Home ownership also had a positive effect, decreasing the odds of being food insecure. In contrast, if the head of household had below a high school education, this increased the odds of being food insecure by 1.5 times. Finally, car ownership had a barely significant effect on food insecurity, though the effect was positive. I kept this variable in the model despite its weak significance because research suggests that access to transportation has an important effect on food access and, by extension, food security status (Alkon et al. 2013; Dunkley et al. 2004).
At the neighborhood level, the only variable with a significant effect on household food insecurity was the percent of the population with above a high school education. Neither race nor rurality were significant household-level variables in this model. However, I decided to keep them in the model because of previous research that suggests that food insecurity rates are higher in rural areas (Feeding America 2013) and among Black households (Chilton and Booth 2007). I hypothesized that there might be some hidden spatial relationship going on that might become clear with the spatial models later. Similarly, though neither food environment measure—availability (number of supermarkets) and food affordability (regional basket price)—had a significant effect on food insecurity, I hypothesized that this might also be explained by latent spatial relationships not measurable with this type of regression.

*Space, place, and food insecurity*

As discussed above, the logistic regression gives us some idea of what variables have an influence of food insecurity, but cannot account for variations in these effects across place. For place to have an effect, there must be spatial autocorrelation, meaning that the average outcome in a given area is associated with the average outcome in neighboring areas. In order to test for spatial autocorrelation, I first estimated Moran’s I for the outcome variable, food insecurity. The Moran’s I statistic was 0.065 (p-value < 0.001), indicating that food insecurity was not randomly distributed across place. In other words, household food insecurity in areas close to each other was more similar than in areas far away from each other. This demonstrates that place does indeed play a role in food security status.
I then developed preliminary spatial models to see if I could determine the driving factors behind this spatial autocorrelation. It could be, for example, that food insecurity was influenced by food insecurity in neighboring regions (space). Or, food insecurity could be affected by a latent, unmeasured spatial variable (place). It is also possible both of these factors were at work. To start examining spatial effects, I ran a spatial lag model and a spatial error model, using the same inputs and outcome as the logistic regression model. These types of models are meant as descriptive tools to test for an effect of space and place, respectively.

**Spatial lag**

First, I used a spatial lag model to assess the role of space in the effects of household and neighborhood compositional factors on food insecurity. The results of the spatial lag model are presented in Table 2.3. As in the non-spatial model, in the spatial lag model, household income, household size, the number of children, financial condition, and the household head’s level of education all had significant effects on household food security status. The food environment measures still exhibit no significant effect on food insecurity in this model. Unlike the previous model, however, the variation in food insecurity is not based solely on the direct effects of the independent variables. Instead, the variation is also based on the spillover effect described above; in other words, whether the average food security status in neighboring block groups also affects household food security status. In the logistic regression, cases were grouped together by neighborhood and household commonalities. For example, it measured the effect of owning a car among all cases with the same number of children and a similar median household income, etc. We can think of this as the effect of owning a car in case i, compared to all other cases like i. This compares similar cases
regardless of their location. In the spatial lag model, however, cases were grouped by the average outcome in geographically near areas. We can think of this as the effect of owning a car in case $i$, compared to similar cases and controlling for the average food insecurity in case $j$, case $k$, and so on for all neighbors of $i$. This is similar to magnetized filings having an effect on their neighbors by attracting or repelling nearby filings.

The results of the spatial lag model, therefore, provide a much more fine-tuned comparison that differentiates between, for example, a predominately Black neighborhood surrounded by predominately Black neighborhoods (perhaps in the Southern Black Belt) and a predominately Black neighborhood surrounded by predominately White neighborhoods (perhaps in a rapidly gentrifying area). In my analyses, the logistic regression shows that there is not a statistically significant effect of not owning a car, but the spatial lag model reveals that there is. This means that over all neighborhoods, regardless of place, owning a car does not make a big difference for food insecurity. But if we group cases by the overall food security status of their neighborhoods—e.g. most households food secure, half of households food secure, few households food secure—then we see that people within these categories who own cars are more likely to be food secure than people who do not. This therefore suggests that owning a car “matters more” in certain areas—this might be, for example, low-income areas, an area where public transportation is limited, or an area in which stores are farther away. Though the spatial lag model cannot tell us which of these possible scenarios is the case, by including neighborhood-level food security as a variable, it does demonstrate that place is a significant factor. Further, this suggests that it would be
hasty to assume that having a car does not matter for food security based solely on a non-spatial set of analyses.

In this case, the overall model demonstrates very slight negative spatial autocorrelation, meaning that cases nearer to each other are more dissimilar than if they were randomly distributed. This effect is not significant, but it does suggest that, in this sample, food insecure people were slightly more likely to live near people who were food secure rather than near other people who were also food insecure. Finally, while the spatial lag model does suggest that place is important to consider, the overall model is not significant. That is, it does not explain significantly more of the variance in the outcome than the logistic regression model. In other words, participants’ food insecurity was not affected by the level of food insecurity of their neighbors to a significant degree. This does not mean that the model is not useful, however, because it still controls for an additional variable (the spillover effect of space) that the non-spatial model cannot account for. Though not enough to fully explain the spatial autocorrelation revealed by the Moran’s I statistic, it demonstrates that some independent variables do have varying effects across place, and indicates a need for deeper probing of the spatial factors at work.

Spatial error

Because the spatial lag model indicated spatial processes at work, but was not significant, I also ran a spatial error model. While the spatial lag model adds an unseen variable to account for area-level effects, the spatial error model adds a variable to control for physical place itself. In other words, this model assumes that there may be features inherent
to a place itself that could confound the other variables in the model. The results of the spatial error model are presented in Table 2.4.

In the spatial error model, all the independent variables that were significant in the spatial lag model remained significant—household income, household size, number of children, home ownership, financial condition, car ownership, education of the head of household, and neighborhood-level education. The significance of car ownership increased compared to the spatial lag model. We can interpret this to mean that, within this sample, these variables have a significant effect on food insecurity no matter where a household is physically located within the United States. Because most of these variables were consistently significant across multiple types of models, we can be reasonably sure that they have an effect on food insecurity that is not confounded by an unmeasured variable at the neighborhood level. The more interesting result in the spatial error model is the effect of car ownership, which went from being barely significant in the logistic regression to highly significant in the spatial error model. In the logistic regression, therefore, the effect of car ownership was confounded by some latent, place-based variable. This means that a greater percentage of neighborhood-level car ownership is associated with some other neighborhood-level variable that is negatively associated with food security—for example, a greater percentage of the population might own cars in rural areas, where educational attainment is lower on average, than in urban areas. In the logistic regression, this association masks the positive, individual-level effect that owning a car has on food security, leading to an insignificant result. The spatial error model removes this confounding association, leaving
only the individual-level effect of car ownership on food insecurity, which is shown to be highly significant.

No additional variables expressed significance in the spatial error model. Most notably, the two measures of the food environment remained insignificant. Unlike the spatial lag model, however, the spatial error model was statistically significant, meaning that it explained significantly more of the variance in household food insecurity than the logistic regression model. This means that geographic place significantly affected food insecurity, independent of the household or neighborhood characteristics included in this model, as with hidden magnets attracting filings on a piece of paper.

*Geographically-weighted regression*

As mentioned above, spatial lag and spatial error models are very useful for exploring whether place matters, and whether this is related to space, place, or both. The spatial lag model revealed that household food insecurity is not significantly affected by the average food insecurity in surrounding block groups. The spatial error model revealed that there is some quality about certain places in the United States that significantly affects food insecurity. These models cannot, however, tell us anything about how the effects of independent variables might vary across place or why these patterns might be occurring. I developed a more sophisticated spatial model, geographically-weighted regression (GWR), to estimate how the effects of household factors and neighborhood factors on food insecurity varied across places. The results of the GWR are presented in Table 2.5.
The GWR revealed that the influence of many household compositional and neighborhood contextual factors varied across the United States in different ways, though overall the effect sizes were very small. The second column shows the smallest percent effect of each independent variable on food insecurity in the U.S., while the last column shows the largest effect. For example, Hispanic households were slightly more likely to be food insecure than White households, and this effect ranged from less than 1% to about 4% across the country. This variation is plotted in Figure 2.1, where we can see that homes with a Hispanic head of household were decreasingly likely to be food secure moving from west to east. The sign of the effect size was reversed so that the larger effect sizes would appear higher on the graph for readability.

Many of the variables displayed clear geographic patterns like in Figure 2.1. Owning a car, for example, offered greater protection against food insecurity moving from east to west. This relationship is graphed in Figure 2.2. However, we can more easily visualize this variation by mapping the results. Figure 2.3 is a map of these differences within the United States. The circles on this map represent each sampled area within the FoodAPS data. To prevent identification of any cases, I jittered the coordinates and ballooned the markers, but though we cannot pinpoint the effect in any specific area, the variation and trend are clear. The map shows an east-west difference in the effect of car ownership on food insecurity. On the east coast, for example, owning a car decreases the likelihood of being food insecure by about 5.5%, while on the west coast owning a car decreases the likelihood of being food insecure by 6.3%. Thus, owning a car offers greater protection against food insecurity in the west. This could be attributed to differences in both transportation and the food environment.
in the east or west. For example, towns in the west might be more spread out, meaning that people tend to live farther from a supermarket than in the east, which would make a car more valuable. Or, there could be better public transportation in eastern towns, which reduces the need for a car. In this map, we can also see a slight variation from north to south, though this is not as obvious as the east-west variation. This finding highlights one way in which limited access to food might affect food security status. It is unlikely that owning a car itself protects against food insecurity, but several studies do suggest that food access is more limited for people who do not own cars, and therefore cannot easily travel to shop for food (Dunkley et al. 2004; Ver Ploeg et al. 2015; Whelan et al. 2002).

Many of the variables exhibited spatial variation like car ownership. Homes where the head of household was Black were less likely to be food secure than White-headed households everywhere, but this likelihood was even greater in the west and northwestern parts of the country compared to the east coast. Other factors had less spatial variation; self-reported financial condition, for example, had a relatively constant effect throughout the country. As shown in Figure 2.4, in all places, the likelihood of food insecurity increased by about 17% as financial condition worsened.

In addition to exhibiting a smaller range of effect size, there was no clear pattern of geographic distribution for financial condition. Whereas Figures 2.1 and 2.2 showed a relatively linear change moving from west to east, the effect sizes in Figure 2.4 are distributed much more irregularly. Comparing Figures 2.1-2.3 with Figure 2.4 allows us how some variables could “matter more” in certain places. In this particular model, the biggest geographic variation in household-level effect sizes were for the racial variables, especially
for Hispanic- and Black-headed households. Though the overall effect sizes were small, the effect of race in Black households was twice as great in some places, while the effect in Hispanic households was more than four times as great in some places. In contrast, the effects of household income, household size, home ownership, educational attainment, and financial condition showed little to no place-based variance.

Interestingly, some of the neighborhood-level variable effects varied quite a bit across the country. Though only area-level educational attainment was shown to have a significant effect on food insecurity in the previous models, the GWR reveals that this could be due to wide variation in the effect size of other variables. Since the previous models averaged the effect of variables in all places, it is possible that the stronger effect in some places was canceled out by a weaker effect in other places. For example, the percent of homeowners in a given area decreased the likelihood of being food insecure by only 0.08% in some areas, but by over 5% in other areas. Similarly, the effect of percent Black population and food affordability varied noticeably in different places. Though all had somewhat small effects overall, we could miss important relationships driving food insecurity in some areas by disregarding certain factors based on the results of non-spatial models.

I originally hypothesized that the effect of different determinants of food insecurity would vary across place. While this was true for the effects of some variables, others remained fairly consistent across place. This could be because the effects of some variables are more likely to be influenced by social or cultural factors than others. The variables with relatively consistent effect sizes all related directly or indirectly to available household financial resources or poverty. Multiple large-scale, nationally representative studies have
demonstrated a negative relationship between food insecurity and poverty (Furness et al. 2004; Rose 1999). On the other hand, the effect of race might be influenced by institutional discrimination or residential segregation in different parts of the country.

Looking back at Figure 2.1, being Hispanic had a stronger negative impact on food security status in the east; while the GWR cannot tell us why this is, there are a number of possibilities. For example, Hispanic individuals are more likely than others to work agricultural jobs, which are largely dependent on seasons and the weather. On the west coast, more consistent weather patterns and warm temperatures could mean that income is steadier for agricultural workers than in the eastern United States, and income heavily influences the likelihood of being food insecure. Being Black at the household-level more negatively impacted food security status in the west and northwest. Interestingly, however, as percent Black population in an area increased, there was actually a (very slight) increase in household-level food security; this effect was also greater in the west and northwest. This suggests that, on average, Black households are less likely to be food secure when living in an area with a lower overall Black population; perhaps this result captures some effect of gentrification, whereby communities experience a rapid influx in White populations along with a general rise in cost of living (though there is considerable debate over whether this is actually beneficial to lower-income residents) (Lees 2008). It is of course important to note that, in this analysis, the effects of race were very small and not statistically significant. Here I do not mean to suggest that these processes are actually occurring, but to demonstrate how the GWR shows spatial variation.
DISCUSSION AND CONCLUSIONS

The results of these models were in some ways consistent with my expectations and in other ways surprisingly inconsistent. For example, across all the models, the odds of being food secure decreased with household size, which makes sense because each additional member of the household increases the amount of food needed. The models also showed a significant increase in the odds of being food secure as household income increased, while worsening financial condition had a strong, negative effect on food security status. This illustrates how important financial resources are for food security, supporting several studies that link poverty and food security (Cook and Frank 2008; Furness et al. 2004).

I was surprised, however, to find that rurality did not have a significant effect on food insecurity after controlling for other variables. There is ample evidence to suggest that food insecurity is much more common in rural areas in the United States (Feeding America 2013; USDA ERS 2014). The fact that rurality did not have a significant effect on food insecurity does not necessarily mean that it is irrelevant, however. Instead, the effect of rurality might already be captured by other neighborhood-level variables. For example, the percent of the population with greater than a high school education was strongly and significantly related to food insecurity in all the models. Other research demonstrates that a much greater percentage of adults in rural areas have a terminal high school diploma compared to adults in urban areas (DOE 2013). Thus, higher food insecurity in rural areas might have been explained by area-level educational attainment in the model, rather than by rurality. Also, the FoodAPS study used a population-weighted sample, so there were fewer rural areas represented compared to non-rural areas. This may have made it more difficult for an effect of rurality to be detected.
I was also surprised to find that the household head’s race did not have a significant effect on food insecurity, because many previous studies find that food insecurity is much more likely in Black and Hispanic households (Chilton and Booth 2007; Feeding America 2013; USDA 2014). Again, this does not necessarily mean that race is irrelevant, but that it does not have an effect on top of neighborhood-level factors. Similar to above, Black adults are more likely to have a terminal high school education than other adults (DOE 2013), which could have absorbed the effect of Black race. Also, median income for Black and Hispanic households is considerably less than for White households (Census 2014). It is also possible that household income absorbed the effect of race in these models.

Limitations

The FoodAPS data are especially appropriate for establishing the value of the spatial models I use here because they are nationally representative and randomly sampled. The cluster design also made it possible to run spatial lag and spatial error, and GWR models, which require cases to have neighbors in order to work. Because the sample was census-based, this also allowed me to link to other census data. However, because FoodAPS sampled only one county per state, there is still a tremendous amount of geographic variation between the study sample and the U.S. as a whole, and so it is likely that there are also a lot of spatial processes that are not captured in my models.

Another limitation of my study is that there was a fair degree of collinearity between some of my independent variables, which made it hard to develop a model. In some cases, the collinearity was high enough to warrant excluding variables, most notably SNAP
participation, which is a detriment to these models because of previous research which suggests that SNAP could play an important role in mitigating food insecurity (Townsend et al. 2001). Another obstacle to including SNAP in the model was due to the fact that most households in the study were not eligible to receive SNAP benefits because their incomes were too high. Of the participants who were eligible, very few did not receive it. It was therefore extremely difficult to measure the effect of SNAP because there were not enough people in the different groups for a meaningful comparison. A future study would benefit from oversampling people who are eligible for SNAP but do not receive it.

**Implications for future research**

It is important to note that my measures of the food environment—food availability and food affordability—were insignificant in all of the models. I kept these variables in the spatial models even though they were not significant in the logistic regression model because I suspected that there might be a spatial factor masking their effects. Car ownership, for example, was not significant initially, but it turned out that this was because some latent place-based factor was hiding this effect. In the case of food availability and food affordability, however, the spatial models did not suggest a latent spatial effect at work. This non-finding has important implications for literature on food access and food insecurity. Since the definition of food security includes access to food, I hypothesized above that measures of food access would influence household food security status. I operationalized food access using the most commonly used conceptions in current research on food environments—availability and affordability of food (Caspi et al. 2012b; Morland et al.
My findings clearly indicate, however, that food access as defined here did not affect food security status, irrespective of spatial processes, and so my hypothesis is rejected.

However, I do not think that these findings necessarily mean that food access does not have an effect on food insecurity. Instead, I join other scholars in arguing that the definition of food access used here is inadequate, and that measures of the food environment should move away from proximity- or quantity-based definitions (Alkon et al. 2013; Guthman 2011; Lytle 2009). For example, while I did include a neighborhood-level measure of food affordability, this only captured prices at stores in the same geographic area that households are in. Several recent studies, however, find that consumers rarely shop within their immediate food environment, instead bypassing their nearest stores to reach preferred options (Hillier et al. 2011; Tach and Amorim 2015; Ver Ploeg et al. 2015). This suggests that people’s food environments may actually be much larger and more complex than I allowed for in my models. And in fact, Ver Ploeg et al. (2015) utilized the same FoodAPS dataset as I used here. Knowing that FoodAPS participants rarely shopped at their nearest stores for food sheds light on why the availability or affordability of nearby stores would have little or no effect on residents’ food security status. Future studies on how food access affects food insecurity must therefore expand the conception of food access to better capture how it looks to actual residents of food poor environments.

Though the effects in this sample were not large, my findings clearly suggest that some variables matter more for food insecurity in different places. The models provide a clear example of how spatial variation can enhance our understanding of food insecurity.
nationally. The ways in which people experience food insecurity varied not only between different types of households, but also between the same types of households in different places; this demonstrates the importance of also approaching these research questions with qualitative methods, which typically provides a deeper, more place-specific focus. Ignoring place in questions of food access and food insecurity obscures relationships that may be important to fully understanding the complex interactions between households, neighborhoods, and place.
### TABLE 2.1: DESCRIPTIVE STATISTICS OF SAMPLE

<table>
<thead>
<tr>
<th>Household factors</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Food insecure (n=4367)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>3192</td>
<td>73.1</td>
</tr>
<tr>
<td>Yes</td>
<td>1175</td>
<td>26.9</td>
</tr>
<tr>
<td><strong>Race of HH head (n=4364)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>2618</td>
<td>60.0</td>
</tr>
<tr>
<td>Black</td>
<td>559</td>
<td>12.8</td>
</tr>
<tr>
<td>Hispanic</td>
<td>858</td>
<td>19.7</td>
</tr>
<tr>
<td>Other</td>
<td>329</td>
<td>7.5</td>
</tr>
<tr>
<td><strong>Has car (n=4359)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>678</td>
<td>15.6</td>
</tr>
<tr>
<td>Yes</td>
<td>3681</td>
<td>84.4</td>
</tr>
<tr>
<td><strong>Rural (n=4367)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>3159</td>
<td>72.3</td>
</tr>
<tr>
<td>Yes</td>
<td>1208</td>
<td>27.7</td>
</tr>
<tr>
<td><strong>Educ. of HH head (n=4364)</strong></td>
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<td></td>
</tr>
<tr>
<td>Less than high school</td>
<td>741</td>
<td>17.0</td>
</tr>
<tr>
<td>HS diploma or equivalent</td>
<td>1237</td>
<td>28.3</td>
</tr>
<tr>
<td>Some college</td>
<td>914</td>
<td>20.9</td>
</tr>
<tr>
<td>AA or higher degree</td>
<td>1472</td>
<td>33.7</td>
</tr>
<tr>
<td><strong>Financial condition (n=4361)</strong></td>
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<td></td>
</tr>
<tr>
<td>Very comfortable/secure</td>
<td>603</td>
<td>13.8</td>
</tr>
<tr>
<td>Able to make ends meet w/o much difficulty</td>
<td>1240</td>
<td>28.4</td>
</tr>
<tr>
<td>Occasionally have some difficulty</td>
<td>1285</td>
<td>29.5</td>
</tr>
<tr>
<td>Tough but keeping head above water</td>
<td>978</td>
<td>22.4</td>
</tr>
<tr>
<td>In over your head</td>
<td>255</td>
<td>5.8</td>
</tr>
<tr>
<td><strong>Mean (SD)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HH income (n=4367)</td>
<td>$3,449.00</td>
<td>(4147.41)</td>
</tr>
<tr>
<td>HH Size (n=4367)</td>
<td>3.0</td>
<td>(1.73)</td>
</tr>
<tr>
<td>HH Children (n=4367)</td>
<td>0.6</td>
<td>(0.97)</td>
</tr>
<tr>
<td>HH Availability (n=4367)</td>
<td>4.2</td>
<td>(7.88)</td>
</tr>
<tr>
<td><strong>Neighborhood factors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median HH Income (n=4367)</td>
<td>$51,430.00</td>
<td>$26,065.84</td>
</tr>
<tr>
<td>% Homeowners (n=4367)</td>
<td>60.4</td>
<td>27.1</td>
</tr>
<tr>
<td>% Black (n=4367)</td>
<td>12.5</td>
<td>18.4</td>
</tr>
<tr>
<td>% Completed HS (n=4367)</td>
<td>45.3</td>
<td>18.9</td>
</tr>
<tr>
<td>% Single headed (n=4339)</td>
<td>34.9</td>
<td>25.2</td>
</tr>
<tr>
<td>Basket price (n=4044)</td>
<td>262.5</td>
<td>54.9</td>
</tr>
</tbody>
</table>
## TABLE 2.2: LOGISTIC REGRESSION OF COMPOSITIONAL AND CONTEXTUAL EFFECTS ON FOOD INSECURITY

<table>
<thead>
<tr>
<th></th>
<th>Odds Ratio</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Household factors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HH income</td>
<td>0.87</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>HH size</td>
<td>1.20</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Number of children</td>
<td>0.83</td>
<td>0.002</td>
</tr>
<tr>
<td>Own home</td>
<td>0.52</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Financial condition</td>
<td>3.16</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Have car</td>
<td>0.81</td>
<td>0.075</td>
</tr>
<tr>
<td>Rural</td>
<td>1.13</td>
<td>0.320</td>
</tr>
<tr>
<td>Food availability</td>
<td>0.98</td>
<td>0.511</td>
</tr>
<tr>
<td>Black</td>
<td>0.98</td>
<td>0.908</td>
</tr>
<tr>
<td>Hispanic</td>
<td>1.26</td>
<td>0.068</td>
</tr>
<tr>
<td>Other race</td>
<td>1.17</td>
<td>0.369</td>
</tr>
<tr>
<td>&lt;High school education</td>
<td>1.49</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td><strong>Neighborhood factors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median HH income</td>
<td>1.00</td>
<td>0.332</td>
</tr>
<tr>
<td>Percent home owners</td>
<td>0.89</td>
<td>0.636</td>
</tr>
<tr>
<td>Percent Black</td>
<td>1.16</td>
<td>0.585</td>
</tr>
<tr>
<td>Percent with &gt;HS education</td>
<td>2.20</td>
<td>0.007</td>
</tr>
<tr>
<td>Percent single-headed HHs</td>
<td>1.07</td>
<td>0.766</td>
</tr>
<tr>
<td>Food affordability</td>
<td>0.94</td>
<td>0.503</td>
</tr>
</tbody>
</table>
TABLE 2.3: SPATIAL LAG MODEL OF COMPOSITIONAL AND CONTEXTUAL EFFECTS ON FOOD SECURITY (N=3,878)

<table>
<thead>
<tr>
<th>Household factors</th>
<th>Estimate</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>HH income</td>
<td>-0.36</td>
<td>0.022</td>
</tr>
<tr>
<td>HH size</td>
<td>1.87</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Number of children &lt;12</td>
<td>-2.10</td>
<td>0.013</td>
</tr>
<tr>
<td>Own home</td>
<td>-9.02</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Financial condition</td>
<td>16.9</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Have car</td>
<td>-5.66</td>
<td>0.002</td>
</tr>
<tr>
<td>Rural</td>
<td>1.08</td>
<td>0.406</td>
</tr>
<tr>
<td>Food availability</td>
<td>0.03</td>
<td>0.368</td>
</tr>
<tr>
<td>Black</td>
<td>-1.38</td>
<td>0.524</td>
</tr>
<tr>
<td>Hispanic</td>
<td>2.27</td>
<td>0.205</td>
</tr>
<tr>
<td>Other race</td>
<td>0.88</td>
<td>0.670</td>
</tr>
<tr>
<td>&lt;High school education</td>
<td>8.75</td>
<td>&lt;0.001</td>
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</table>

<table>
<thead>
<tr>
<th>Neighborhood factors</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Median HH income</td>
<td>0.02</td>
<td>0.336</td>
</tr>
<tr>
<td>Percent homeowners</td>
<td>-3.44</td>
<td>0.214</td>
</tr>
<tr>
<td>Percent Black</td>
<td>4.11</td>
<td>0.206</td>
</tr>
<tr>
<td>Percent with &gt;HS education</td>
<td>1.09</td>
<td>0.009</td>
</tr>
<tr>
<td>Percent single-headed HHs</td>
<td>2.22</td>
<td>0.309</td>
</tr>
<tr>
<td>Food affordability</td>
<td>-1.77</td>
<td>0.143</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model statistics</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rho (direction of spatial autocorrelation)</td>
<td>-0.01</td>
<td>--</td>
</tr>
<tr>
<td>LR Test</td>
<td>0.09</td>
<td>--</td>
</tr>
<tr>
<td>LR P-value (significance of model)</td>
<td>0.770</td>
<td>--</td>
</tr>
</tbody>
</table>
### TABLE 2.4: SPATIAL ERROR MODEL OF COMPOSITIONAL AND CONTEXTUAL EFFECTS ON FOOD INSECURITY (N=3,878)

<table>
<thead>
<tr>
<th>Household factors</th>
<th>Estimate</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>HH income</td>
<td>-0.36</td>
<td>0.025</td>
</tr>
<tr>
<td>HH size</td>
<td>1.87</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Number of children &lt;12</td>
<td>-2.07</td>
<td>0.018</td>
</tr>
<tr>
<td>Own home</td>
<td>-9.02</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Financial condition</td>
<td>16.8</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Have car</td>
<td>-5.64</td>
<td>0.002</td>
</tr>
<tr>
<td>Rural</td>
<td>1.13</td>
<td>0.553</td>
</tr>
<tr>
<td>Food availability</td>
<td>0.03</td>
<td>0.753</td>
</tr>
<tr>
<td>Black</td>
<td>-1.34</td>
<td>0.541</td>
</tr>
<tr>
<td>Hispanic</td>
<td>2.25</td>
<td>0.216</td>
</tr>
<tr>
<td>Other race</td>
<td>0.86</td>
<td>0.720</td>
</tr>
<tr>
<td>&lt;High school education</td>
<td>8.77</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

### Neighborhood factors

<table>
<thead>
<tr>
<th></th>
<th>Estimate</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median HH income</td>
<td>0.03</td>
<td>0.386</td>
</tr>
<tr>
<td>Percent homeowners</td>
<td>-3.48</td>
<td>0.310</td>
</tr>
<tr>
<td>Percent Black</td>
<td>3.93</td>
<td>0.352</td>
</tr>
<tr>
<td>Percent with &gt;HS education</td>
<td>1.07</td>
<td>0.010</td>
</tr>
<tr>
<td>Percent single-headed HHs</td>
<td>2.25</td>
<td>0.440</td>
</tr>
<tr>
<td>Food affordability</td>
<td>-1.77</td>
<td>0.149</td>
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### Model statistics

<table>
<thead>
<tr>
<th></th>
<th>Estimate</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lambda</td>
<td>-0.03</td>
<td>--</td>
</tr>
<tr>
<td>P-value (significance of model)</td>
<td>0.037</td>
<td>--</td>
</tr>
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</table>
TABLE 2.5: GEOGRAPHICALLY-WEIGHTED REGRESSION OF COMPOSITIONAL AND CONTEXTUAL EFFECTS ON FOOD INSECURITY (N=3,878)

<table>
<thead>
<tr>
<th></th>
<th>Min. effect</th>
<th>Med. effect</th>
<th>Max. effect</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Household factors</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HH income</td>
<td>-0.43</td>
<td>-0.35</td>
<td>-0.32</td>
</tr>
<tr>
<td>HH size</td>
<td>1.68</td>
<td>1.82</td>
<td>2.06</td>
</tr>
<tr>
<td>Number of children &lt;12</td>
<td>-2.63</td>
<td>-1.80</td>
<td>-1.72</td>
</tr>
<tr>
<td>Own home</td>
<td>-9.50</td>
<td>-9.25</td>
<td>-8.13</td>
</tr>
<tr>
<td>Financial condition</td>
<td>16.8</td>
<td>16.9</td>
<td>17.1</td>
</tr>
<tr>
<td>Have car</td>
<td>-6.32</td>
<td>-5.09</td>
<td>-5.04</td>
</tr>
<tr>
<td>Rural</td>
<td>0.49</td>
<td>1.41</td>
<td>1.64</td>
</tr>
<tr>
<td>Food availability</td>
<td>&lt;0.01</td>
<td>0.01</td>
<td>0.02</td>
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<td>Black</td>
<td>-2.55</td>
<td>-1.72</td>
<td>-1.18</td>
</tr>
<tr>
<td>Hispanic</td>
<td>0.28</td>
<td>3.08</td>
<td>4.00</td>
</tr>
<tr>
<td>Other race</td>
<td>0.01</td>
<td>0.55</td>
<td>1.26</td>
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<tr>
<td>&lt;High school education</td>
<td>8.24</td>
<td>8.57</td>
<td>9.07</td>
</tr>
<tr>
<td><strong>Neighborhood factors</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median HH income</td>
<td>-0.03</td>
<td>0.07</td>
<td>0.08</td>
</tr>
<tr>
<td>Percent homeowners</td>
<td>-5.29</td>
<td>-4.30</td>
<td>-0.08</td>
</tr>
<tr>
<td>Percent Black</td>
<td>3.81</td>
<td>5.37</td>
<td>7.16</td>
</tr>
<tr>
<td>Percent with &gt;HS education</td>
<td>7.98</td>
<td>12.8</td>
<td>14.2</td>
</tr>
<tr>
<td>Percent single-headed HHs</td>
<td>1.94</td>
<td>2.39</td>
<td>2.84</td>
</tr>
<tr>
<td>Food affordability</td>
<td>-3.93</td>
<td>-2.84</td>
<td>-0.05</td>
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</table>
FIGURE 2.1: SPATIAL VARIATION IN THE EFFECT OF HISPANIC HEAD OF HOUSEHOLD ON FOOD INSECURITY
FIGURE 2.2: SPATIAL VARIATION IN THE EFFECT OF CAR OWNERSHIP ON FOOD INSECURITY
FIGURE 2.3: GEOGRAPHIC VARIATION IN THE EFFECT OF CAR OWNERSHIP ON FOOD INSECURITY
FIGURE 2.4: SPATIAL VARIATION IN THE EFFECT OF SELF-REPORTED FINANCIAL CONDITION ON FOOD SECURITY
CHAPTER 3: USING GEO-ETHNOGRAPHY TO UNDERSTAND HOW PLACE AND SPACE MATTER IN ISSUES OF FOOD ACCESS

INTRODUCTION

Many scholars have found evidence that low-income and predominately minority neighborhoods contain fewer supermarkets, but there is a lack of consensus regarding whether, how, and why this matters to the people who live in those neighborhoods. (Walker et al. 2011). Some scholars posit that the higher prices, limited variety, and lower quality of healthy options in food deserts could restrict residents’ ability to eat a healthy diet (Hendrickson et al. 2006). Indeed, several studies point to higher levels of obesity and higher BMIs in areas that lack large grocery stores and supermarkets (Larson et al. 2009; Morland and Evenson 2008; Schafft et al. 2009). Others, however, find that the presence of small grocery stores can offset some of this risk (Zick et al. 2009), and still more note that there is no relationship between living in a food desert and the prevalence of diabetes, heart disease, and other diet-related concerns (Morland et al. 2006). There is further confusion as to whether increasing access to healthy foods would in fact improve the diets or health of food desert residents. On the one hand, some scholars have found that shopping at supermarkets, rather than the small corner and convenience stores more common in food deserts, is correlated with higher consumption of fruits and vegetables (Morland et al. 2002b; Zenk et al. 2005b). On the other hand, several studies have found no relationship between proximity to supermarkets and consumption of fruits and vegetables (Capsi et al. 2012a; Freedman 2009; Pearson et al. 2005).
One possible explanation for the lack of consensus regarding the relationship between food environments and dietary and health outcomes is that people may not always shop at the stores that are closest to where they live (Cannuscio et al. 2013). A recent large-scale study of 4,826 households in the United States supports this theory, finding that, on average, shoppers travel an additional 1.5 miles to get to their preferred stores (Ver Ploeg et al. 2015). Similarly, in a study of low-income urban WIC recipients, Hillier et al. (2011) found that less than 30% of their participants regularly shopped at their closest store, and not all restricted their shopping to only one store. The authors argue that the presence of certain types of stores or food within a neighborhood was less relevant than the individual reasons that residents have for making food shopping decisions. And in fact, several scholars have recently called for studies that consider the actual shopping behavior and preferences of food desert residents (Cannuscio et al. 2013; Larson et al. 2009; Lytle 2009). Still, while there are many studies on neighborhood food environments, and a few that consider actual shopping behaviors of food desert residents, little research examines people’s shopping behaviors in the context of their interactions with their food environments.

*Interactions with food environments*

Although early studies of food environments focused on the number of food retail stores present in a given neighborhood, more recently, scholars have suggested that food prices, not proximity of stores, may be more important to food desert residents. In a study of five different U.S. neighborhoods with poor food access, Alkon et al. (2013) found that cost was the most commonly cited reason that people gave for choosing where to shop. Other
studies have also found that cost is a primary concern for residents of food-poor environments (Hendrickson et al. 2006; Walker et al. 2011). Hillier et al. (2011) noted that the majority of their respondents were willing to incur greater travel costs and travel farther to reach large chain stores because they felt that these stores had a wider range of available food and better prices than the stores in their neighborhoods. Furthermore, nearly half their participants regularly bought food at multiple stores, and went to specific stores for their WIC purchases and their non-WIC purchases. The authors theorized that this could be due to the fact that WIC vouchers are for specific products, irrespective of their prices, which could eliminate the need to bypass a store on the basis of cost. Dunkley et al. (2004) also found that low-income consumers are extremely motivated by price, but noted that a lack of private vehicles may have forced them to shop at stores that are nearby. However, when they are able, many people prefer to bypass the stores closest to home in order to avoid the inflated prices at convenience and corner stores (Clifton 2004; Dunkley et al. 2004).

These studies all suggest that decisions about where to shop are not driven solely by external factors, but also by individual preferences and motivations. Though many studies have documented the existence of food deserts, few have looked at how living in a food desert affects people’s shopping choices. Caspi et al. (2012a) explain that there are five dimensions of food access: availability, accessibility, affordability, accommodation, and acceptability. They argue that the literature on food environments has primarily addressed food availability and accessibility, but has largely ignored the other three dimensions. Although proximity may be important to people who live in food deserts, so are other considerations, such as the cleanliness, freshness of food, and variety of food choices in
different stores (Krukowski et al. 2013). Large-scale quantitative studies can help generalize struggles of food desert residents, but may fail to link how neighborhood characteristics influence food-buying decisions. If people are limited by the types of food and stores in their neighborhoods, how do they cope with this? If they do not shop near where they live, why not? If there are more factors driving food shopping and eating behaviors than proximity, what are they? With these types of questions in mind, scholars have recently called for multi-level studies that understand macro neighborhood characteristics as the context in which micro individual behaviors unfold (Alkon et al. 2013; Guthman 2011; Larson et al. 2009; Lytle 2009).

Accordingly, some scholars have sought to more closely examine the relationships between food environments and the preferences, perceptions, and behaviors of residents. These are often in-depth case studies, focused on the daily strategies and decisions that real people make about food. Guthman (2011) compiled data from her undergraduate students’ fieldwork and found that food desert residents often expressed a preference for large, chain supermarkets. One student was frustrated to find that local residents were largely uninterested in food from places like the community garden and farmers market where she worked; instead, she repeatedly heard that what community members really wanted was a Safeway supermarket in their neighborhood (Biddle 2005). Whelan et al. (2002) conducted focus groups with food desert residents and found that demographic characteristics of the residents strongly influenced their priorities in choosing stores; for example, while the majority of the participants cited cost as a major motivator, this preference was most distinct for mothers of young children, while elderly participants were more concerned with
transportation challenges. And in New Orleans, Kato (2008) found that low-income residents’ shopping decisions were strongly influenced by cost of food, but also by spatial and temporal limitations, the availability of culturally-appropriate foods, and variety of food. These latter two studies in particular demonstrate why generalized understandings of food deserts may be inadequate.

Personal preferences and perceptions of food may also play an important role. In some places, residents do not consider corner stores to be “real stores,” frustrated with limited options and acutely aware of the relative deprivation of their food environments (Freedman 2009; Freedman and Bell 2009). Poor food quality, a plethora of unhealthy snack foods prominently displayed, and being forced to “hunt for the fruits, for the vegetables” plague some food desert residents (Zenk et al. 2011). In other places, residents may have better access than they realize, but their perceived lack of food access is enough to have a negative effect on their diets (Capsi et al. 2012b). In some areas, African-American food desert residents feel concerned that they might have to sacrifice parts of their culture in order to eat healthily, or face stigma from their peers if they want to eat a more healthful diet (James 2004). At the same time, food environment assessments that fail to consider culturally-specific foods could result in inaccurate price assessments; Odoms-Young et al. (2009) noted that the cost of vegetables more commonly eaten by African-Americans (e.g. collards, okra) is higher than that of vegetables more commonly consumed by white Americans (e.g. carrots, celery). Similarly, failing to account for culturally-specific foods could paint a false picture of the presence or absence of food options in general.
Together, these studies emphasize how the experience of living in any food environment is not uniform among its residents. For this reason, Clarke et al. (2004) and Guy et al. (2004) argue that considering how consumer choice is actually experienced by food desert residents is critical for understanding food access. The authors concluded that shopping choices varied tremendously and were based as much on personal preferences and habits as on the attributes of specific stores. In later surveys, the same participants reported traveling less time to reach supermarkets than they did in earlier surveys; however, the authors did not collect data on the actual distances from participants’ homes to the stores, or on whether participants bypassed their closest stores. A follow-up to Clarke et al. (2004) found that store choice was mediated by several personal and household factors, but did not include geographic data on the participants’ food environment (Kirkup et al. 2004). In-depth case studies provide rich, detailed stories about the challenges of being food insecure, but may fail to link these to the wider built environment or spatial relations at play. In what context are residents making their food buying decisions? If they do not shop at their nearest stores, how much farther are they going? What kinds of stores are they bypassing and what kind do they prefer? To answer these questions, as well as the questions left unanswered by many large-scale quantitative studies, we need research that combines quantitative geographic data on shopping behaviors with qualitative data on their reasons that underlie these choices.

RESEARCH QUESTIONS

A few qualitative studies have asked food desert residents about their perceptions and experiences of their food environments (Alkon et al. 2013; Clifton 2004; Whelan et al. 2002).
A small number of other studies have utilized spatial analyses to look at actual shopping behaviors of food desert residents (Hiller et al. 2011; LeDoux and Vijnovic 2013). No one, however, has integrated these two methods to combine geographic information about the actual stores where residents shop with personal accounts of the reasoning behind such choices. There is some evidence that residents of food poor environments do not shop at their closest stores. Where, then, do they shop—and why? Unlike studies that focus solely on proximity to stores, my project goes beyond indicating the presence and location of stores to incorporate the actual shopping choices of residents of urban and rural areas with low food access, as well as the reasons that they articulate for making these choices. At the same time, this study incorporates an in-depth look at the daily realities of living in a food desert.

The benefit of the mixed-methods approach to these data comes through the way in which the two types of data complement each other. Mapping the food environments of participants provides physical context for residents’ food environments, but it cannot give us an idea of the individual strategies, motivations, or preferences that influence food shopping decisions. At the same time, the qualitative data about why participants choose the stores at which they shop is strengthened by the empirical and visual representation of where those stores are located within the participants’ food environment. This study therefore combines quantitative geographical data with qualitative interview data and contributes to the literature by affording a multi-faceted understanding of the complex challenges at work in food deserts.
DATA AND METHODS

Keeping the importance of place and space in mind, as well as the need to move away from assumptions about proximity, my project utilizes geo-ethnography to illustrate how location and the built environment matter in issues of food access. Geo-ethnography involves overlaying spatial frameworks with the personal, lived experiences of community members (Biffle 2006). In doing so, geo-ethnography recognizes that individuals and their behaviors are shaped by their physical context. Matthews et al. (2005) explain that coupling qualitative data with geographic data, using geographic information systems (GIS) technology, can help “situate” families’ experiences in time and space. Matthews et al. (2005) conducted ethnographic interviews with over 200 low-income families about how their daily activities were affected by the welfare system, as part of a larger project on welfare. The researchers then combined these data with geographic information to visualize the families’ local contexts. For example, they created maps that showed one family’s home and all the places they travel to in a month, such as the hospital and schools, to show how the family utilized neighborhood resources. In another example, the researchers created a map showing a “hypothetical journey” for a low-income mother over the course of one day; this map highlighted her use of public transportation, and how this influenced where she did her grocery shopping (Matthews et al. 2005).

Geo-ethnography has become increasingly popular in the last few years (Jung and Elwood 2009), and there is an exciting variety in the specific methods that various researchers use. Jones and Evans (2012), for example, asked bicycle commuters to wear GPS devices and record audio diaries while biking home. They used these “spatial transcripts” to
learn more about how people were affected by their built environments; for example, people were slightly more likely to speak positively when near a beautiful waterside space. Kwan and Lee (2004) asked participants to keep a diary of their daily activities and travels, and then mapped not only where participants went, but also when they went, to create 3-D “space-time paths” of Portland residents. Among other things, they found that Black participants’ work and non-work activities were more concentrated in the eastern part of the city than other people’s activities, suggesting that racial segregation in the area goes beyond residential segregation. Though very different in subject and specifics, what these and other geo-ethnographies have in common is the combination of qualitative and geographic data in a way that strengthens both.

To date, no one has yet applied a geo-ethnographic method to questions of food access. This is a prime use-case, however, for two main reasons. First, questions of food access are inherently spatial. Even as evidence mounts that people do not always shop at their closest stores (Hillier et al. 2011; Ver Ploeg et al. 2015, food access is still most often defined in terms of geographic proximity to stores. This is, in fact, how the official classification of “food desert” by the USDA is determined (ERS 2000). Further, people still have to travel between their homes and the stores at which they do shop. Second, recent case studies demonstrate that people’s interactions with their food environments are complex; residents decide where to shop based on a variety of preferences and perceptions (Alkon et al. 2013; Guthman 2011; Larson et al. 2009). It is not enough to know whether people shop at their nearest stores. Rather, in order to work toward effective strategies for increasing food access, we also need to know what motivates people’s shopping behaviors.
Data come from the Voices into Action study, an ongoing USDA-funded project about low-income families and food across two rural counties (Smith and Kingston Counties) and one urban neighborhood (East Branson). Mothers and female caregivers with at least one child between the ages of two and eight, and with a self-reported income at or below 200% of the federal poverty line, were recruited for the study. Participants were recruited from faith communities, food pantries, health departments, and neighborhood events; in addition, some eligible participants referred additional participants, for a total sample of 125. The racial and ethnic makeup of the sample mirrored that of the three study areas. In the third year of data collection, throughout 2014 and 2015, the research team conducted follow-up interviews with 109 female caregivers of young children. I worked with the Project Directors to design the shopping questions for this phase of the research and conducted 24 of the interviews. During these follow-up interviews, we asked participants to give the name and location of up to three stores at which they bought food most often. We also asked about the reasons that they chose these stores, as well as about how they shopped for, ate, and prepared food.

We collected participant addresses during the initial in-depth interviews in the first year of the project. We also collected demographic information, including age and race of the primary respondent, household composition, household income, food security status, and whether the household received Supplemental Nutrition Assistance Program (SNAP) benefits or had access to a car. These demographic data can be seen in Table 3.1. The final analytic

1 The names of places, people, and local food stores were replaced with pseudonyms.
2 Demographic data were updated in year three of data collection except for food security status; these data come from 2012, the first year of data collection.
sample was 100 women; nine participants were excluded from the analysis either because their stores could not be located from their descriptions, they no longer lived in the study areas, or they had recently moved (and so where they shopped in the last month could not reasonably be compared to their new home location).

My project overlays geographic information—including the food stores available in participants’ neighborhoods and the actual stores at which they shop—with data from qualitative interviews about participants’ food shopping decisions and preferences. I obtained retail food store data for the three counties from the ReferenceUSA U.S. Businesses Databases; these data were already geocoded. I used Texas A&M Geoservices to geocode the addresses of participants’ home and preferred stores. For quantitative data cleaning and analysis, I used the R Program for Statistical Computing, version 3.2.2, and R packages sp version 1.2-3, rgeos version 0.3-19, and rgdal version 1.1-9. Qualitative transcripts were coded using common themes and analytic categories using NVivo 10 and NVivo 11. I then combined the geographic results of the interviews with the qualitative data about where participants shopped for food and the factors that guided their decisions.

FINDINGS

Most women bypassed their nearest store to reach their preferred option, and everyone preferred to do the bulk of their shopping at large supermarkets rather than small grocery stores or corner stores. Overall, the distances that participants traveled to reach each of their top three stores were negligible; in other words, they traveled about as far for their primary store as they did for their secondary and tertiary stores. Since the average distances traveled compared to the average distances to the nearest stores would therefore be about the
same for all three supermarkets, I conducted the majority of my analyses using only the store at which participants shopped the most. I also considered the list of stores where participants did most of their shopping and found that all of them were large chain supermarkets\(^3\). The majority of second- and third-choice stores were also large supermarkets. In all three study areas, there were many smaller grocery stores, corner stores, and convenience stores closer to participants’ homes than supermarkets. In light of the women’s clear preference for large supermarkets, however, I also focused primarily on the availability of supermarkets in the three areas. This decision was also based on previous research that suggests that individuals, particularly those who are low-income, prefer to shop at large supermarkets rather than at smaller stores (Biddle 2005, Guthman 2011).

**How far do people travel to shop for food?**

In order to determine how far the women in this study traveled to shop for food, I first calculated the distance between each participant’s home and the nearest supermarket. I then calculated the distance\(^4\) to each participant’s preferred store, the one in which she did most of her food shopping in the previous month. Not surprisingly, the average distance to the nearest supermarket was the smallest in East Branson, at 1.2 miles, while the average distances in the Smith and Kingston Counties were 2.9 miles and 2.6 miles\(^5\), respectively. Women in all three areas routinely bypassed these closest options, however, to reach their preferred

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\(^3\) A store is a supermarket as opposed to a smaller grocery store if it has more than $2 million per year in sales (CDFI 2011).

\(^4\) Distances between homes and stores are straight-line distances.

\(^5\) The USDA defines a food desert as a low-income census tract where at least 33% of residents are more than 1-mile from a supermarket or large grocery store in urban areas, or more than 10-miles from a supermarket or large grocery store in rural areas (ERS 2000). An urban area is defined as an area with more than 2,500 people (ERS 2000).
supermarkets. Figure 3.1 compares the average distance to the nearest store and to the preferred store for all participants, as well as divided by region.

As shown in Figure 3.1, shoppers often traveled much farther than the nearest supermarket to reach their preferred store. In fact, they often traveled more than twice as far as their nearest supermarket. A two-sample t-test demonstrated that these differences in means were highly statistically significant for all three counties, as shown in Table 3.2.

The distances that people were willing to travel past their nearest supermarkets are especially salient when visualized geographically. Figures 3.2-3.4 show the participants in each county, with lines connecting their homes to their nearest store and the store at which they shop at the most. I removed all backgrounds from these maps to mask the locations. I also jittered the coordinates so that people who lived very close to each other would not overlap, and to further prevent identification of any participants.

In all three counties, we can see that the lines from the women’s homes to their preferred stores are noticeably longer than to their nearest stores. We can also see how some participants in the rural counties, particularly Kingston County, are skewing the average distance that women traveled to shop for food by traveling much farther to get to their first choice stores. Though these figures give us a nice visual for how far people travel, they are removed from neighborhood context; each of the women’s home and store coordinates have been moved a random distance and direction from their original locations, so these figures do not give us a good idea of scale. To bring in more neighborhood context, I also created zeroed home location maps for each of the three counties, shown in Figures 3.5-3.7. For these maps, imagine taking every triangle in Figure 3.2 and “stacking” them on top of each
other as if every person’s home were in the exact same location; that location is the center of Figure 3.5, and so on for the other two counties. This allowed me to correctly scale the maps to show how far outside of their neighborhoods the women traveled to shop.

In Figure 3.5, a dis-identified map of East Branson, we can see that while all households are within two miles of a supermarket, the majority are more than one mile from the nearest supermarket. Only 28% of women in the urban area (n=9) shop at the nearest available supermarket; the rest bypassed their nearest options—traveling twice as far on average—to reach their first choice store. Figures 3.6 and 3.7 demonstrates a similar pattern for both of the rural counties, although stores were farther apart in general, which makes sense given that they are both more spread out and less densely developed than East Branson.

Here, not all participants were within two miles of a supermarket; some lived as much as six miles from the closest supermarket. These maps also shows that there are fewer supermarkets available overall in Smith and Kingston Counties. Like women in East Branson, however, we can see that women in these counties rarely shopped at the closest store. In Smith County, 36% (n=13) of women shopped at the nearest supermarket, while the rest traveled farther. In Kingston County, the number is even fewer; just 19% of women (n=6) chose to shop at their nearest supermarket.

Looking at which supermarkets were closest to people’s homes, and which ones they preferred, helped give me some idea of the women’s motivations for bypassing their nearest stores. Figure 3.8 is a list of the specific store closest to each person’s home in each of the three areas.
In total, there were nine different stores on the list, including two higher-end specialty stores (i.e. Whole Foods and Fresh Market) and one smaller, regional supermarket (i.e. Stop ‘N Buy Foods). For the vast majority of participants in the study (71%), the closest supermarket option was a Food Lion. Interestingly, with only one exception, Food Lion was the nearest store for every participant in East Branson.

Figure 3.9 is a list of the stores at which participants preferred to shop. While Food Lion was the most popular choice overall, only 38% of participants listed it as their preferred store, despite the fact that Food Lion was the closest store for 71% of participants. A fifth of the women (21%) preferred to shop at Walmart, despite the fact that this was not the closest option for anyone. The list of preferred stores is also much more varied than the list of closest available stores; in addition to a greater variety of traditional supermarkets, it also includes membership bulk stores (Sam’s Club and BJ’s), a dollar store, a flea market that specializes in produce, and specialty Hispanic stores that offer items less often found at traditional supermarkets (i.e. International Market and World Food Plaza). These two figures show that women overwhelmingly prefer to shop at supermarkets than smaller stores, but also that the preference is more specific than “a supermarket.” Instead, women preferred to shop at certain stores. This suggests that, even when a large supermarket is available in someone’s food environment, they still may not want to shop there.

The above table and figures help to develop a picture of the study participants’ food environments, providing a geographic context in which they make food shopping decisions. The data demonstrate that we cannot assume that people will shop at the nearest available food store, or even the nearest available supermarket. My findings challenge previous
research that defines food access solely in terms of physical proximity to food stores. It also points to a need for more in-depth research into how people decide where to shop for food. However, these survey and geographic data cannot explain why so many of the women in the study chose to bypass their closest supermarkets, or why they prefer certain stores over others (e.g. Walmart versus Food Lion). These types of questions are better answered through in-depth interviews, as discussed in the next section.

How do people decide where to shop?

During the interviews, we asked women to think of how they decide where to shop for food and to name what factors most influence that decision. We also asked which stores they shopped at most, as well as what they liked and disliked about each of the stores they named. In addition, we asked about their shopping behaviors, for example what items they bought at each store, how long they took to shop, and how often they went shopping. Women shared several factors that influenced their decisions to choose certain stores over others. An overwhelming majority listed price as their most important factor. In addition, women were motivated by the quality and variety of food available. Many women also made decisions about where to shop based on their access to transportation or the cost of traveling to given stores. Finally, some women said that they considered factors of ease or convenience, such as friendly customer service, cleanliness, or location.

Food prices

Women primarily chose where to shop based on the cost of food. In particular, women talked about getting the largest quantity of food for the least amount of money. This
held true across all three study areas. We asked all the women the following question:

“All, when you’re deciding where to shop for food, what are the most important things that affect your decision?” Nicole, a Black mother of two who lived in Smith County, said, “Cheap prices, yes—prices and quantity, where you can get more for your money.”

Annabelle, a White mother of three in Kingston County, similarly said that what mattered most was “How much I can get for the cheapest price.” Women in East Branson often felt the same way, as with Trinity, a Black mother of three, who said, “Prices affect my decision, and the quantity of the food affects it. I try to get a large amount for a little price.” Of 100 women included in the analysis, 72 said that price or cost most affected their decision of where to shop for food, and an additional 20 said that price was tied for the most important factor.

Many women shopped at multiple stores to buy specific items at places that had better prices. When asked how she decides where to shop, Alberta, a Black mother of three in Smith County, said, “I kind of price compare…[Food Lion] cheese is always on sale better than IGA’s. IGA cheese is like $2.50 or 2/$5, and Food Lion’s is 3/$5, so you get more.”

Illana, a Black mother of one living in Smith County, explained that she will even shop at different locations of the same store when there are good sales going on, because the closer location will run out of the sale items more quickly. She said, “Most of the time when I know Food Lion got a sale, I’ll go to the [farther location] because I know they have more of…the products in the store. When you go to [the closer location] and you get it on sale, it’s gone.”

For both Alberta and Illana, the lower prices they found on foods by going to multiple stores outweighed the time and additional travel costs needed to scope out different stores and locations.
Some women compared prices at multiple stores in order to stretch or manage their SNAP benefits. Sandy, a Black mother of two in East Branson, explained:

I’m on a budget, so I go think about the prices and where to go, so I normally stick to what sells the cheapest stuff. So lately [it’s] been like, as far as my meats I go to IGA because they’re cheap and a reasonable price. Maybe my boxes [of snacks] I go to Walmart because they’re a pretty good deal and more variety, and I just do it like that…Even with the food stamps, it’s still budgeting.

For Sandy, budgeting in this way was especially important because her SNAP benefits had been reduced by about $30 a month, which she said was due to nationwide cuts in 2013.

Samantha, a White mom of three living in Kingston County, similarly found shopping at multiple stores to be necessary for managing her SNAP benefits:

Sometimes I go to several stores to get whatever’s cheaper. I hate doing that, but sometimes I do have to…because I’m on a budget and every month I go—I’m out of food every month before I get my food stamps. So pretty much I have to do whatever I gotta to do save on groceries.

Samantha disliked going to multiple stores because of the extra driving, but felt she had no choice but to do so in order to make ends meet.

This was a common strategy, and the majority of the women regularly shopped at multiple stores. The desire for low prices often outweighed convenience, even when women just needed to pick up an item or two, for example if they forgot an ingredient for a specific meal. When asked where they went to in these circumstances, nearly half still named their first choice store rather than a closer or more convenient option. Adriana, a Latina mother of
three who lived in East Branson, would forgo buying a forgotten item at a less-preferred store even if she were already there. She said, “Sometimes I forget the tortillas and I remember when I see them [at Walmart], but, well, I don’t buy them because [at World Food Plaza] I buy two packages for $5, and [at Walmart] they’re always $3.39, so it doesn’t suit me.” Adriana preferred to wait until she could go back to her first choice store in order to get the lower price. This also affected women’s tendency to utilize nearby corner or convenience stores, much more abundant than supermarkets in all three areas, though especially in East Branson.

In fact, less than 10% of women named a corner or convenience store as the place where they shopped second- or third-most often. In fact, while some talked about stopping in corner or convenience stores occasionally, usually to buy a snack, drink, or tobacco products, most women said they avoided them altogether, mainly due to their high prices. When asked if she ever shopped at corner or convenience stores, for example, Sandy reiterated her budgeting strategy. “No, they’re too high around here,” she said. “I’m a budget person. Yeah, I am on a budget now and I can’t—yeah, they’re very pricey.” Though this sentiment was more common in East Branson, which had an abundance of such stores, women in rural areas also felt the cost of food at corner and convenience stores was unattainably high. Tara, a White mother of two living in Kingston County, called the prices at the corner stores near her house “outrageous.” “Like, they charge $4.00 for a bottle of ketchup,” she said. “Mm-mm, I can’t do it…a whole lot more pricey.” Similarly, Kathy, a White mother of two who also lived in Kingston County, said that she never shopped at corner stores because they were too expensive. She said, “They really want to charge money for things, so, no.”
The women who lived in East Branson were the most likely to shop at corner or convenience stores, to occasionally pick up an item they forgot or ran out of before they could get back to a supermarket. However, even so, these women still lamented the high prices of corner stores. Leanne, a biracial mother of three in East Branson, didn’t buy food at corner stores, but sometimes went to a one within a short walk of her home for household items like dish soap or baby wipes. She said that the corner store, though, would only sell “the cheap version, and they sell for double the price.” Ivette, a Latina mother of two who also lived in East Branson, similarly ran to a nearby corner store if she ran out of diapers or a staple item, but said she only did that if she had to. She further explained, “They suck…because they’re too high, like a gallon of milk at the corner store is $7.00.” In Ivette’s view, the high prices were a way in which corner stores took advantage of people who had no choice but to shop there. “They’re really ridiculous,” she said, “and they do that because a lot of people…don’t have rides, you know…so they take advantage. They just take advantage.”

In general, the women perceived prices at corner and convenience stores in their neighborhoods to be unattainably high. And in fact, there are several studies which find that food prices in low-income neighborhoods are significantly higher than in other areas (Alwitt and Donley 1997; Chung and Myers 1999; Bell and Burlin 1993; Hill 2002). There is also a substantial literature on predatory businesses, such as payday lenders and check cashing services, which often target the poor, who often have limited options because there are fewer banks in their neighborhoods or because they are unable to maintain savings accounts or get credit (Graves 2003; Mehlum et al. 2003). Some scholars have drawn a connection between high prices at small food stores in low-income neighborhoods and predatory business
practices, supporting Ivette’s theory that corner stores in her neighborhood “take advantage” of people without other options through price gouging (Alwitt and Donley 1997; Hill 2002). Largely in part due to these high prices, women in the study overall did not consider corner and convenience stores to be viable options for regular grocery shopping. While they would occasionally stop in for an item or two, they mostly avoided these stores because of high prices. Thus, while there were technically many food stores close to participants’ homes, they had little to no bearing on how or where women shopped for food overall.

*Quality and freshness*

Though price was the most important factor to women, they also preferred to shop at stores that they felt had fresher or better quality food. Though Illana did go to multiple stores to find sale prices, as mentioned above, she said that her primary concern in choosing a store was “the quality of the food. If it don’t look fresh, I ain’t buying it.” Mandy, a White mom of two who lived in Smith County, described how she not only got more meat for her money at IGA, but also that their selection was fresher than at the Walmart she also shopped at sometimes. “I don’t like to buy my meats from [Walmart Express] because all of their stuff is prewrapped and shipped in,” she said. “You don’t have no meat cutter at the stores…I like someplace that I know I can meats that are more fresh…if I want something cut.”

Quality and freshness were especially important to the Latina immigrants in our study. They often talked about a difference in the freshness of foods available in the United States compared to their countries of origin. Elsa, an immigrant Latina mother of four who lived in Kingston County, said that she bought her produce “at the Mexican store, because
they are cheaper and fresher.” In contrast, she felt that the produce at Walmart was not fresh. “For example,” she said, “tomatoes are not red…they are small and they are not red.” She described cutting green beans and onions that she would buy in Mexico and “water would pour out from them, they were that fresh,” but here in the U.S., “they are absolutely dry.” Flavia, an immigrant Latina mother of three who lived in East Branson, also felt strongly about the importance of quality. Flavia bought her nonperishable foods wherever she could find them cheapest, but bought foods that could go bad, like produce and meats, at a Hispanic supermarket. When asked how she made this decision, Flavia said:

Well, the decision always relies on quality…Because where I go, I like to go there because I see things are still fresh…I don’t see things that are cut up, that have been there a long time…And that’s the only difference I have, that International Market I go to get fresh food, but at other stores I know I can get things cheaper.

Like Elsa, Flavia was from Mexico, and believed that the foods she bought there was fresher and “were much yummier, with more flavor.” This was a common theme among immigrant Latina women. While many U.S.-born women in the study also valued freshness and quality, this was especially true among immigrants, in part because they considered food to be fresher outside of the U.S.

**Variety of foods available**

Many women also preferred stores that offered a wide variety of food items. Beth, a White mother of two in Smith County, talked about how she balanced variety and quality in deciding where to buy certain items:
Walmart has…more of a variety of things, so if there’s something I’m looking for that’s more specific, Walmart might have it where Food Lion wouldn’t. But Food Lion has way better produce than Walmart does. Food Lion has what seems like better quality meat, [but] they don’t offer the full variety.

Beth also recently found out she was gluten intolerant, and appreciated that Walmart had a larger selection of gluten-free items than Food Lion. Edna, a Black mother of one in East Branson, also valued variety in choosing where to shop. She sometimes shopped at a Food Lion within walking distance of her home if she needed to pick up a few items, but preferred to go to a farther store. “They don’t have a variety of things,” she said of the nearby Food Lion. “It’s a basic grocery store, but there’s a lot of things that I like that they don’t have.”

While it was not as important as price or quality, many moms agreed that having a large variety of options was preferable and had some influence over their decisions of where to shop.

One specific type of variety, the availability of culturally-specific foods, was important for immigrant Latina women in particular. As mentioned above, the interviews analyzed in this study were follow-ups to earlier interviews conducted in 2012 and 2013. During the first round of interviews, many of the Latina immigrants said that they regularly shopped at Hispanic supermarkets with a wide variety of culturally-specific foods. Therefore, I expected to find that these women would name Hispanic supermarkets in the list of places at which they shop at the most. To my surprise, however, most Latina women kept their shopping at such stores to a minimum due to high prices. In the previous section, Flavia talked about buying her produce and meats at a Hispanic supermarket, but admitted that they
cost more; she valued the freshness and quality more highly in choosing to shop there. Other women, however, said that they were generally able to find the culturally-specific foods they wanted at American supermarkets, and often at a lower cost. Angie, an immigrant Latina mother of two living in East Branson, was perplexed by this. She said, “The American [stores] offer Mexican products cheaper than a Mexican store…That’s what I don’t understand!…that’s why you go more to American stores, because it’s a little cheaper than the Mexican stores.”

Cecilia, an immigrant Latina mother of four living in Smith County, said that she could find the Hispanic products she wanted for less money at both Food Lion and Walmart compared to a Hispanic supermarket. And while Felicia, an immigrant Latina mom of four in Kingston County, bought a few items at an international store, she said, “I don’t buy many things at the Mexican store because things are much more expensive there. So, I only try to buy cheese, cream, and I don’t go there every week, maybe once a month.” Like Felicia, most Latina immigrant women we interviewed also bought a handful of specific items at an international store, but reserved the bulk of their grocery shopping for a large American supermarket. The available variety of culturally-specific items thus did turn out to be important for these participants, but not as much as price. It is also important to note how American supermarkets like Food Lion and Walmart were clearly taking some steps to meet the demand for Hispanic products from consumers like those interviewed here.
Access to transportation was another factor that strongly influenced where women shopped for food. While 85% (n=57) of the rural women in the study had access to a car, only 55% (n=17) of the urban women did. Quantitatively, having a car did not have a big effect on where people shopped—there was no significant difference in how far people with cars traveled to reach their preferred stores compared to people without cars, on average (not shown). Qualitatively, however, women talked about how a lack of transportation sometimes prevented them from shopping at their preferred stores, especially in East Branson. Ivette, who spoke above about having to get expensive items at corner stores, said she strongly disliked shopping at Food Lion. “They’re way too high for their name brands, and their knock-offs are high too, and they’re just disgusting,” she said. “If Walmart and Food Lion was standing next to each other, I would never go in Food Lion, never, never.” Despite this deep aversion to Food Lion, she shopped there when she couldn’t find a ride to Walmart because it was within walking distance of her home. Leanne also shopped at Food Lion, though she preferred Kroger. After the Kroger near her house went out of business in 2012, Leanne switched to Food Lion. She said she would have liked to go to a Kroger in a neighboring city, but that she was unable to do so without a car. “I can’t make it out there,” she explained.

For other women, not having a car restricted their ability to compare prices at multiple stores. Nadine was a Black mother of one, who also cared for two nieces, living in East Branson. When asked how her shopping would be different if she had a car, she said, “Oh Lord, I’d be everywhere…at a lot of different other stores seeing what the cheapest
prices is.” Likewise, Keisha, a Black mother of two in East Branson, said that if she had a car she “would go to certain stores for certain items, or like I said go to Curly’s [a local grocery store] for my meats. I probably would go to Walmart for certain, like for snacks, or Sam’s Club for snacks, and Food Lion for my sides.” Given how important this strategy of shopping at multiple stores was for so many participants, it seems likely that being unable to do so could represent a significant disadvantage for some women.

Women without cars also had to find alternative transportation to shop for food, which presented additional challenges. For example, Chaniqua, a Black mother of one who lived in East Branson, said she couldn’t buy as much food as she wanted when she got a ride to the store from a friend. When asked what would change about her shopping if she had her own car, she said:

[I’d] be able to get more food. I wouldn’t be limited by space in their vehicle. So if I had my own car, I would be able to get everything that I need…And then I be, like, on a timeframe. She only gives me an hour to go to two stores. And it’s just an inconvenience because I’m not able to get…everything that I need.”

In addition, Chaniqua shopped at a Walmart near her friend’s house, though she preferred the location closer to her house. When asked why, she said, “Because that’s where my ride takes me.” In this example, Chaniqua’s need to find alternative transportation both limited her shopping behaviors and resulted in her traveling further outside of her own food environment.

Trinity, who spoke above about how important low prices were to her in choosing where to shop, had to shop at more expensive stores because she did not have a car. “I have
to wait on days when [my ride] wants to go food shopping,” she said, “And so that’s what force me to walk to the [corner] store to get a pack of meat or something sometimes.” Annie, a Black mother of one in East Branson, also shopped at more expensive stores because she could not afford to travel to a farther, less expensive option. Annie shopped at a nearby Food Lion that she considered to be “high as the devil” in terms of prices “because it’s closer…if I have to…catch the bus to the grocery store and catch a taxi back, it’s only like $5.” Some women, including Annie, also talked about buying gas or food for their friends in exchange for a ride to the store. She said:

> When you go…somebody say, what you can give them, or you know I might get them a meat or something at the grocery store, you know, for taking me to the store. But some people really take advantage of it—use you, you understand what I’m saying—and spend way more than what you normally expect…My stuff has to last me for a month…and I can’t afford to just give stuff.

Thus, there were both financial and personal costs associated with finding alternative transportation to store. Based on this, I was surprised to find that women without cars did not shop at significantly closer stores than those with cars, overall. This is likely due in part to the fact that the women without cars ended up shopping wherever their rides preferred, regardless of distance from their own homes. It also suggests, however, that other preferences—prices, quality, and variety—outweighed the potential convenience of nearby stores. This was especially true in East Branson, where the closest stores were almost exclusively small corner stores, with fewer items and higher prices than supermarkets.
Travel costs

Women who had their own cars also faced transportation challenges. Many carefully planned or limited their shopping trips to avoid wasting gas, for example. This was especially common in the two rural counties, where people had to travel farther on average to reach a supermarket. Pricilla, a White mother of two who lived in Kingston County, talked about the benefit and downside to owning a car. “[Having a car] gives me more options,” she said, “but it also makes me worry about the gas.” Lisa, a rural White mother of two who also lived in Kingston County, similarly worried about spending money on gas. She said, “My vehicle drinks gas—it loves gas…I go do my shopping, at least try, to do everything one time, once a month go on that side of town.” If she needed anything else later in the month, she went on a Sunday after church, to a store close to church, to avoid a lot of additional driving. Though rural women were the most likely to be concerned about gas money, participants in the urban neighborhood talked about this, as well. Bethany, a Black mother of one in East Branson, said shopped at Walmart because it was relatively close by, despite the fact that she did not like anything else about the store. She disliked the long lines, customer service, and poor availability of food, but still shopped there regularly. When asked why, she explained, “Because if it’s closer to you, you don’t have to spend as much money in gas.”

Even women who did have cars sometimes ended up shopping at more expensive, closer stores to avoid paying the extra gas to travel to cheaper, farther stores. Miranda, a White mother of two living in Smith County, wished that she could go to a local supermarket known for low prices on big meat bundles that was about 25 minutes from her home. “I would love to go there,” she said, “but driving all the way to [other town], it just isn’t an
option. Then there’s IGA, they always have amazing deals, but they’re in [other town] as well.” Likewise, Ebony, a Black mother of three in East Branson, preferred to shop at Walmart because of the lower prices, but actually shopped at Food Lion most often. “I just go to Food Lion ‘cause that’s there across the street,” she explained. “Now if Walmart was across the street, girl, I’d be in there every day.” Ultimately, for women with and without cars, the cost of transportation heavily influenced people’s decisions about how far to travel for food.

Other factors

Price, quality, variety, and transportation were all major factors that people took into consideration when deciding where to shop. There were, however, a variety of other reasons that women preferred certain stores over others. For example, Dorcetta, a Black resident caring for two grandsons in East Branson, had limited mobility due to a disability. She said that she bypassed her nearest supermarket in part because they didn’t have motorized carts available and “the store’s big, I can’t—some people like me…they can’t just walk that whole store and see what they got.” A few women talked about how the area around a supermarket would also affect their decision, as well. For example, Bethany lived near one store that she felt was “hood,” so she was willing to travel a little farther to avoid it. “I tend to stay away from those areas,” she said. “I don’t want to put me or my children in harm’s way.” As mentioned above, Bethany made some efforts to conserve gas, but she was still willing to spend a little more to avoid what she felt was an unsafe area. Other women felt the same way about the store and area Bethany referred to. Emmy, a Black mother of one from East
Branson, said, “It’s not in the best neighborhood,” while Ebony said that she was “scared to go that way.” In fact, the store was less than a block away from a fatal police shooting that occurred several months later.

Several people also talked about things that make shopping at certain stores more enjoyable, like an intuitive layout, ease of using SNAP benefits, or the helpfulness of customer service. Another example is cleanliness; Bridgette, a White grandmother caring for her grandson in Kingston County, said that a store she shops at “has to be clean. It has to smell clean. Now, I’ve been in stores that, as soon as you walk in, it smells like dirty mop water. I mean…that just turns me off right away.” These ancillary factors can all make a shopping trip more pleasant or easier. Women still took them into consideration, even though they were not the most important factors in deciding where to shop.

Finally, a few women did say that they appreciated the convenience of going to closer stores. Emmy, for example, liked to shop at the supermarket closest to her daughter’s school. Daniella, a Black mother of one living in East Branson, said that “the distance of the grocery store” was important to her, aside from prices. In Kingston County, Lisa said that she sometimes decides where to shop based on location; for example, she said that she will occasionally shop at a nearby Food Lion “because it’s right down the road,” but usually avoids it because of their high prices. Overall, very few women said that proximity was an important factor to them in deciding where to shop. This further challenges literature that narrowly defines food access only in terms of proximity. Instead, women were far more motivated by other factors, like price and quality, and were willing to forgo the convenience of location.
DISCUSSION AND CONCLUSIONS

Research on food access has proliferated in the past several years. Though debates within the literature continue, an increasing number of scholars are rejecting overly-general definitions of food access. Instead, more studies are considering the individual experiences of the people who live in areas with poor food access. Some of these are qualitative case studies about people’s perceptions of their food environments (e.g. Alkon et al. 2013; Whelan et al. 2002), while others make use of spatial data to learn more about where people actually shop (e.g. LeDoux and Vijnovic 2013). Questions of food access, however, are especially well addressed by combining both spatial and ethnographic data, as I have done here.

The geographic data presented here paint a clear picture of where the women in this study chose to shop for food. Women strongly preferred large chain supermarkets over the smaller grocery stores and corner stores that were closer to their homes. This supports other research that finds that low-income residents rarely shop at their closest available stores (Hillier et al. 2011; Ver Ploeg et al. 2015). Unlike previous studies, however, I looked more closely at the list of stores that are nearest to participants and compared this to the list of places at which people prefer to shop. I found that the vast majority of participants also bypassed their closest supermarket, traveling, on average, twice as far to reach their preferred stores. Comparing the list of stores nearest to women’s homes to the list of stores at which they prefer to shop, my findings suggest that this could be due to demand for certain stores, rather than simply any supermarket.
Thus, these maps clearly demonstrate that strategies to increase food access, at least in these three areas, cannot focus solely on increasing physical access to food, or even necessarily to supermarkets. They do not, however, tell us much about why that might be, or about what types of strategies might be effective instead. For example, it was clear that women preferred certain supermarkets over others, but why? In their qualitative interviews, women shared a variety of factors that went into their decisions about where to shop for food. By far, the most common and most important reason was price; almost all of the women interviewed cited price as the most or one of the most important factors in their decision. Women did not want to shop at their closest stores, which were mostly small grocery and corner stores, largely because they considered them to be too expensive. Raja et al. (2008) posit that food environments without supermarkets should not necessarily be considered food deserts, if they smaller stores available. My findings, however, clearly demonstrate that residents do not like to shop for food at these stores because of high prices and limited variety. In fact, fewer than 10% of the women said they regularly shopped at these types of stores; those who did typically went there as a last resort or to buy the occasional snack or drink. Thus, my study also supports findings that that low-income residents do not consider corner and convenience stores to be “real” stores that offer the types of foods that they want to buy (Freedman 2009; Freedman and Bell 2009).

In addition to shopping around to find lower prices on certain items, women also highly valued the quality and freshness of available food, especially produce and meats, and would visit multiple stores for this reason, as well. Many participants who happily bought some foods at a given store had no interest in buying other foods there. Further, these
preferences were highly personal and cannot be generalized, even within this population. For example, many women had opposite views as to what constituted good quality or fresh meat. Caspi et al. (2012b) argue that there are several dimensions of food access, one of which is acceptability. These findings demonstrate the importance of this, and why personal preferences of a food environment’s residents should be considered in discussions of food access.

Though I expected to find more differences between the ways in which urban and rural women decided where to shop for food, in fact their motivations were strikingly uniform overall. This is further evidence that an individual’s specific food environment matters less than other factors when trying to understand food access. This also challenges studies that find a relationship between food access and health or behavioral outcomes. Several studies have found that people who live in areas of poor food access are more likely to experience negative health effects such as obesity or higher BMI (Morland and Evenson 2008; Schafft et al. 2009). My findings suggest, however, that this is unlikely to be related specifically to a lack of food stores, or in fact to the spatial environment at all, given that there were few differences in the shopping preferences and behaviors of rural and urban mothers. Instead, this study points to the need for research that looks for other commonalities between people living in food poor environments that may not be tied to geography at all. Based on what I found, it is highly likely that household resources (e.g. income, SNAP benefits, and personal transportation) are the primary underlying contributors to the health disparities sometimes linked to poor food access.
My study also suggests that future research on food environments must consider travel costs and access to transportation. Women with and without cars worried about travel costs, either buying gas for themselves or for people who gave them rides, for example. Thus, my findings highlight that transportation and travel considerations are more complex than simply how far away a store is from someone’s home. Future research on how low-income residents shop for food needs to also consider factors like where people work, worship, or go to school, as well as where supermarkets are not just in relation to residents’ homes, but to each other.

Further, there were many reasons women liked or disliked certain stores that came down to personal preference or a pleasant shopping experience. Whether it was store cleanliness, ease of getting around, or even niceness of store employees, participants sought stores where they felt comfortable. Though women prioritized factors that helped them feed their families, these other factors were also important, and are equally valid. It is reasonable to expect that all individuals, including low-income residents in food poor environments, would prefer this kind of shopping experience, and with these findings I join other scholars who argue that research on food access must consider what residents want, rather than only what academics or other outsiders might think would be best for them (Alkon et al. 2013; Guthman 2011; Larson et al. 2009; Lytle 2009).

This paper also provides an example of how geo-ethnography is a powerful tool for addressing questions of food access. Both sides of the method give us valuable information, but each is strengthened by the other. The quantitative data provide empirical evidence of exactly how much farther people are willing to travel, but not why. The qualitative data
provide insight into people’s perceptions of their food environments, and food shopping preferences, but are largely removed from the spatial context inherent to questions of food access. However, there is plenty of room for additional analyses with these data, and for future research. We specifically asked participants to tell us the names and locations of their preferred stores, for example, but during the course of their interviews, many of the women also talked about other food resources, such as food pantries, nearby farmers, and friends. I could also map these places to learn more about women’s wider strategies for food provisioning. It would also be illustrative to “zoom in” on individual households and map their food environment more thoroughly, including small stores and public transportation routes. Like Matthews et al. (2005) did, I could also create a daily or monthly “snapshot” of women’s activities, including workplaces, schools, places of worship, medical facilities, and any other places they visit. These other places may not seem to be related to food access on the surface. However, the qualitative interviews clearly showed that some women do plan their food shopping trips with these other locations in mind.

Further, other research suggests that residents’ perceptions of their own food access might be as important as the actual built environment (Capsi et al. 2012b; Freedman 2009; Freedman and Bell 2009). I pulled my geographic data from comprehensive, outside sources and situated the study population into it. However, it would also be very interesting and informative to ask participants how they view their own food environments. In future research, I plan to select a representative subset of the women we interviewed and invite them to draw and describe their own maps of their food environments. I will ask women to include things like nearby stores, the stores at which they shop, important landmarks, and
transportation routes, and encourage them to interpret these direction in their own way. This will allow me to compare women’s conceptions of food availability, and of barriers to access, to the actual physical landscape of the food environment. This strategy would also help to determine specific areas of need in different geographic places. For example, if women in Kingston County were largely unaware of a nearby food pantry, the pantry could increase its advertising. Or, if women in East Branson liked a particular store, but had trouble getting to it, the city might consider adding a bus stop there.

While a small number of scholars have mapped the stores where residents of food deserts lived, and a few others have talked to food desert residents about their food shopping preferences, this is the first study to combine the two. In doing so, my project contributes to a greater understanding of the complex ways in which residents interact with their food environments. This study also demonstrates that geo-ethnography is a powerful combination of quantitative and qualitative methods that has clear applications to studies of food access. Further, the variety of other geo-ethnographic projects serves to highlight how the method is limited more by technology and imagination than relevance. My project is therefore just one example of the many ways in which geo-ethnography can and should be used by other sociologists, policymakers, public health practitioners, and others working against unequal access to food.
### TABLE 3.1: SOCIODEMOGRAPHIC CHARACTERISTICS

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>East Branson (n=32)</th>
<th>Smith County (n=36)</th>
<th>Kingston County (n=32)</th>
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<tr>
<td>22-32 years</td>
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<td>53-72 years</td>
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<th>Kingston County (n=32)</th>
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<td>19</td>
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<td>9</td>
</tr>
<tr>
<td>Latina</td>
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<td>4</td>
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<th>Smith County (n=36)</th>
<th>Kingston County (n=32)</th>
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<th>Has car</th>
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<th>Smith County (n=36)</th>
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<th>Food secure (2012)</th>
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<th>Kingston County (n=32)</th>
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<td>19</td>
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**Means of household characteristics**

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<tr>
<th>Household composition</th>
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<tr>
<td>Total number</td>
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<td>Number of children</td>
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<td>Household monthly income</td>
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<td>$1,963</td>
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<td>Per capita HH income</td>
<td>$263</td>
<td>$332</td>
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TABLE 3.2: DIFFERENCE OF MEANS OF DISTANCES TO NEAREST AND PREFERRED SUPERMARKETS

<table>
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<tr>
<th></th>
<th>Distance to Nearest Supermarket (miles)</th>
<th>Distance to Preferred Supermarket (miles)</th>
<th>Difference (miles)</th>
<th>P-value</th>
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<td>5.4</td>
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<tr>
<td>East Branson (n=32)</td>
<td>1.1</td>
<td>2.9</td>
<td>1.8</td>
<td>&lt;0.001***</td>
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<tr>
<td>Smith County (n=36)</td>
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<td>7.3</td>
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<td>&lt;0.001***</td>
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<td>Kingston County (n=32)</td>
<td>2.7</td>
<td>5.8</td>
<td>3.1</td>
<td>0.010**</td>
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FIGURE 3.1: MEAN DISTANCE TO NEAREST SUPERMARKET AND PREFERRED FOOD STORE IN MILES

FIGURE 3.2: DISTANCE TRAVELED TO NEAREST AND PREFERRED SUPERMARKETS IN EAST BRANSON
FIGURE 3.3: DISTANCE TRAVELED TO NEAREST AND PREFERRED SUPERMARKETS IN SMITH COUNTY
FIGURE 3.4: DISTANCE TRAVELED TO NEAREST AND PREFERRED SUPERMARKETS IN KINGSTON COUNTY
FIGURE 3.5: EAST BRANSON NEAREST AND PREFERRED SUPERMARKETLOCATIONS

Key
= Zeroed
triangle = Nearest
home supermarket
location

= Primary
= supermarket

Inner circle
represents a one-
mile radius from
the zeroed home
location; outer
circle represents a
two-mile radius.
FIGURE 3.6: SMITH COUNTY NEAREST AND PREFERRED SUPERMARKET LOCATIONS

Key
- Zeroed location
- Nearest supermarket
- Primary supermarket

Inner circle represents a one-mile radius from the zeroed home location; outer circle represents a two-mile radius.
FIGURE 3.7: KINGSTON COUNTY NEAREST AND PREFERRED SUPERMARKET LOCATIONS

Key
- Zeroed home location
- Nearest supermarket
- Primary supermarket

Inner circle represents a one-mile radius from the zeroed home location; outer circle represents a two-mile radius.
FIGURE 3.8: FREQUENCY OF NEAREST AVAILABLE SUPERMARKETS (N=100)

FIGURE 3.9: FREQUENCY OF FIRST CHOICE SUPERMARKETS (N=100)
CHAPTER 4: CASE-STUDY OF A FOOD COOPERATIVE INITIATIVE IN AN URBAN FOOD DESERT

INTRODUCTION

Food deserts are far more likely to be located in low-income and minority neighborhoods than in wealthier, predominately White neighborhoods. People who live in food deserts must travel farther to reach affordable food, or are constrained by limited variety and high prices of the stores within their own neighborhoods (Dunkley et al. 2004; Morland et al. 2002; Powell et al. 2007; Zenk et al. 2005a). Many people have proposed interventions to address issues of unequal food access, including healthy food retail legislation, non-profit outreach, and grassroots activism. Many of these efforts operate under a banner of food justice, a movement that argues that healthy food is a right of all people. Alternative food models, including the food justice movement, tend to reject the conventional, corporate food system that privileges profit above any other consideration. Instead, food justice advocates promote initiatives such as community farms and gardens, farmers markets, community-supported agriculture (CSA) programs, cooking and nutrition education, and food cooperatives to increase access to healthy foods within underserved communities. In an urban area with limited produce choices, for example, an urban garden or farmers market could theoretically increase access to healthy foods, while also promoting community engagement and supporting local farmers.

Because low-income and predominately minority areas are most likely to face low food access, food justice efforts may be especially meaningful in these typically underserved, disenfranchised communities. However, some scholars contend that the food justice
movement falls short of being truly inclusive and accessible (Alkon 2012; Dupuis and Goodman 2005; Szasz 2009). According to critics, although food justice activists ostensibly promote “good food for all,” food justice discourse is often raced and classed, whether or not this is intentional (Guthman 2008a). Despite a goal of improving food access for low-income, minority populations, the food justice movement may ultimately exclude the very people it aimed to reach, while reinforcing an affluent, White culture that privileges certain foods and ways of eating above others. Several scholars have illustrated the ways in which the alternative food practices often promoted by food justice activists can, perhaps unintentionally, exclude certain people based on race or class. However, the existing critical scholarship on food justice has focused on previously-existing institutions; no one has yet examined these tensions in a developing food justice initiative. This is a valuable area of research, however, because it allows scholars to learn more about how the narratives surrounding race and class are created and negotiated, rather than only how their effects are felt after they are already in place.

*The food justice movement*

The food justice movement grew out of the environmental justice movement, itself a synthesis of the environmental and Civil Rights movements. The environmental justice movement recognizes injustices in distribution of environmental hazards and asserts the right of all people to a clean environment (Alkon and Ageyman 2011). Environmental justice research finds that low-income communities and communities of color are disproportionately exposed to harmful pollution, and receive less protection from environmental laws,
regulations, and policies, than more affluent, White communities (Bullard 1990; Bullard 1996; Cole and Foster 2001). Borrowing this frame, the food justice movement focuses on unequal access to healthy food, as well as on institutional racism within conventional food systems and how it perpetuates these inequalities over time (Alkon and Ageyman 2011). As environmental justice activists assert the right of all people to a clean environment, so food justice activists assert the right of all people to healthy food. Though there are many variations, within the food justice discourse, “healthy food” is often defined as “fresh, nutritious, affordable, culturally-appropriate, and grown locally with care for the well-being of the land, workers, and animals” (Just Food 2010).

Class, race, and food justice

The food justice movement consistently touts a message of social justice and inclusivity with messages such as “healthy food for all” (Brooklyn Food Coalition 2014). Yet critics argue that food justice efforts are often exclusive and fail to achieve their goal of bringing good food to all. Organic and local foods such as those found at farmers markets are a good example of how class can become a barrier to just food. These foods are often more expensive than conventionally-grown produce, which can prevent low-income individuals from buying these foods even if they are available in close proximity (Szasz 2009). While the food is thus technically available to everyone, it is only realistically attainable for those who can afford it. Despite their platform of widespread accessibility, therefore, food justice practices may fail to alleviate economic inequalities. This is partially because, even though they exist outside of the conventional food system, such practices are still market-based and a
part of the overarching capitalist economy (Alkon 2012). Individuals are valued primarily as consumers who are led to believe that they can effect change through their purchasing behaviors, or “vote with their dollars,” even in such a system those with more dollars get more votes (DeLind 2011).

This presents several problems. Individual responses to collective problems are ineffective and distract from real systematic change (Szasz 2009). More specifically, focusing too narrowly on individual responses such as supporting alternative food networks can distract from directly addressing problems with the conventional food system (Harrison 2008). Emphasizing consumer choice and market-based solutions in fact reifies the neoliberal ideal that markets should be the “locus of regulation” (Guthman 2007:457). However just their intentions, local and smaller-scale food networks still work within a capitalist logic that requires profit to survive (McClintock 2014, Tregear 2011). Furthermore, Alkon (2012) argues that because alternative food projects rely on the market, the most successful ones are those that prioritize the issues that are most important to affluent consumers, not marginalized ones. This raises important questions about how proponents of alternative food economies reconcile the tension between profit and concern for food justice. Some studies have examined responses to this tension in existing alternative food initiatives (DuPuis and Goodman 2005; Hinrichs 2000). Within a burgeoning alternative food campaign, however, it is unknown how explicitly members discuss the role of profit in their goals, or how they negotiate the fact that people with more money may exact more control over the direction of the project.
Racially-coded discourses are another barrier to the inclusive vision of the food justice movement. Scholars note how the dominant White culture in America is reproduced and reinforced through alternative food movement practices promoted by food justice activists (Alkon and McCullen 2010, Guthman 2011, Slocum 2007). While the goal of these efforts may be to increase food access for all, the perpetuation of Whiteness within alternative food movement discourse can alienate marginalized groups of people while exacerbating racially-underlined social inequalities. Because White culture is so overwhelmingly dominant in America, it is typically invisible (at least to Whites) and is often merely considered normal or standard. Partially because of this, community food movements like farmers markets and CSAs often do not recognize their inherent White privilege (Slocum 2006). Thus, even if or when people of color are present in food justice settings, Guthman (2011:265) points out that racism is not addressed “merely by attention to distributional outcome,” and argues that these spaces are still constructed as White and may feel exclusionary.

Whiteness pervades the food justice movement in several ways. One is through the connotations of the terms “organic” and “local.” The terms themselves raise questions about who gets to define “local,” and what kind of society the local is representing (DuPuis and Goodman 2005). The answers to these questions are subjective, and Alkon (2012) notes that farmers usually have some choice as to what they grow. For example, in one case study of an urban farmers market in a low-income, Black neighborhood, farmers emphasized providing geographically local produce, but these products rarely overlapped with the produce requested by Black customers (Kato 2013). Kato (2013) observed Black customers asking for
green peppers, celery, and onions, only to be told that those vegetables would only be offered when each was in season. In this case, “what the locals eat may not necessarily be what is grown locally” (Kato 2013:387). When a rural European (White) food culture is privileged, and farmers cater to that preference, Black consumers may feel unwelcome, undercuts the idea of “food for all” that may have been intended in the first place.

Similarly, the food justice movement’s focus on organic farming and alternative agriculture often includes a persistent and pervasive ideal of returning to agrarian roots. (Alkon and McCullen 2011, Guthman 2008a, Slocum 2006). This “White farm imaginary” ignores how people of color have long been forced into doing unpaid or underpaid farm labor, as well as the systematic decline of Black farmers and loss of Black-owned land in the United States since 1920 (Gilbert et al. 2002, Wood and Gilbert 2000). As of the early 2000s, Black-owned land had dropped from 16 million to 2 million acres, with Black farmers representing 1% as opposed to 14% of the nation’s farmers, compared to 1920. This dramatic shrinking cannot be attributed solely to pressures put on small farms by the growing agro-industrial complex; in fact, these pressures have disproportionately affected Black farmers. In their review of the scholarly literature on the subject, Gilbert et al. (2002) attribute the decline to forced land sales, inadequate legal representation, and racial discrimination on the part of lenders and government agencies, including a lack of access to government programs, intentionally delayed loans and financial support, and little accountability or protection in place to prevent these racist actions. Thus, it is unsurprising that non-White individuals may be less enthusiastic about the agrarian past than Whites, and that a romanticized, privileged
ideal of “getting back to our agrarian roots” could be an off-putting or alienating invitation for non-Whites to participate in the alternative food movement.

Finally, this invitation for “all” to participate in the food justice movement is, in fact, yet another way in which such practices can be coded as White. Within the movement, it is taken for granted that locally-focused alternatives are definitely the best strategy for addressing problems with the conventional food system (Guthman 2008a). Lyson (2014) finds that motivation for participating in food justice activism typically centers around three themes: contention with conventional agriculture, conflation of the creation of community through food growing with inclusivity, and a “missionary-like” drive to educate and empower community members to grow their own food. These motivations set up a dichotomy with conventional and alternative food practices on opposite sides, and take as a given that alternative food practices are superior to conventional ones. While there are many valid reasons to support local food systems, privileging them wholly can sideline important issues of food access and community wants and needs. Is food justice a question of increasing access to food, or specifically to healthy food? Who decides what is healthy? Where and how does affordability fit into that definition? What about food that people want to eat, whether or not it is healthy? Little is known about how people developing a new alternative food initiative might engage with these types of questions, or whether they make assumptions about what foods are considered healthy are preferable.
**Resisting barriers to food justice**

Despite these critiques of the alternative food movement, many scholars and activists—both White and non-White—have argued for the need to create more inclusive spaces and practices amidst the affluent, White habitus that saturates such markets. Often efforts to create such inclusive spaces arise in predominately Black, urban neighborhoods with limited food access, many classified as food deserts. Sensitive to potentially alienating low-income, minority residents with raced and classed alternative food options, some individuals have worked to provide farmers markets, mobile markets, produce box sharing, and other alternative food markets that are oriented specifically to non-White consumers (Alkon 2012, Guthman 2008a, White 2010, White 2011).

D-Town farmers, operating within the Detroit Black Community Food Security Network (DBCFSN), are one example. Located within a predominately Black, low-income food desert, D-Town farmers and the DBCFSN challenge the government and market’s abilities to provide food, and aim to provide it for themselves and their own communities (White 2010, White 2011). Embodying the broader food justice movement’s objectives—increasing access to healthy, just food—D-Town farmers resist Whitened interpretations of their mission and strive to appeal to and serve nearby low-income, Black residents. D-Town activists invite community input into the foods they grow, generate and share culturally-relevant information about healthy food, and are staunchly committed to maintaining control of their local food security movement, rather than entrusting it to outside entities. As one farmer explains, many food security activists are White, and while they are well meaning,
they are often afforded “a degree of control over urban agriculture…which is inordinate to their actual numbers in the population, and that is a problem” (White 2010:204).

Alkon (2012) finds similar efforts to contest Whiteness in a comparison of two farmers markets in the San Francisco area: one that serves predominately affluent White customers, and another that serves a more diverse population in terms of both race and income. The former, the North Berkeley farmers market, outwardly adopts a colorblind message that technically invites everyone to participate. However, high prices, a White farm imaginary, and a lack of non-White culturally specific foods combine to create an unwelcome atmosphere for low-income and non-White customers. The lack of non-White customers is frequently construed as a choice by the producers and vendors, rather than being acknowledged as a response to financial or social barriers. In contrast, the West Oakland farmers market, located in a predominately Black neighborhood, is constructed as a Black space, in resistance to the pervasive Whiteness of other alternative food markets, including the North Berkeley market. Alkon (2012) finds that when vendors and customers at the West Oakland market refer to “ourselves,” they are not talking about locals or all customers, but specifically about African-Americans. Customers at the West Oakland market also express a desire to specifically support Black farmers.

In other cases, farmers eschew White idioms and adopt names such as “Mo’ Betta Foods” and “Black to our Roots” in order to create a more inviting atmosphere for non-White customers (Guthman 2008a). There are several challenges, however, for food justice initiatives that seek to contest Whitened alternative food practices. As illustrated in the case of D-Town farmers, for example, participants have struggled to maintain control of the
movement within a low-income, non-White community, while also welcoming cooperation and financial resources from outside, usually White, collaborators. This is especially difficult when the target customer base cannot afford to keep a market afloat on its own.

While the West Oakland farmers market, for example, strives to construct itself as a Black space, it struggles to incorporate a classed perspective as well, since the very fact that it is a market requires it to maintain a strong base of customers. This enables middle-class Blacks to be drawn into the food justice community, “which yields them a vibrant public space and access to one of the neighborhood’s few sources of fresh produce” (Alkon 2012:109). At the same time, the market is often void of the nearby low-income, food-insecure Black residents, the very people for whom the farmers market was intended to serve (White 2011). In addition, the struggle to carve out Black spaces can sometimes come at the expense of actively keeping out White people who may want to help (Guthman 2008a, White 2010).

Though the number of food justice projects continues to grow, little is known about their effectiveness in increasing access to healthy food among low-income populations, or what makes them succeed or fail (Guthman 2008a). It is therefore important to examine the tensions and contradictions discussed above to better understand the alternative food movement’s pitfalls and potentials for promoting food justice. Many scholars have explored the role of race in the alternative food movement (Alkon and McCullen 2010, Guthman 2011, Slocum 2006). Some have looked specifically at existing food justice initiatives and how they struggle with issues of racial sensitivity and balance economic viability with serving low-income communities (Alkon 2012, White 2010, White 2011). There is a need,
however, for more studies in a similar vein (Tregear 2011). The majority of these applied studies focus on farmers markets, and all of them deal with existing enterprises, with existing narratives, cultural norms, and consumer bases. None have focused on an emerging food cooperative in a low-income community with poor food access. While it is important to understand how existing discourses are reinforced, challenged, or re-negotiated over time, there is a need for research on how they are addressed in the first place. In a developing food cooperative, for example, narratives must be agreed upon and a consumer base must be cultivated. Given ample evidence that such initiatives are often exclusive of the very people they aimed to serve, research is needed on how this process may develop and how market-based pressures can undermine inclusive intentions. In this project, I conducted participant observations with a developing food cooperative, which allowed me to examine how discourse around race, class, and food access emerged, and how tensions were negotiated—or circumvented—as they arose.

RESEARCH QUESTIONS

In my observations, I paid particular attention to the ways in which questions of income, class, race, or resident/non-resident status were addressed. Based on previous research on alternative food movements, I was also particularly interested in how other participants articulated notions of “healthy” or good food. What underlying assumptions did participants have about these foods, and how were these tied to race and class? I focused especially on the ways in which assumptions and ideas about healthy food unintentionally promoted dominant White culture. In addition, some previous research highlights cases of food justice projects where participants actively work to challenge a White narrative. How
did participants in this case deal with the challenge of keeping control of the project in the hands of community members without discouraging outside collaboration and resources, particularly from White allies who did not live in the neighborhood? And, in addition to racial tensions, I also focused on discussions of affordability. How did participants negotiate, or not, the tension of trying to serve a low-income population that could not afford to keep a cooperative afloat without outside financial support?

DESCRIPTION OF CASE

My work focused on an urban food desert in a major city in the South, which lost two of its only supermarkets in early 2013. The neighborhood is historically Black, and the majority (71%) of its residents today are Black (US Census 2000). There has been a shift in racial composition in the neighborhood over the past decade, however. With a rapidly growing first-generation immigrant population, the neighborhood has seen a 59% increase in Hispanic residents and a 13% decrease in Black residents over the past ten years (US Census 2000, 2012). There has also been noticeable gentrification in some parts of the neighborhood, and the White population has increased by 58% over the same time period. With a median household income of just $17,000 (compared to $55,000 in the city as a whole), and a poverty rate of 41%, the neighborhood is also one of the poorest in the city (US Census 2012).

In 2012, a dedicated group of community “residents, leaders, and visionaries” began to develop the Bountiful Earth Food Cooperative (BEFC)6, which was formally incorporated

6 I replaced the names of the cooperative, local organizations, and all participants with pseudonyms. I used original names for large, national organizations or businesses that could not be used to identify a place.
in July of 2013. According to their promotional materials, BEFC aims to bring fresh, healthy, affordable food to their community through a multi-stakeholder cooperative. The initiative garnered renewed attention and energy in the wake of the closing of the two supermarkets. At a public meeting in mid-2013, one of the core leaders of the BEFC appealed to the gathered community members to “take advantage of this emergency that we face and do something positive for ourselves.” Since that time, the BEFC has held regular meetings for both the core leadership team and the community as a whole, developing a mission guided by seven cooperative principles, and attempting to generate community involvement and support.

Though the foundational idea of the BEFC is to bring fresh, healthy, and affordable food to an underserved community, the cooperative considers itself driven by several other goals, including promoting community health and sustainability and creating living-wage jobs, among others. BEFC asserts that it formed in response to “layers of neglect and disenfranchisement” witnessed by residents of the community. As such, prioritizing community needs is central to BEFC’s identity. Similarly, a strong element of BEFC’s mission is the idea that the cooperative, in order to reflect the demographics of the community in question, should be run mostly by people of color. The core leadership team is mostly made up of African-American residents from the neighborhood.

This is an excellent case for addressing the research questions above in part because the core leadership team is aware of racial tensions in their neighborhood, including recent gentrification, as well as economic constraints of the community that they hope to serve. Their mission includes bringing “healthy, affordable food” to an underserved area. Yet previous studies of similar food projects suggest that they often exclude low-income,
minority residents even when they intended to help them. This case therefore allowed me to examine the processes that could unintentionally perpetuate raced or classed inequalities, even when organizers were sensitive to them.

DATA AND METHODS

Bountiful Earth holds regular, once-a-month community meetings, in addition to sporadic events such as tabling at city festivals and canvassing. In July 2014, BEFC held their Membership Drive Kickoff, an official “launch” to the public. I became acquainted with BEFC through my time as a research assistant with Voices into Action, a USDA-funded project about families and food. After attending a garden volunteer day as a representative of Voices into Action, I became a regular attendant at BEFC meetings starting in September 2013 and a member-owner in early 2014. I conducted participant observations within BEFC beginning in January 2014, and continued until January 2016, approximately eighteen months after the Membership Drive Kickoff. I attended most monthly community meetings, one core leadership team meeting, and a variety of outreach events, including two community listening sessions, a community garden volunteer day, an afternoon door-to-door canvassing in the neighborhood, and tabling at one city event, an African-American Cultural Festival. As a member-owner, I also received and filled out a member-owner survey and received email reminders and updates from BEFC.

At each meeting, I took handwritten notes, focusing on discussions about how decisions would be made, community needs, affordability, healthy food, financial viability, raising money, and volunteering. I tried to capture as much of the dialogue as possible, as well as things I noticed about people’s body language and tone. In addition, I recorded the
number of attendants at each meeting, as well as the racial and gender composition, and also kept track of how often I saw regular participants. After each meeting and event, I typed up my notes and drew connections to previous meeting notes. I developed codes from the common themes and analytical categories that emerged through my observations, which I coded by hand.

Initially, I was one of the only White attendants at meetings, as well as one of the youngest attendants. Early in the observation period, I felt a clear distinction between myself and other participants. Often, the meeting facilitator would introduce me as a representative of Voices into Action. It took me several months of repeated clarifications before other attendants recognized that I attended the meetings as a member of the public, and not on behalf of Voices into Action. Even after becoming a member-owner, it was often difficult for me to draw other attendants into conversations or to get information from the leadership team; for example, I never received the results of the member-owner survey, despite asking multiple times and being told that any member-owner could view the results. As the composition of attendants began to shift to include more White people, and more young people, I found that I was more often asked for my input directly, whereas previously I had not been excluded from participating, but also not invited to; by the end of the formal observation period, I was even asked if I would be interested in sitting on the Board of Directors in the future. While I suspect that this was partially due to the changing composition, I believe it was due mostly to time and my participation in some community events.
FINDINGS

Throughout my time with BEFC, I observed the negotiation of many themes that previous scholars have described in existing food justice initiatives. These included affordability, the challenge of balancing outsider support while upholding insider interests, pros and cons of working with allies, efforts to contest normalized Whiteness, and the privileging of alternative foods. Sometimes these topics were addressed directly, and other times participants were hesitant to engage with them. Sometimes people’s own preferences and assumptions served to undermine their inclusive intentions. Overall, however, I found that though there were a lot of challenges without easy solutions, the leadership of BEFC were generally well aware of the difficult balance they were trying to achieve.

AFFORDABILITY

As expected, affordability emerged as a strong theme throughout my observations. Affordability is one component of BEFC’s core values; their mission statement includes the goal of increasing “access to fresh, healthy, and affordable food.” Despite BEFC’s stated commitment to keeping the cost of food within the means of the average community member, I observed that BEFC member-owners and participants initially displayed a strong aversion to openly discussing issues of affordability at meetings and events. Sometimes, I was given the impression that attendants felt issues of affordability had already been addressed and therefore did not need to be rehashed. For example, Rhonda was a middle-aged Black woman who had lived in the neighborhood for many years and was one of the people who developed the initial idea for Bountiful Earth. A member of the core leadership team and, later, the Board of Directors, Rhonda was present at nearly all meetings and
events. At one of my first meetings, I asked whether or not SNAP benefits would be accepted at the cooperative. Rhonda decisively responded, “Yes, that’s been discussed,” and moved onto a new topic right away.

Another time, I participated in a door-to-door canvassing effort in a neighborhood within the community. Mariana was a middle-aged Latina woman who lived in the neighborhood during part of my observation period, and she temporarily served in a leadership role. She divided us into groups and streets and gave us a survey to use, which included a question about how much money per month the household spent on groceries. Before we began canvassing, Mariana invited us to make suggestions for other questions we might ask. I suggested asking whether the household receives SNAP; Mariana stated that “that’s irrelevant” because we had already decided that BEFC would accept SNAP benefits, so it didn’t matter whether people would be using them to shop there or not. She was also concerned that such a question might offend people, and several volunteers agreed with this; one further added that he would feel uncomfortable asking that question.

Conflating affordability with access

Other times, participants avoided addressing affordability directly by conflating it with access. For example, at one regular monthly meeting, Anita, a middle-aged Black resident of the neighborhood who later sat on the Board of Directors, expressed a concern that “low-income folks” may not see the cooperative as “something for them.” She added, “I don’t think our intent was to start a co-op for the sake of it,” and asked the group whether we wanted a co-op if we weren’t reaching the people we had initially targeted. Marcel, a regular
meeting attendant, was a middle-aged Black neighborhood resident who operated a longstanding mobile produce market. Marcel responded to Anita somewhat dismissively, saying that he thought that “once the store opens, people will come.” Richard was an older White man who regularly came to meetings. He lived over half an hour away, but was a strong supportive of cooperative economies and an ardent supporter of BEFC. Richard agreed with Marcel that, while there were “specific people we intend to serve,” another way to look at the cooperative was as “a need to be fulfilled.” “If we manifest the resources that allow people to fulfill their needs, we will be successful,” he continued. Richard and Marcel sidestepped Anita’s concerns about affordability and whether residents would want to shop at the cooperative, instead focusing on physical access. In doing so, they expressed their own assumption that access to the cooperative was the main barrier for residents.

Affordability and access were similarly conflated on two surveys distributed by BEFC. The first survey was sent out to all member-owners in mid-2015, about a year after the Membership Drive Kickoff, to assess what collective vision for the co-op. One question asked, “What are the most important factors for you in your food cooperative?” with one choice being “affordability and access,” despite these being two very different points. The same response choices were used on a different survey that volunteers administered to neighborhood residents during a canvassing event. The combination of these two points into one is especially interesting given that “local produce” and “organic products” were separated into their own choices.

Because of the way affordability and access were conflated into one choice on both surveys, even if all respondents chose “affordability and access” as an important factor, we
would not know which of the two mattered more. Further, the question reinforces the idea that creating access by opening a co-op, regardless of price points, fully addresses community concerns. On the canvassing survey, affordability was also conflated with “healthy,” something that is prevalent in BEFC’s promotional materials. One question asked respondents how much they agreed with the statement, “I can easily find affordable, healthy food. I am satisfied with the grocery store(s) where I shop.” Aside from the double-barred nature of this question, it does not address important points such as what affordable means, what healthy means, and whether respondents want to buy healthy foods. Instead, it subtly assumes that “healthy” food, as defined by the co-op, is the superior option and that it is specifically the affordability of and access to those types of foods that is important.

**Affordability and financial viability**

Meeting participants were also reluctant to discuss the affordability of membership in BEFC. Founding membership in the cooperative costs $100, but there is an option to pay this in four $25 installments; installments can be paid at any interval, but must be completed within one year. Uriah, an older Black neighborhood resident on the core leadership team, and later the Board of Directors, explained that this payment plan option was created with the idea of being more inclusive to community members. Occasionally, someone would raise a question about the affordability of the membership. For example, at one meeting I suggested creating a sponsor membership, where for example I could buy a portion of someone else’s membership to make it more affordable for them. Rhonda reminded me that BEFC offers the
four-installment payment plan, and this was usually brought up to end the discussion when questions or suggestions like mine were raised.

Given the high poverty rated within the community, however—around 41% according to the 2000 Census—even a $25 payment may beyond the means of many neighborhood residents. There is also a high risk to joining the co-op at an early stage, with no reward for a long time; since the cooperative does not yet exist, there are no current member-owner benefits and funds will not be returned if the cooperative is unsuccessful. This four-installment approach stands in contrast to the strategy of another developing co-op in a nearby town. Rise Up Co-op had some similarities to BEFC, for example a proposed location in a low-income, majority Black food desert. This cooperative also had the same membership fee of $100, but it could be paid in increments of as little as a dollar at a time. While many of BEFC’s members lived outside of the community, Rise Up’s membership was over 90% people who lived within one neighborhood less than a mile from the proposed store location. Though there are many differences between BEFC and Rise Up, their experiences highlight another approach to making co-op membership more affordable to a low-income population.

In addition to the affordability of membership, attendants also discussed the affordability of the food and other products that might be sold at the cooperative. Given that BEFC aims to be a multi-stakeholder cooperative—with consumer, worker, and producer owners—there is an inherent conflict between producers who prefer higher prices and consumers who prefer lower prices. At one meeting, an attendant expressed concern that price points in food cooperatives are often high, but community members may not be able to
afford that. She asked how we would keep prices low enough for community members to afford while also making sure farmers make a profit. A young Black neighborhood resident on the core leadership team, Jaini, spoke up to respond. Jaini had worked for multiple community organizations in the past and eventually joined BEFC’s Board of Directors. She said, “We’ve definitely thought about that,” but “Do we have an answer today? No.” In this example, Jaini tried to reassure the attendant that the leadership team was sensitive to the challenge of balancing profit and affordability. At the same time, she also acknowledged that they did not have a solution but were committed to moving forward before finding one.

This tension also demonstrates another side of one of BEFC’s biggest challenges, the fact that serving low-income community members means that customers may not be able to afford to buy memberships or otherwise support the co-op financially. This is important for two reasons. First, member-owners get a vote in co-op decisions, such as who sits on the Board of Directors or what types of food to offer. Second, in a market-based initiative like BEFC, customers also “vote with their dollars” by buying some products and not others. If community members are excluded from these processes because they cannot afford a membership, it is less likely that community interests will be supported. At the same time, the people attending BEFC meetings knew that fundraising and financial support were vital to success.

In some cases, community involvement was knowingly overlooked because of the need to raise money. For example, one recent fundraising idea included partnering with a local coffee producer, who would put the BEFC logo on its coffee bags and allow us to sell them to raise awareness. The coffee sells for over $14 per pound. Uriah met with the coffee
producer and reported back at one meeting. “It’s not cheap coffee,” he admitted. “We’re not trying to get low-income people to get it,” but instead would target people who have a lot of money and love coffee. Many people who live in the neighborhood would likely be unable to afford the coffee, which Uriah explicitly recognized in the above quote. Thus, while selling the coffee to higher-income individuals would spread awareness about BEFC, it would do so mainly among people who do not live in the neighborhood. In this case, the unaffordability of a product designed to generate interest in the co-op was conceded, but accepted in exchange for financial support.

Ultimately, affordability proved to be one of the most difficult topics for meeting attendants to engage with directly. Though affordability was a major part of BEFC’s mission, participants disagreed about what that would look like or how it could be achieved. For the most part, people also assumed that neighborhood residents’ primary barrier to food was physical access, not affordability. There was a pervasive idea that opening a co-op would serve the community in and of itself, and therefore people were reluctant to consider the possibility that neighborhood residents might not be able to afford to join or shop at the co-op. This idea ignores the fact that anyone who could not afford to join or shop would be excluded from votes (whether member-owner votes or consumer “dollar” votes), which could undermine the initial goal of serving the community.

BALANCING COMMUNITY AND OUTSIDER INTERESTS

As discussed in the previous section, the challenge of balancing community interests and those of member-owners and other outsiders also came up frequently in my observations. While Jaini, for example, strongly believed that the cooperative should be “a community-
driven endeavor or it’s not at all,” she often represented the minority. Many meeting attendants were hesitant to openly address the balance between community and member-owner needs/wants, instead sidestepping or downplaying the issue. At one meeting, for example, I expressed concern that, if the member-owners didn’t accurately reflect the community, BEFC might end up stocking food that the member-owners vote for, but the community doesn’t want. In response, Richard argued that “those decisions are made by a board down the road. We [member-owners] won’t be voting on that and making those kinds of decisions.” Richard ignored, however, that member-owners had already filled out a survey which included a question about whether we “prefer a hybrid model [of conventional and organic/local products] or a straight conventional?” The results indicated that we collectively preferred a hybrid model, which does have direct implications for the types of food that would be sold at the co-op. By focusing on whether or not we would technically vote on the specific types of food sold, however, Richard distracted from the larger point that the community may be excluded from decision making.

Jan, an older White woman who had lived in the neighborhood for many years, had also been a social worker in the community. She shared my concerns about community involvement, saying at a different meeting that “if new members are not living in [the neighborhood], it will be harder to serve them.” Laura, a young White woman who regularly attended meetings, disagreed with Jan. Laura was an intern with Hunger-Free Families (HFF), a regional hunger-relief organization that engages in a variety of initiatives such as urban gardens, nutrition education, and mobile markets. She countered that “the community will be served by a business pumping money into it.” While Richard sidestepped the issue of
community needs, Laura dismissed it as not a problem, though this was based on her own assumptions about what would be best for the community. Mariana similarly downplayed the concern, reminding Jan that BEFC’s mission requires that the Board of Directors be “mostly” made up of neighborhood residents (and people of color). Though an important goal, this ultimately has no bearing on the composition or voting tendencies of member-owners. Still, it was frequently brought up as an answer to concerns about losing community control.

Thus, some participants, mostly non-residents, resisted the idea that community interests could be overpowered by outside influences. Despite this, members of the core leadership team were clearly sensitive to the possibility, even though they were sometimes reluctant to discuss it. For example, at one more recent meeting we were joined by Debra, an employee of a regional organization that supports the development of cooperatives, who came to meetings regularly to report on feasibility studies and BEFC’s business plan. At this meeting, Debra facilitated a discussion about “the membership vision” and whether it had changed since BEFC’s inception. This was a topic that several attendees, including myself, had tried—indirectly and directly—to bring up before, but that the group as a whole had been resistant to discussing. It took prodding before anyone would speak; I felt like a child in school as Debra admonished us that BEFC was getting to a point where we would have to start making hard decisions, and so it was time to have hard discussions. Eventually, Rhonda admitted that the composition of the member-owners—mostly White, non-residents—was not what she had originally envisioned. “When we started, this neighborhood was changing,” she said, referring to the rapid gentrification of the area. “I thought it would be a brown co-op. Now, [membership] reflects more what the neighborhood is now.” Uriah agreed, saying
that he saw “a distinction between who our members are and the people we wanted to serve.” While Rhonda spoke to the composition of member-owners being different than the community, Uriah further acknowledged that this might result in a divergence of interests.

In another example, at a community listening session where BEFC leaders sought feedback on the organization’s core goals, Mariana noted that input from the community was important because the goals would be “useless, useless” if they came from “some organization or politician and there is no community participation.” In doing so, she emphasized how important it was for community members to make key decisions about BEFC. Several months later, however, after the Membership Drive had proven to be slow going, Mariana referred to the high poverty rate in the neighborhood and cautiously admitted that BEFC was “going to have to be creative with partnerships because of the demographics of this neighborhood.” Here, Mariana recognized that BEFC would need financial support and input from people outside of the neighborhood, and conceded that they would need to expand their network of partners. Still, she was reluctant to state this explicitly and framed it positively, as being “creative,” rather than as a concession or a challenge. In this case, however, Mariana actually shifted her position quite a bit. In the first quote, she held that outside input without community involvement would be “useless.” Later, however, she reframes the idea of “use” to acknowledge that outside partners would be not only useful, but necessary, from a financial point of view.
Resisting outside control

I witnessed this challenges of weighing outside partnership very clearly when I was able to sit in on a leadership team meeting. The regular monthly meeting was canceled because the leadership team wanted to discuss an important development in the neighborhood, the opening of a new YMCA facility that would include housing space and, possibly, a food store. At the meeting, the leadership team discussed a possible partnership with the YMCA. Many of the people present were excited about the possibility, because there would be a guaranteed customer base built in due to the housing on site. However, while Jaini agreed that there could be some benefits, she had reservations about losing control of the direction of the cooperative. Jaini said that there could be “challenges and hard work” ahead if BEFC wanted to broach partnership because:

He who holds the land holds the power. And when you’re a White-led organization that’s been operating for decades and decades—well, it can be hard for them to change. But they have good intentions and are coming from a good place. It is a big recognition of White privilege to say, “okay, we own this land,” but then turn the power over to the community. But we [people of color] have to push it in the right direction to get where I envision.

She repeated that the YMCA was “coming from a good place and are committed to doing things in a different way,” and appreciated that a partnership could increase funding opportunities for BEFC. At the same time, she noted, “But lots of organizations and non-profits are talking about [neighborhood] and not doing a great job talking with [neighborhood].” Jaini therefore made it clear that, while there were probably benefits to
working with another organization, she had serious reservations about giving up control to a (White-led) organization coming in to the community rather than coming from it.

This was not the only time that concerns were raised with working with a long-standing organization. At one meeting, Laura suggested sharing space with Hunger-Free Families, which had operated for a little under 30 years; one of their local hunger-relief initiatives is a community garden space within the neighborhood. It was a warehouse at this location that Laura was suggesting. Rhonda and Mariana conferred amongst themselves before Mariana shared:

I want to start by appreciating your [Laura’s] passion and ideas, but we do want to share a little bit about our relationship with Hunger-Free Families. We have actually gone pretty far down the path of considering that location. But there are complexities to the relationship…there are not always positive feelings surrounding the way they engage the community. There has been a lot of turnover, and a lot of questions about whether they engage the community in a responsible way…this can come from having an organization that is so old and has so much leeway.

In fact, Jaini had been a long-time employee of HFF and had previously shared with the group that she left partly because she did not feel they adequately considered community needs. Rhonda’s husband, who occasionally came to BEFC meetings and also managed a community garden in the neighborhood, also had concerns about how HFF engaged the community. He had had a very difficult time inducing people to work in the garden or even to take the free food produced there. After putting in months of time, money, and labor, he was angered to find that HFF had planned a community gardening event in a neighboring lot
and put up signs in his garden, as if it were a part of their space. On the community
gardening day, he told me, “They got their photo ops” and had “a bunch of White people put
their hands in the dirt,” but he never saw anyone from HFF back to help again. This story
characterizes some of Rhonda and Mariana’s concerns with partnering with HFF, and speaks
to their commitment to serving community interests.

Bountiful Earth had consistent trouble with finding a suitable location, a stressor that
came up at nearly every meeting. On multiple occasions, meeting participants expressed their
worry about finding a spot; for example, Tatum, a regular attendant who operated a nearby
urban farm, was adamant—speaking over others and derailing other topics—at multiple
meetings that if we did not find a location soon, we would lose momentum and people would
stop coming to meetings and investing. Further, we had network connections to HFF and the
leadership team and already broached partnership with them. Given these facts, I found it
especially powerful that Rhonda and the rest of the core leadership team rejected the idea of
working with HFF, and were very cautious in their consideration of working with the
YMCA, as well.

In the discussions of both HFF and the YMCA, the age of the existing organizations
was cited as a possible explanation for entrenched views that ran counter to those of the
BEFC core leadership team. And in the case of the YMCA, it was not only that the
organization had been running a certain way for a long time, but specifically that it had been
led by Whites for a long time, that concerned some members of the board. The leadership
team of BEFC saw both the YMCA and HFF as powerful organizations that offered valuable
resources—primarily land/space, something which BEFC consistently struggled to gain
access to—but at the unacceptable cost of community control. In each case, BEFC leadership recognized that allies would be necessary, and generally wanted to work with partners, but also worked to resist too much influence from them.

WORKING WITH ALLIES

In the same way that I observed BEFC leaders try to reconcile the benefits and drawbacks to working with outside partner organizations, I heard many allusions to challenges with accepting help from individual allies who did not live and work within the neighborhood. Bountiful Earth has nine “What we know for sure” statements listed in their promotional materials. These include, for example, the idea that the cooperative should serve as a community gathering space and be located within the neighborhood boundaries. The statements also note that Bountiful Earth should be led by a “Majority [of] people of color” and that “The majority of the leadership should live in [neighborhood].” These statements are core values of BEFC and were frequently cited at meetings and events. At the same time, meeting participants acknowledged that the cooperative would need money and support from individuals outside of the community in order to be financially viable. As discussed above, this desire to maintain control within a low-income area while requiring resources from higher-income outsiders can create internal tension.

This was well illustrated at one meeting when Mariana started to split us into small groups to discuss different tasks, one of which was promoting BEFC by tabling at city events. A short but heated exchange broke out when someone argued that we were spending too much time tabling at events outside of the neighborhood. Jan worried that we were missing the focus on the neighborhood by going to events that mostly catered to higher-
income White residents of the city. “Just to be a little disruptive,” she said, “if we only go to city-wide events, are we tapping into the community here?” Ben, a young man who was the lone White member on the core leadership team, reacted defensively, quickly insisting that people from all over the city, including from the neighborhood, come to the city-wide events. Jan wryly asked how many current member-owners lived in the neighborhood. Ben became angry, getting red in the face and raising his voice. He dodged the question by citing the fact that everyone on the Board of Directors lived in the neighborhood, adding that “several” other member-owners did, as well. Mariana jumped in to moderate, saying:

*Great* points; we need you [Jan] in the tabling group! This point is a good one. Things have evolved and shifted and will continue to, but our core values include being [neighborhood] based. At the same time, we want anyone to join.

Here, Mariana tried to reconcile two divergent stances, but in a way that discouraged open discussion of Jan’s concerns. Mariana admitted vaguely that the composition of the cooperative member-owners had shifted, and furthermore suggested that this would continue to happen. In fact, by clearly opening BEFC to “anyone,” she subtly invited this shift. At the same time, she tried to reassure Jan that the core values remained the same. She also invited Jan to continue the conversation (by joining the tabling group)—but in a more controlled, small group setting rather than with everyone at the meeting. Ben’s defensive reaction and Mariana’s intervention to head off the debate suggested that the leadership team were uncomfortable critically examining the tension between outside influence and internal interests. This tension was a major challenge for BEFC, but also very common for food justice and alternative food initiatives in general, as discussed previously.
White fears of alienation

Interestingly, I observed several instances where White meeting attendants worried about being excluded from the cooperative. Laura chimed in to the above exchange, as well, agreeing that Jan’s points about reaching community members were valid, “but to reach our goals, we can’t just focus on [neighborhood], and we don’t want to alienate anyone.” Even though Mariana had explicitly said that we want “anyone” to join, Laura felt concerned that by focusing on the neighborhood that BEFC was created to serve, other people might feel alienated. This concern was common among other White, non-neighborhood residents, as well. At an early community listening session, Mariana mentioned the two core statements (being majority people of color led and majority resident led) while leading a discussion about BEFC’s goals. She said, however, that though BEFC “needs to be led by people of color and residents of [neighborhood], we need our allies! We want you were, we want you as part of this conversation.” When we were later invited to suggest goals for the cooperative, however, a young White woman in attendance suggested that BEFC “try not to be divisive racially” because there are “lots of different people in the community.” While true, the vast majority of neighborhood residents (71%) are Black; rather than being divisive racially, a “majority people of color” leadership team would actually be representative of the neighborhood.

Given the many way in which Whiteness pervades the alternative food movement, I found it particularly striking that some White attendants worried about being excluded or treated differently because of their race. With their comments, both Laura and the woman at the community listening session demonstrated how Whiteness is so dominant and normalized
that it is often invisible to White people. Most alternative food spaces (and spaces in general) are overwhelmingly White, so White people are automatically included. When the leadership of BEFC tried to make a space that also included people of color, the two women above felt concerned that they could be excluded, despite being clearly invited to participate in both cases.

At another monthly meeting, a young White man who had recently moved from another state was attending for the first time. During a discussion about financial viability, the man spoke up to say that it would be best not to restrict shopping at the cooperative to the community, but to encourage everyone to shop there, especially “upper-middle class people with money to burn.” Again, the man expressed concern about people outside of the community—in his mind, upper-middle class people—being excluded, despite it being his first meeting. Jaini responded by saying that anyone could shop there, and joked, “Oh, no, you can spend your money here, please.” By “you,” Jaini was referring to the upper-middle class outsiders that the man alluded to. Given her frankness about gentrification and the increasing White population surrounding the neighborhood at other meetings, I thought it was clear that Jaini was also subtly including White people in her “you.” Like Mariana above, Jaini’s response is welcoming of outside resources, and also subtly acknowledges that outsider resources are in fact necessary for the cooperative to succeed. Unlike Mariana, however, Jaini bracketed what she wanted from outside allies, financial resources, without also inviting their input.

In another example, a different young White man spoke up during a discussion about how the co-op needed to be located within the neighborhood boundaries. A Black community
resident expressed her concern that, as more people from outside the neighborhood joined
BEFC, they might outvote community members, jeopardizing the guarantee of a
neighborhood location. She brought up the refrain “one member, one vote,” which in the past
was frequently brought up as a positive representation of collective ownership. The new
participant, who lived in a wealthier nearby neighborhood, spoke up to say, “It’s pretty clear
to me that I can use the facility but not call the shots.” In this example, the man reinforced his
status as an outsider while also trying to demonstrate respect for community goals. However,
he glossed over the Black community member’s valid point of “one member, one vote,”
discounting the fact that, while he may choose to vote with the community’s interest in mind,
his vote is only one and he cannot control how anyone else votes. This argument is
reminiscent of the recent “not all men” controversy, in which an individual man seeks to
protect his own self-image by agreeing that, while sexism exists, he himself is blameless and
does not need to alter his behavior. Similarly, in the case of BEFC, the man sought to assure
the room that he would not attempt to exert control over the co-op without considering his
role in the larger system. Thus, while his comment seemed supportive on the surface, in
reality it derailed the conversation and shifted focus from a genuine concern about losing
community control to his own interests.

RACIAL UNDERCURRENTS

At most of the early meetings I attended, I was one of a very few White participants.
In these early meetings, I almost never heard discussions of race. As time went on, however,
I realized that though race was not often mentioned explicitly, it was a strong undercurrent to
many discussions (as in some examples I described above about the changing membership
vision and White fears of being excluded). Racial undercurrents became especially noticeable as the composition of meetings shifted throughout my observations, from being almost exclusively Black participants to roughly half Black and half White, with a small number of Latino or other participants. And as I got further into my observation period, some participants became increasingly open about discussing race.

Black empowerment

In particular, the cooperative was very often framed as an important avenue for “community” empowerment and self-reliance, with community frequently being a clear stand-in for “Black.” A good example of this occurred at a monthly meeting when a young White woman, who was not a regular attendant, asked if some property owners might be willing to offer discounted rent if they believed in the cause of the co-op. Mariana stressed that the core leadership team would prefer to rent-to-own rather than enter a long-term rental agreement, however. She explained that this was because one long-term goal of BEFC is to “lower barriers to land,” and eventually to own it, because they “prefer not to be beholden to someone else.” Mariana’s comment was meant to invoke the long history of Black land loss described above, something which was especially prevalent in Southern states with a history of African-American enslavement.

At another meeting, slavery was in fact invoked explicitly, as one neighborhood resident saw the cooperative as necessary for breaking down some of its pervasive influences. Akeem was a young Black man who lived in the neighborhood and was a member of the core leadership team before moving out of state. He believed strongly that
African-Americans should avoid eating “slave food,” or castoff products that no one else wanted to eat. “Kings and queens don’t eat [pig] feet” was a refrain he repeated on multiple occasions when the topic of increasing access to healthy foods came up. In addition to the fact that many other soul food dishes are also from the parts of animals that White people tend to discard (e.g. chitterlings, ham hocks, head cheese), Tipton-Morris (2014) argues that Black ways of cooking and eating have long been devalued by Whites. For Akeem, healthy eating was a way to assert his value, and a rejection of the idea that Black people only deserve to eat the food discarded by White people.

At another meeting, we split into smaller break-out groups to discuss different topics; I was specifically asked to join the “raising funds” group because of my connection with Voices into Action, which had previously given a small mini-grant to BEFC. However, it was quickly made clear that BEFC wanted to move away from writing grants and instead think of alternative ways to raise money. After several grant ideas were suggested, including another grant from Voices into Action, a matching grant from the Fund for Democratic Communities, and a start-up grant from a local organization, Mariana interrupted to reiterate that BEFC is really a collective enterprise and building a cooperative is a way to challenge the “traditional funder/grantee dynamic where people—usually marginalized people of color—are begging for money from powerful—usually White—people.” In this instance, as when emphasizing the importance of owning the land for the cooperative, Mariana evoked an idea of a powerful, typically White entity exerting control over marginalized people of color, and used the cooperative as a way to reject this system.
I commonly heard meeting attendants frame the cooperative as a way to reject the status quo and create something new. One of our meetings took place just days after the death of Michael Brown in Ferguson, Missouri, and less than a month after the death of Eric Garner in New York, two tragedies that sparked rapid growth of the Black Lives Matter movement. Though most meetings began with chatter between attendants, on this day, it was quiet in the room while we waited to begin. When the meeting time rolled around, Anita thanked everyone for being at the meeting, especially given “everything going on right now.” She introduced Rhonda, one of the original founders of BEFC mentioned above, who was supposed to lead the meeting. Rhonda sat quietly, hunched in her seat, for several moments before telling us that she was “carrying around a sadness I cannot shake.” Rhonda, who has two sons, continued that while she was “heartbroken” about the recent deaths, she felt even more strongly that their work with BEFC is important. “I am heartbroken, but I am hopeful, because the work that we are doing is transformative,” she concluded. In these affecting moments, neither Anita nor Rhonda mentioned race explicitly, but Rhonda clearly communicated how she envisioned the cooperative as a way to challenge a status quo in which Black communities are disenfranchised and devalued in American society.

In another example, Akeem said, “the co-op is secondary. This is to build power,” when explaining BEFC to new participants at the beginning of one meeting. He talked about how BEFC wanted to provide more than access to healthy food, but also to create jobs and something that the community could be proud to own, concluding that “This is a whole ideology.” Similarly, during a debate about the types of food that would be offered at the co-op, Rhonda spoke up to say “Forget what’s on the shelf—changing the fact of ownership is a
These non-food goals of the cooperative—e.g. collective ownership, job creation—were also important avenues for community empowerment. Both these examples, however, highlight how BEFC’s many goals were sometimes in competition with each other. By referring to the co-op as secondary, Akeem explicitly prioritized community empowerment above BEFC’s stated mission of increasing access to healthy, affordable food. Similarly, Rhonda shut down a debate about food offerings by arguing that a collectively owned enterprise in a disenfranchised community was in fact more important than smaller details of what the enterprise looked like.

**PRIVILEGING ALTERNATIVE FOODS**

As could be expected, I also frequently heard discussions about alternative food in my observations. One way in which food justice initiatives are often White coded is through creating a dichotomy between conventional and alternative foods, where alternative foods are assumed to be the superior option. I expected to see conventional and alternative foods set up in opposition indirectly in my observations, but was surprised to find that we actually addressed this openly quite often. I also expected that most people who ardently privileged alternative foods would be White member-owners who lived outside of the neighborhood. In reality, however, this was a view shared widely among meeting attendants, regardless of race or residence.

*Conventional food is “unhealthy” food*

Often, conventional foods were treated as inferior because they were considered to be unhealthy, and this was another way in which the multiple goals of BEFC were occasionally
at odds with each other. This came into play repeatedly when considering the goal of serving the community by increasing access to “healthy” food, without critically examining how healthy is defined and by whom. For example, at a regular monthly meeting, Uriah criticized the produce offered at the chain supermarket that had shut down a year prior, causing the neighborhood to become a food desert. He believed that “food is to nourish, to heal,” but that one thing he “found common with [supermarket] was the produce was really, very poor. Live food that was really dead.” As such said that he had never bought produce at that supermarket in the neighborhood. The same supermarket eventually closed, claiming slim profit margins, which led to the neighborhood’s designation as a food desert and the inception of BEFC, which Uriah viewed as an opportunity to bring better food to the neighborhood. In this example, Uriah felt strongly that food should be nourishing, which aligns with BEFC’s mission to increase access to healthy food. However, he also described how he had, in effect, voted with his dollars by refusing to buy the produce at the conventional supermarket in his neighborhood. In fact, one can purchase poor quality produce or unhealthy foods at alternative stores, too, but Uriah framed the closing of the conventional supermarket as an opportunity for an alternative model, which he assumed would offer healthier, fresher options. This suggests that he would be uninterested in supporting another conventional store, and envisioned BEFC not as a replacement for the supermarket, but an alternative, which prioritizes the “healthy” part of the mission over the “increasing access” part.

Like Uriah, others drew a parallel between food and health by criticizing conventional food as unhealthy. One older Black woman had lived in the neighborhood for
decades and had been a schoolteacher in the area for many years, as well. Now retired, she volunteered at a nearby school several days a week. She explained:

When I was teaching, I used to see my students bringing chips and junk food for breakfast. And I see that still! And it’s, you know, it’s mostly the African-American students. It’s—it’s important for the Black community to have healthy options. Some kids, you put a piece of fruit in front of them—well, some will take it, some won’t. But it’s important to have the choice, because first comes obesity and then comes diabetes.

Other participants also shared this woman’s concern with the negative health impacts of the food that was readily available in the neighborhood. At one meeting, a Black community member said he attended to hear about a solution to “Death Valley, Heart Attack Alley,” nicknames for one of the main roads bordering the neighborhood, which is home to several fast food restaurants and corner stores. Many in the room nodded their heads in agreement, and a few spoke up to share their own stories or concerns. For example, another Black community member shared that he was able to come off his blood pressure medication after three weeks after changing his diet.

*Alternative food is “healthy” food*

More generally, organic and local foods were frequently used as stand-ins for “healthy” food. At the community listening session in early 2014, Mariana asked attendants why they had come to the event. One young Latina woman in the audience, who later identified herself as an intern with a statewide organization that fights pesticide pollution,
complained, “There ain’t nothing good to eat over here! I’m tired of driving 20 minutes just to get something organic or with wheat in it.” This was also met with murmurs of agreement and head nods from others, including a shouted “Amen!” from somewhere in the room. In this case, the woman clearly privileged alternative foods by conflating “good” with organic, whole, and/or local foods.

In another example, at his first meeting, Tatum introduced himself as an organic farmer. He said he believed in organic farming because “without herbicides and pesticides, the food is a lot healthier that way.” When asked why he was interested in being a part of BEFC, he emphatically said, “People need to start eating for nutrition instead of taste!” a sentiment that was met with a chorus of pleased agreement from other attendants, with another White attendant even banging her hand on the table to applaud. As in the above case, “nutritious” food was conflated with organic and/or local food, clearly privileging these types of foods over conventional products. Interestingly, Tatum also inferred that taste and nutrition were mutually exclusive characteristics of food. What I found more compelling about this example, however, was how it included a value judgement about the people eating rather than just the food. Tatum implied that people who chose to eat for taste (conventional foods) were making a mistake and risking their health. He also issued a fairly authoritarian directive that people “need” to start eating for nutrition, suggesting that people who make the wrong choice should perhaps not have one. Further, his comment ignores the possibility that people who “eat for taste” or eat conventional foods may not actually have as much choice in the matter as he assumes. As mentioned above, the neighborhood is home to a large number of fast food restaurants and corner stores, and it is unlikely that most of the neighborhood’s
low-income residents could afford to regularly travel 20 minutes to find “good” food, like the woman above said she does.

An alternative-conventional dichotomy

I frequently heard alternative and conventional foods framed as opposing sides of a dichotomy. Usually, these discussions also revealed an underlying tension between balancing what member-owners wanted versus what the community might want. Before one meeting, we were told via email that we would be having a video call with Jeff, one of the organizers of Rise Up Co-op. When I arrived at the meeting, I noticed significantly more attendants than usual, and people chatting about being excited for the video call. I was also excited, because we had heard a lot about Rise Up in various meetings, mostly about how successful they had been. Rise Up had begun organizing some time before BEFC, but even still had seen a much more rapid growth in membership, secured a location, and in fact at the time of our video call was on the verge of breaking ground. When Jeff opened the call to questions from BEFC meeting attendants, Tatum asked Jeff how Rise Up was planning to engage with local producers. Jeff replied that “we’re not doing all that;” instead, he explained that the “community [had] been very clear about what they want,” which was a conventional-style store that carries items you would find in a large chain supermarket, “not a Whole Foods.” Immediately, several people tried to speak up at once, and it got loud in the room as people raised their voices to try to be heard over each other. Mariana stood up and waved her arms to indicate we should quiet down. She loudly told us to hold on a few times before the volume settled down enough for her to break in:
I just want to remind everyone that there are many similarities between Rise Up and Bountiful Earth, but there are also many differences. Rise Up is not following a natural, organic model. For now, Bountiful Earth is considering a hybrid model…that would include some conventional products at low price points to get people in the door…as well as more healthy local and organic items.

This seemed to mollify the group, because no one continued trying to speak up, and I saw people nodding their heads in agreement. Without anyone clearly stating why they were upset, Mariana intuited that people were angry at the suggestion that an alternative food model was not necessarily better. Mariana also validated this idea when she conflated “healthy” with “local and organic,” as well as when she positioned conventional products not as a service to the community, but a way to draw them in toward the better options. This example in particular highlights a tension between the desires of the member-owners of BEFC, most of whom were White and non-residents, and assumptions about the desires of the mostly Black community it is intended to serve. By noting that conventional products might be needed to “get people in the door” of the co-op, Mariana subtly acknowledged that the community may not be as interested in local and organic items, though these items were clearly important to the member-owners of BEFC. In contrast, Rise Up had strong community input and support; over 90% of its member-owners lived within the same neighborhood.

A related example came at one regular monthly meeting, someone raised a question about whether BEFC would stock pre-packaged and processed foods. Rhonda revealed that the core leadership team had discussed this before, and hadn’t come to an agreement. She
joked that she personally didn’t want to see Velveeta on the shelves. Jaini followed up that “we have had colorful discussions about this. But ultimately, it’s not up to us!” In Jaini’s view, the core leadership team’s opinion about stocking processed foods was moot because it would be up to the member-owners to decide and vote on the direction of the cooperative. “If they vote for Velveeta, we’ll have Velveeta,” she said. Laura was vehemently against this idea. Banging her hand on the table to claim the floor, she said:

If you want Velveeta, go to Food Lion, go to Walmart…If there’s gonna be a bunch of garbage there, then I don’t know if I want to give my money to support this. Food deserts are about healthy food. They can go to corner stores if they want Cheez-Its.

In this example, Laura likened processed foods to “garbage,” contrasted with healthy, non-processed foods, and even threatened to pull her support for the co-op if it sold food she did not condone. Jaini, however, countered that:

Our job is not to be tyrannical about what to eat—it’s to give people access to choices. You want to drink Kool-Aid every day? Drink Kool-Aid every day—but let me introduce you to this quinoa.

Though she disagreed with Laura about how to decide what foods to sell, in her rebuttal Jaini actually reinforced the opinion that some types of foods (i.e. whole foods like quinoa) were better options than others (i.e. processed, packaged foods like Kool-Aid). Jaini was consistently adamant about the importance of giving people access to choices. This idea, however, can serve to reinforce a dichotomy between alternative and conventional food products. In doing so, it also creates a false parallel that considers alternative food to be better because it is healthier without considering other factors that may play into such a
decision, for example affordability or personal taste. In addition to carrying some White-coded messages, discussions like this exchange between Laura and Jaini often included some uncertainty and tension surrounding how to balance the needs/wants of the community with the needs/wants of member-owners.

Both Laura and Jaini’s points above also underscored the idea that control over the cooperative’s direction would be in the hands of the people who pay to be member-owners, not strictly community members. This hearkens back to the earlier theme of balancing community participation and outside resources. While Jaini framed the democratic power of member-owners as a way to ensure that no one person or small group (not even the core leadership team) could dictate BEFC decisions, Laura framed it just the opposite, as a way to exert control. Without financial support from people who live outside the community, BEFC will not be able to open its doors. This means that, if the cooperative opens, the member-owners might end up voting against the interest of the community, because most of them don’t live there. But Laura demonstrated an even more direct way that money could be used to exert control, by suggesting that she would not financially support BEFC unless it adhered to her idea of offering healthy food. In doing so, she highlighted how the BEFC faces very difficult questions about how much outside control it is willing to accept in exchange for being able to cover its operating costs.

**DISCUSSION AND CONCLUSIONS**

Overall, my findings support previous research that indicates that there are significant challenges to trying to serve a low-income community that cannot afford to keep an alternative food market afloat on its own. While many times the member-owners and
leadership of BEFC seemed attuned to the fact that the cooperative price points should be low, in general I found a strong reluctance to openly discuss affordability. Despite a core value of bringing “affordable” food to an underserved area, member-owners did not want to discuss how to achieve that particular goal, or what it might look like. This was partially evident in a reluctance to discuss food safety net programs like SNAP, but more so in the overarching idea that affordability had been addressed through the payment plan and therefore was no longer an issue. In these cases, it was a lack of discussion that stood out. This poses a problem because the co-op will be a market that relies on consumer support. In some ways, meeting attendants recognized this, as they spoke of people voting with their dollars to determine what kinds of food would be sold at the co-op, for example. At the same time, this ignores the important fact DeLind (2011) notes, that in such a system, people with more dollars get more votes. As such, the most successful market-based alternative food projects are those that prioritize the issues most important to affluent consumers, not low-income ones (Alkon 2012). In the case of a food cooperative, member-owners also have a literal vote in co-op decisions. The reluctance to confront the ramifications of this therefore has real potential to exclude low-income individuals from being involved in co-op decisions, which makes it less likely that their interests will be supported.

More prominent, however, was the way in which affordability was frequently conflated with other concepts, mostly access. This struck me as a square-rectangle dilemma; while affordability is an important part of access, access does not address affordability. Yet with many attendants, increasing access was frequently positioned as the only, or at least most significant, barrier for residents. This echoes the findings of Short et al. (2007), who
note that the “if you build it, they will come” assumption is common among proponents of alternative food. There is little research to support this assumption, however, and in fact there are several recent studies that suggest that proximity is a low priority for many shoppers in deciding where to buy food (Hillier et al. 2007; Ver Ploeg et al. 2015).

Though meeting attendants would rarely engage with issues of affordability, they were much more open about the challenges of working with community partners and individual allies. This was very apparent when considering the need for financial support from wealthier non-residents. While the leadership of BEFC was welcoming of outside allies and resources, they also recognized that this relationship was at least somewhat necessary. Fundraising efforts, like the coffee sales, were designed to explicitly targeted individuals who did not live within the community, creating a catch where the most advertising and promotion was therefore also spent outside of the community. Still, most people agreed this was a great idea even as it was outright stated that it would not be “for” low-income individuals.

But while participants routinely acknowledged that there were benefits to outside support—money, time, and space—they also worked to resist too much outside control. Black participants noted that the composition of member-owners was not what they had originally envisioned, and expressed concern about how that might affect the co-op’s direction. Similarly, they were concerned about getting involved with large community institutions, both of which offered coveted space and a huge amount of resources, because of the potential for perpetuating a model of White, top-down management. Like other scholars have found, however, the leadership of BEFC had a hard time striking a balance between
being welcoming and resisting too much outside influence. For example, Alkon (2012) noticed that few low-income Black community members attended the farmers market that she studied. Similarly, the longer I participated in BEFC meetings and events, the more White, non-residents and the fewer Black community members attended meetings.

Both Guthman (2008a) and White (2010) have discussed how the struggle to create inclusive spaces sometimes involves a bind for Black leaders and participants; they recognize the good intentions of White allies, but are also wary of Whites overpowering the space or ignoring racial inequality. In my observations, I did see the leadership team explicitly invite people of color to participate, and work to make them feel valued. However, they also consistently invited “everyone” to come to meetings and provide input. I was surprised to realize, then, that other White attendants did generally share concerns about being alienated or excluded from the cooperative. It was not only surprising, but also disheartening to me, because it suggested a lack of respect for, or at least ignorance of, the historical context of the neighborhood and food justice movement. More generally, it exposed a lack of awareness of racial dynamics that made it easy to understand how Whiteness can bulldoze through an alternative food movement; without necessarily bearing any ill will toward non-White attendants, White participants still made a point of trying to construct the cooperative as a “colorblind” space which, by virtue of erasing people of color as the focus, reinforces a status quo of White dominance. Non-White participants were, on the other hand, not in a position to “ignore” race in the way that some White participants seemed to want to, instead struggling to continue welcoming the outside, often White, allies while maintaining control within and focus on a mostly Black community.
At the same time, however, there was not a clear divide between the views and interests of White and non-White attendants, as I had somewhat expected there to be. Instead, while White participants mostly adhered to a stereotypical alternative food ethos that ignores race, non-White participants expressed a more nuanced relationship with the concept of food justice and its racial implications. At times, non-White participants evoked powerful racial dynamics—for example Black land loss or exploitative financial institutions—and positioned the cooperative as a tool to resist discrimination and disenfranchisement. From the beginning, it was very clear that BEFC was never “just” about increasing access to food, but also about collective ownership, workers’ rights, social justice, and Black empowerment, themes that came up again and again at meetings. Yet there was also a mostly unquestioned and very strong privileging of local, organic, and “healthy” foods (e.g. produce and whole, unprocessed foods) that is typically associated with more affluent and/or White consumers.

Perhaps more importantly, this privileging left little room for questions of who makes decisions about what foods are good or bad, whether the “good” foods were realistic for the community, or what community members even wanted. In reality, the alternative foods preferred by many participants are more expensive than conventional foods, which runs directly counter to BEFC’s mission of increasing access to affordable foods; this is a common way in which class becomes a barrier to food justice (Szasz 2009). In some cases, food traditionally consumed by African-Americans, like pig feet and other soul foods, were criticized. Yet these products can be organic or local just like the fruits and vegetables that were often proffered as an example of good foods. This speaks to DuPuis and Goodman’s
Bountiful Earth organizers were keenly aware of the challenges and racial implications of accepting outside help. Previous research describes the repercussions of these tensions, for example that low-income and minority individuals often feel unwelcome or are excluded from food justice projects. My observations contribute to this body of work by providing insight into the ways in which these processes develop. On the whole, the tensions described throughout were not the result of ignorance, willful or otherwise. Instead, they were, for the most part, out in the open and meeting participants negotiated them over time. The leadership team had to adjust their expectations for co-op membership, accepting that it would be less representative of the community (i.e. more White) than they hoped or anticipated, for example. They also struggled to explicitly acknowledge or address class-based implications, particularly what might happen when most member-owners—necessary for the co-op to open its doors—do not live within the community BEFC is trying to serve. There was a pervasive idea among participants that residents would come to the co-op once it was there, and in general we collectively turned a blind eye turned to the fact that the people who would make decisions about the co-op would always be the ones who paid for memberships. Meanwhile, some White participants had to face the fact that they are not the focus of the BEFC, and unfortunately I saw resistance to this. These are challenges that BEFC will continue to face and which have no easy answer.

Despite these challenges, and despite some discourse that may ultimately (unintentionally) exclude the people they intend to serve, Bountiful Earth leadership are
trying hard to create an inclusive space that serves a community about which they care deeply. It is also clear that this goes beyond an ideal on paper and extends into action. With messages of Black empowerment and core values that codify control by residents and people-of-color, meetings are constructed as a non-White space in which White allies are welcome to participate but not lead. More powerfully, however, BEFC leadership have grappled with real possibilities of bringing the co-op to fruition with the help of outside organizations sooner than they could on their own and, in at least one case, have rejected this. For now, at least, the leadership team has decided that it would be better to risk not being able to open than to risk losing control to a White-led, top-down organization that might perpetuate the type of institutional discrimination that BEFC was created to resist. My participation in BEFC during its developmental stages, as challenges arose and were negotiated, contributes substantial insight into the ways in which the discourses of alternative food initiatives often reproduce race and class inequalities. Finally, while the findings discussed here are a small part of the work that could be done, my work highlights the efforts of a community facing poor food access to overcome this within the context of a system that consistently undermines their efforts.
CHAPTER 5: CONCLUSION

This dissertation is a response to calls for multi-level studies of food access that consider interactions between larger-scale neighborhood characteristics and smaller-scale household and individual characteristics (Alkon et al. 2013; Larson et al. 2009; Lytle 2009). Research on food access has increased rapidly in recent years, but many questions remain as to how living in a food-poor environment matters to residents, or how people utilize their resources and environments to feed their families. The majority of the research on food access assumes that the food environment is deterministic; in other words, that residents’ shopping and eating behaviors are determined by food options available in their immediate surroundings. But while there is general consensus that certain types of neighborhoods have lower access to food than others (Dunkley et al. 2004; Morland et al. 2002; Powell et al. 2007), there is little consistent evidence that the food environment has a direct effect on people’s shopping or eating habits, or their health (Caspi et al. 2012a; Morland et al. 2006; Ver Ploeg et al. 2015). These studies are mostly large-scale and quantitative, and do not incorporate differences between households or individual preferences. Very few studies, however, have challenged deterministic assumptions about food environments to look more closely at how residents interact (or do not) with their food environments (Alkon et al. 2013; Hillier et al. 2011; Smith and Morton 2009). And while valuable, these studies are mostly location-specific and qualitative, and do not incorporate the wider built environment. Thus, because there are many complex factors at work in issues of food access, I argue that it is necessary to approach the problem with a variety of tools that give different levels of insight.
This mixed-methods approach contributes to the literature by providing small pieces of a large, complex puzzle that a single method cannot get at alone.

In Chapter 2, I used spatial statistical analyses to assess how living in a low-access food environment might affect household food insecurity, and how determinants of food insecurity vary across space and place. Based on the most commonly used conceptions of food environments and food access, I operationalized these variables using the availability of food stores and affordability of food near each household. I found that the food environment had no measurable effect on food insecurity in the United States. Most of the work that challenges proximity-based measures of food environments are small, qualitative studies. My project is the first to use nationally representative data to examine how food access affects a food-related outcome like food insecurity, which makes my results more generalizable than previous research. My null findings also help to explain the growing number of studies that demonstrate that people’s shopping and eating behaviors, and their outcomes, are largely unrelated to their immediate food environments (Caspi et al. 2012a; Cummins and Macintyre 2006; Freedman 2009; Holsten 2008; Morland et al. 2006; Pearson et al. 2005). I also found that other neighborhood- and household-level variables had a greater effect on food insecurity, particularly those related to household resources, such as income and owning a car, and that the effects of these determinants varied across place.

In Chapter 3, I employed a novel method, geo-ethnography, to bridge quantitative studies about where people shop for food with qualitative studies about how people interact with their food environments. I analyzed qualitative interviews with 100 low-income mothers about where they shop for food and why they choose those stores. Most people did not shop
for food at the nearest available supermarket, which provides some insight into why the food environment seems to be unrelated to shopping and eating outcomes, which my findings in Chapter 2 indicated. In their interviews, women said that the most important factor in deciding where to shop for them was not proximity, but the price of food. This supports other research that indicates that price is the most important factor in deciding where to shop for low-income consumers (Alkon et al. 2013; Dunkley et al. 2004; Hillier et al. 2011). My research goes beyond previous studies by also mapping the stores at which women shopped to determine how much farther they are willing to travel, which provides spatial context for their qualitative interviews. Women were primarily motivated by getting the most food for the least amount of money to stretch their food as long as possible in order to feed their families. To accomplish this, they were willing to travel twice as far as their nearest option, even when this increased the cost of travel.

In Chapter 4, I conducted participant observations at meetings and events for a developing food cooperative in an urban food desert. The leaders of the co-op were guided by a strong commitment to create an inclusive space, partly because of a long history of disenfranchisement and exclusion within their community. Throughout my observations, however, I observed meeting participants struggle to balance a focus on a low-income community with the logistical realities of a market-based initiative. Overall, community residents, who were mostly Black, emphasized the importance of creating choice, empowering the community, and not yielding too much control to outside organizations. In contrast, non-residents had a more paternalistic view about the need for healthy food, and prioritized quick progress over building partnerships that the leadership team felt comfortable
with. Further, much of the discourse surrounding just food reinforced raced and classed divisions that the leadership team tried to avoid. Other scholars have pointed out how White culture is reinforced through many of the messages of alternative food movements (Alkon and McCullen 2010; Guthman 2011; Slocum 2007), and my findings support this, as well. In addition, the leadership team often overlooked class-based issues about the affordability of joining and participating in the cooperative, despite the fact that there is a high level of poverty in the community.

Taken together, these studies illustrate the importance of a mixed-methods and multi-level approach to food access. The combination of different types of data at different scales provides us with multiple lenses through which to understand how people interact with their environments to shop for food. Chapter 2 demonstrates that there are unlikely to be many generalizable empirical rules that definitively tell us how neighborhood, household, and individual factors interact to influence food-related outcomes like food insecurity in all places; rather, it is important to consider place-based and area-level context when building models for specific regions. While my findings overall did not reveal many strong spatial relationships, this was largely due to too narrow a definition of access, and limitations in the data. Future research in this vein should take this into account and expand the operationalization of access. It would also be valuable to collect data from a more complete set of locations so that regions have an adequate number of neighbors to maximize the strengths of spatial analyses. Finally, my findings in Chapter 2 support, and complement, the more focused methods of my other chapters, particularly Chapter 3, by providing a large-scale, more generalizable context in which people make food shopping decisions. Knowing,
for example, how strongly household resources affected food insecurity, especially compared to the non-effect of the food environment, helps to explain why the women in Chapter 3 were willing to bypass their nearest stores to shop for food. The regional variability seen in the effect of race on food insecurity also has important implications for the food justice movement; in Chapter 4, for example, the history of disenfranchisement of the neighborhood’s Black residents, slavery in the U.S. South, and Black community cooperative economics, all played heavily into the leadership team’s motivations for starting the cooperative.

In turn, my findings in Chapters 3 and 4 contribute a more in-depth understanding of how household resources, race, and class influence the meaning of food and food shopping for people living in different places and in different contexts. The people in Chapters 3 and 4 represented several groups for whom food shopping and food stores had different meanings. In Chapter 3, the majority of the women were low-income SNAP participants, for whom food shopping was mostly about survival. Simply, they bought food because they needed to feed their families. Most of these women made hard decisions about where to shop, driven mostly by how to get the most food for the least amount of money, and so they valued food stores primarily based on the cost of food sold.

These experiences can be contrasted with those of the people working for a food cooperative in Chapter 4. The cooperative was intended to serve a low-income community that had similar demographics to the women in Chapter 3. Most meeting attendants, however, were in one of two groups: Black residents who lived in a low-income community but were financially better off than the average for the area, or White, middle-class non-residents. The
sometimes competing views on how to improve the neighborhood food environment were also informed by their own meanings surrounding food and food shopping. Middle-class Black participants in Chapter 4 were interested in serving their low-income community, but they also saw their co-op initiative as an avenue for food justice and community empowerment. In imagining their ideal food store, they did not focus primarily on the price of food. In fact, in meeting discussions, affordability was often overlooked. Instead, middle-class Black attendants tended to value stores that provided living wage jobs, offered healthy choices, and were not overly dependent on White organizations or allies.

Similarly, middle-class, White, non-resident attendants did not think of food shopping in terms of necessity. For many of them, food stores were valued based on whether they sold healthy food, with “healthy” meaning alternative food options like organic, whole, and local items. Some of them also considered food shopping to be a way to control others’ eating habits, by limiting the availability of unhealthy foods. Based on what the women in Chapter 3 shared, it seems unlikely that any of them would shop at the cooperative in Chapter 4 even if it were the closest option to their house, unless it were also the cheapest option. They would not be as interested in the availability of organic products or how much the employees were paid, and would probably be unable to afford a membership and gain a vote in co-op decisions. Focused on daily food provisioning for their families, the lower-income participants had less time and energy to look beyond affordability to factors like social justice and health. And unfortunately, in some ways, the discourse and priorities of wealthier individuals ended up reinforcing some class-based distinctions that might work to exclude low-income individuals from their project. As Alkon (2012) noted, this can give middle-class
Black residents of low-income, food poor environments access to a vibrant place to shop and healthy food options without addressing underlying disparities in food access.

There are several important implications of this dissertation, both for future research and policy. Future research should explore how employment plays into people’s food provisioning strategies, both in terms of geographic location of their workplaces and their available time in which to go shopping. Many people may shop near their workplaces, or on their commutes to or from work, even if these stores are not near their homes. This could alter the size or shape of a person’s perceived food environment, which would affect the results of spatial analyses like in Chapter 2. In addition, food shopping takes time, and the women in Chapter 3 in particular spent a lot of time planning for and making shopping trips. Low-income individuals are more likely to work shift jobs with irregular hours, which affects when they are able to shop for food. It also means they are likely to have less time to attend meetings or events for food justice initiatives like the co-op in Chapter 4, which could explain part of the member-owners’ difficulty in getting community members to attend meetings.

Further, these projects highlight the importance of community involvement in designing research questions, research studies, and interventions to address poor food access and food insecurity. Often, the very people who are most important to include are the most restricted; as seen with community members being largely absent from meetings in Chapter 4. Future research should explore why this might be—are community members uninterested in the co-op, or perhaps unaware of it? Given that low-income individuals are more likely to work shift jobs with unpredictable schedules, what strategies could food justice activists use
to make meetings and events more accommodating? This point in particular also has implications for Chapter 3; a small number of the women, for example, talked about how they shop near their workplaces. In addition, policies targeting food insecurity and poor food access would benefit from regional flexibility. Rather than blanket federal or state policies, we should consider federated programs instead; these allow local governments to decide how money for programs would be best used in their own communities. For example, a shuttle to take people to the supermarket would likely be a lot more beneficial in East Branson, where many people did not have cars, than in Kingston County.

However, some scholars have argued that a movement towards policy decisions at a local level reinforces inequality rather than reducing it. Soss et al. (2011), for example, explain how federal mandates in the 1970s to increase criminal penalties, proffered without guidelines or specifications, left states to decide their own crime policies. This led to a rapid increase in state-level legislation that increased the severity of criminal sanctions, extended imprisonment to additional crimes, and reduced opportunities for parole; the authors detail how these policies were not only more common and more severe in states with higher Black populations, but also disproportionately applied to Black than non-Black Americans. Similarly, Soss et al. (2011) demonstrate how state-driven welfare reform in the late 1990s had more racially discriminatory effects in areas with a higher percentage of Black residents. This context could help to explain why the leadership team of the food co-op in Chapter were protective of the direction of the co-op, and cautious of giving up too much of their control to larger, longstanding organizations. If the state received money from the federal government to start a co-op in the neighborhood, for example, it might not be built with the same guiding
principles that Bountiful Earth values. Similarly, the leadership team pushed against the idea of a traditional funder/grantee relationship; because there is an inherent power imbalance based on the funder’s financial resources, it is possible for funders to exert control over projects and direct things in a way that may not be beneficial for grantees, or may ignore grantees’ preferences or needs.

At the same time, the leadership team was only a small part of the community, and the majority of the participants at Bountiful Earth meetings were non-residents. In some ways, attendants exemplified the trends that Soss et al. (2011) caution against. For example, many member-owners (most of whom were not community residents) privileged alternative food systems, which often exclude non-White participants and increase disparities in access to food. This echoes previous work by Hinrichs (2000), who argues that power and privilege within local initiatives to address food access tend to be concentrated among educated, middle-class consumers rather than with low-income consumers. And as mentioned previously, my findings in Chapter 3 suggest that low-income consumers would be unlikely to shop at a store like the cooperative, unless it were the cheapest option; even then, it would depend on a variety of other factors that are not necessarily the same for everyone.

While these critiques of the devolution of policy decisions are important, what they may miss is that these examples actually refer to apparent or illusory local control. This is a problem specifically with larger policy actors stepping backwards, not a problem with bringing smaller-scale actors forward. In the case of local food justice initiatives, there is a risk of reinforcing inequality because there is a lack of true local control, and a dilution of what constitutes “local” (Hinrichs 2003). In the case of a neighborhood with poor food
access, the power is concentrated among elites at a middle level, whether this is supermarket owners, grantors, or even wealthier individuals who are more easily able to participate. If federal control is completely removed, middle-level elites can fill the power vacuum, leading existing unjust power structures to be reified. Thus, it is not necessarily the case that local control is problematic, but that local control is at risk of becoming middle-out, “elite” control unless specific measures are taken to ensure that local voices are actually heard in the process. For instance, in the food co-op, local control was threatened because middle-class, non-resident, White elites were able to dominate the process due to barriers arising from existing local power inequalities that may have prevented community members from participating—lack of childcare and time off of work, lack of knowledge about meeting times, lack of funds, lack of transportation, etc. In this example, federated support in the form of funds for childcare services for participants, travel accommodations, targeted outreach in the community, and other measures to reduce barriers to participation could help control remain truly local.

Thus, I am not proposing a devolution of political responsibility to the local level, but a federally supported and protected incorporation of community input into policy decisions that should have flexibility at the local level to adapt to different community needs. This could take the form of federal support for community-led food access initiatives or increased integration of community perspectives into existing policy decisions. My departure from problematic neoliberal “solutions” that Soss et al. (2011) warns against is that I am not proposing that the federal government step back from responsibility; rather that the federal government bring local voices to the front, while still playing an important supporting role.
In order for this to be possible, therefore, we need increased attention and resources devoted to addressing problems of poor food access and food insecurity. There are few government programs that specifically address food insecurity or poor food access; much of the effort to combat these issues falls to communities or private entities, for example churches or food pantries. Though SNAP and WIC are both designed to alleviate food insecurity to some degree, as I found in Chapter 3, many women ran out of SNAP benefits before the end of the month. This, as well as my findings from Chapters 2, clearly indicate the need for more policies and programs designed to address poverty more generally, not just food insecurity and food access. Policymakers and voters should more carefully reflect on their assumptions about the low-income individuals that such policies would serve. Some policies assume that low-income shoppers are reckless with money, as in the case of recent legislation to restrict SNAP users from buying steaks or seafood, for example. My findings in Chapter 3, however, demonstrate that the women worked extremely hard to overcome poor food access and avoid food insecurity. They managed complex shopping patterns and had sophisticated strategies for making a small budget go a long way. Further, the women shared many preferences for food shopping that are likely common among all consumers, including fresh food, cleanliness, ease of access, and ease of shopping. Policies that attempt to control the behaviors of shoppers deny them autonomy and agency, despite the fact that many are savvy, careful shoppers, who are working within disadvantaged food environments and with limited resources. To that end, policies and projects designed to address food insecurity and poor food access also need to move away from considering people as passive. Rather than
homogeneous actors that the environment happens to, people are active agents who interact with their environments.

In this dissertation, I offer three different methodological lenses with which to approach questions of food access and insecurity. This fills a gap in the literature on food deserts by responding directly to a call for mixed-method, multilevel research. The potential negative effects of poor food access, including food insecurity, make these important issues to understand. As I found in Chapter 2, inconsistencies in research on the outcomes of living in poor food environments is likely due to too narrow of a concept of “access.” Though proximity-based measures of food access dominate the literature, there is a need for continued research that considers household and individual factors such as the price of food, access to transportation, and the preferences and experiences of people who live in these areas. Furthermore, I demonstrate that we cannot generalize the experiences of living in areas of poor food access from place to place. Instead, local culture and context need to be considered in future studies. Thus, my dissertation provides an example of how using multiple methods to address similar questions yields greater insight into a complex problem. More importantly, it demonstrates how important it is to consider individuals’ and communities’ personal preferences into account when conceptualizing food access and food environments. Paradigms that focus on empirical drivers or outcomes related to food access that ignore local and social context are likely to miss the variations across place that arise from differences in individual preferences and experiences. While small-scale studies can be difficult to draw inferences from, large-scale analyses are unable to appropriately account for variations across place that arise from individual preferences and experiences. Analyses that
do not take the needs of the community into account are also unlikely to create meaningful
options and change for those who need improvements to food access the most. A theory that
bridges multiple scales and contexts has the potential to enable these positive changes and
could have wider applicability to other sociological problems as well.
REFERENCES


Anon. 2014. “Brooklyn Food Coalition.” Retrieved (brooklynfoodcoalition.org/who-we-are/).


DeLind, Laura B. 2011. “Are Local Food and the Local Food Movement Taking Us Where We Want to Go? Or Are We Hitching Our Wagons to the Wrong Stars?” Agriculture and Human Values 28(2):273–283.


Moore, Latetia V., Ana V.Diez Roux, Jennifer A. Nettleton, and David R. Jacobs. 2008.


